EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

25 EXCELLENCE

MANAGEMENT, PRINCIPAL, FACULTY MEMBERS & STAFF CORDIALLY INVITE YOU TO

National level Students Project - Exhibition

VIBRATIONS - 2k23

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Bengaluru

Dr. Prakash. S
Sr. Vice President, EPGI

CHIEF GUESTS

Dr. Siddesh G M, Professor
Department of Computer Science,
MSRIT, Bengaluru.

Mr. Dinesh M,
Principal Engineer,
Microchip, Bengaluru.

Ms. Divya Shree M,
Team Leader - UI Path MVP
TCS, Bengaluru.

Mr. Rakesh Kumar,
Managing Directer,
Zoid Industries, Bengaluru

Mr. Sumeg shirol,
Project Engineer,
Purvankara, Bengaluru

Dr. Prakash S V
Convener, EPCET

Dr. Yogesh G S
Principal, EPCET

Higher Education block | 📅 **09th May, 2023 -10 AM**

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

East Point College of Engineering and Technology Presents

VIBRATIONS-2K23

" NATIONAL LEVEL TECHNICAL PROJECT EXHIBITION & COMPETITION

(BLENDED MODE) "

Tuesday, 9th May 2023
09:30 am onwards

Rules and Regulations :

- Each team can have maximum of 4 members.
- Students must bring their own Laptops and other accessories needed for their projects.
- The competition is open to only under graduate students.
- Members should have a valid student ID card of their college.
- A team member can participate in only one project presentation.
- Judge's decision will be final.

Last Date for Registration: 8th May 2023

Venue:
East Point College of Engineering and Technology

Student Registration fee
INR 500/- per batch

Scan QR Code for Payment

Scan QR Code & Register

Contact us
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- Prof. Abhilash A, Dept. of M.E   : 9738213201
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Dr. Yogesh G S
Principal, EPCET

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY
Jnana Prabha, East Point Campus, Virgo Nagar Post, Avalahalli, Bengaluru, Karnataka 560049
Website: https://www.epcet.ac.in

Report on Vibrations 2023

Vibrations 2023, the national-level project exhibition and competition held at East Point College of Engineering & Technology on May 9th, 2023, was a resounding success. The event saw participation from 25 colleges across the country, and students from all branches put forth their best foot forward to showcase their innovative projects. Overall, there were 100 teams that presented their projects.

The Chief Guests and judges for the event were Dr. Siddesh from MSRIT, Dr. Dinesh from Microchip, Ms. Divyashree from TCS, Mr. Sumegh from Purvankara, and Mr. Rakesh from Zoid Industries, who graced the event and encouraged the students to showcase their technical knowledge and creativity.

Prof. Shilpa Patil, Welcomed the guests and students for the event. The Principal of EPCET Dr. Yogesh GS and Sr. Vice President of EPGI, Dr. Prakash addressed and motivated the students and acknowledged the students overwhelming response. Dr. Prakash SV, Director IQAC and convenor of Vibrations briefed about the event.

The event was a grand success with numerous innovative projects from various engineering disciplines, such as Civil Engineering, Mechanical Engineering, IOT, Artificial Intelligence, Machine Learning, Robotics, and many more. The competition provided a platform for students to showcase their technical knowledge and creativity and get valuable feedback from industry experts.

The projects presented at the exhibition were a testament to the exceptional talent and innovation of the engineering students. The judges highly appreciated the projects for their technical soundness, creativity, and applicability in real-life situations. The students demonstrated an in-depth understanding of the subject matter and presented their projects with enthusiasm, conviction, and confidence. Winners were rewarded with prizes.

Overall, Vibrations 2023 was a grand success and a tribute to the hard work and dedication of the students, faculty members, and organizers. The event concluded by vote of thanks by Prof. Geena.

Event Photos:

Figure 1: Dr. Prakash S, Senior Vice President, inuagrating Vibration 2023

Figure 2: Release of the Vibration 2023 Proceedings

Figure 3: Students demonstating the project to Dr. Yogesh, Principal, Dr. Prakash S, SVP EPCET and chief guest Dr. Siddesh, MSRIT
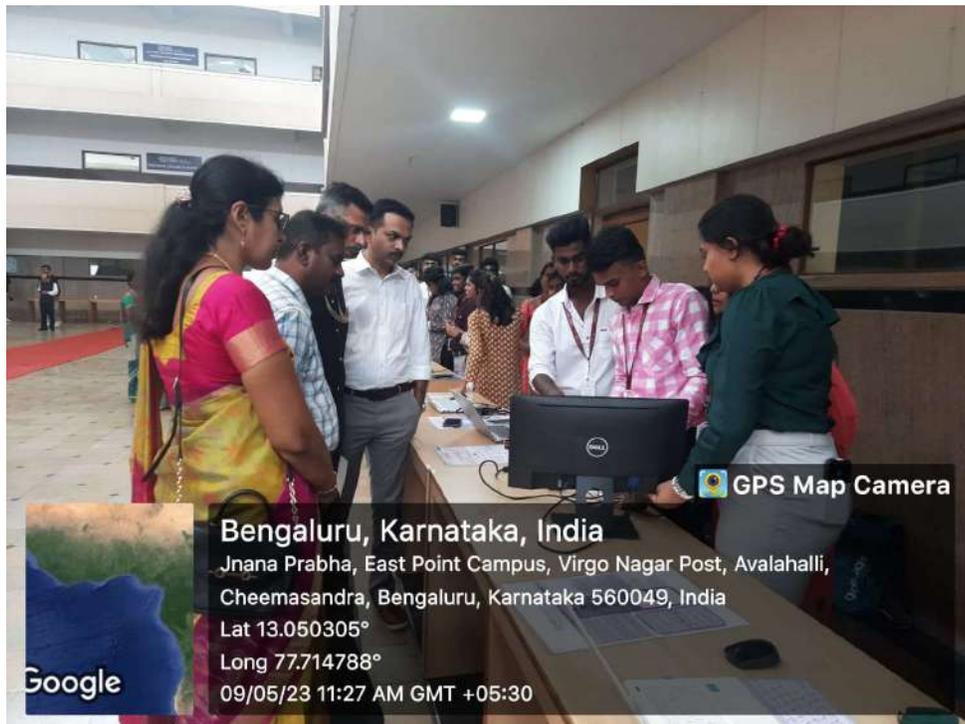

Figure 4: Dr. Yogesh G S, principal EPCET, Dr. C. Emilin Shyni, HOD-CSE and External judges reviewing the projects
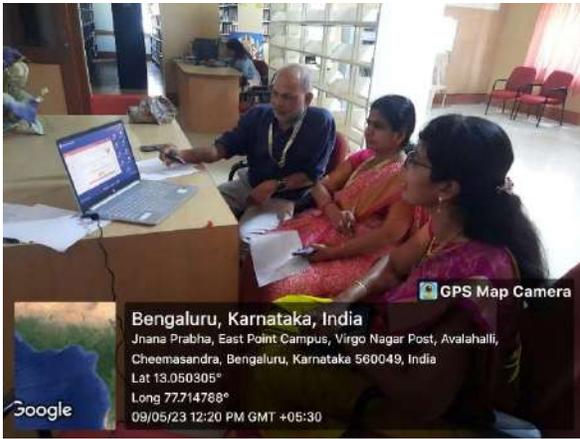
Figure 5: Dr. Manimozhi I, Associate professor-CSE and Mr. Shubanshu Saurabh, Associate Professor-department of AI&DS reviewing the projects through online mode

Figure 6: The judge of the event Ms. Divyashree, TCS, reviewing the projects.

Figure 7: Faculties reviewing the project demonstration

Figure 8: Prize distribution to the winners

East Point College of Engineering and Technology

East Point College of Engineering and Technology (EPCET) was established in the year 1999, by M. G. Charitable Trust, Bangalore. The College is in the eastern part of Bangalore at Bidarahalli, Virgonagar Post, Old Madras Road. It is at 5 km distance from K R Puram, Bangalore.

The College is affiliated to Visvesvaraya Technological University (VTU), Belgaum. All the undergraduate and postgraduate programs offered at EPCET have the approval of AICTE. The College at present offers programs in Artificial Intelligence and Data Science, IoT, Cyber Security with Block Chain Technology, Computer Science and Engineering, Information Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, and Civil Engineering leading to BE degree of VTU. The college is also offering three M.Tech programs- one each in Electronics and Communication, Mechanical Engineering, and Civil Engineering. At EPCET, more than 2000 students studying various programs, and there are more than 120 faculty members with about 25% of them having Ph.D. qualification. Faculty members, in addition to teaching and routine administrative work, undertake research. A few faculty members work in collaboration with prestigious national laboratories like LRDE- DRDO and publish their research findings in well-known journals. The programs offered by the college were accredited by NBA during 2008-2011, once again the departments have undergone the NBA accreditation process for their programs and waiting for the result. Various Newspapers including Times of India have ranked EPCET very high.

All the students of the final year undergo internships in reputed industries and more than 70% of the students get one or the other job placement on campus in companies like VMware, Cognizant, Infosys, Accenture, IBM, Covance, and so on. The departments offer various competency and skill development courses to prepare the students for the job market in addition to Industry Institute

Integrated Learning Programs (IIILP) with CISCO, AWS, Salesforce, Google Cloud, ARM, UiPath, Microsoft, Texas Instrument. A significant number of Alumni are serving important positions in industry and government. A few alumni have set up their own start-ups in and around Bangalore and a considerable number have settled down overseas. The students actively participate in the intercollegiate sports activities organized by VTU and also in various intercollegiate cultural activities.

The College with a large number of classrooms, seminar halls, well-equipped laboratories, and a library with more than 50000 books is completely Wi-Fi enabled. In the laboratories, industry-standard software is made available for students to learn and practice and the college has subscribed to a large number of technical journals through a consortium approach.

The college encourages faculty members to attend seminars, conferences organized by other Colleges and Industries. Also, faculty have been given the freedom to organize seminars, conferences, and faculty development programs annually. Every year at least 5-6 seminars/conferences/FDP is being conducted. A number of seminar halls are available within the college for organizing seminars and conferences. The College has entered into MoU with a number of Industries and foreign Universities.

Since the College is located on a multi-college campus, students have opportunities to interact with students of medical, pharmacy, nursing, management, commerce and science. Students have transport, hostel and sports facilities. There are more than 15 student clubs for students to participate in various activities.

The College has set an ambitious vision and it's working continuously to adapt newer concepts in teaching, learning, and student assessments to realize its vision through working on its mission. The College aims to increase the students' satisfaction level with a holistic approach to education.

Vision and Mission

Vision

The East Point College of Engineering and Technology aspires to be a globally acclaimed institution, recognized for excellence in engineering education, applied research, and nurturing students for holistic development

Mission

M1: To create Engineering graduates through quality education and to nurture innovation, creativity and excellence in teaching, learning and research.

M2: To serve the technical, scientific, economic and societal developmental needs of our communities.

M3: To induce integrity, teamwork, critical thinking, personality development, and ethics in students and to lay the foundation for lifelong learning

PRELUDE

East Point College of Engineering Technology is organizing its annual students' projects exhibition-**"Vibrations-2K23"**, on 9th May 2023 at the college premises. During the exhibition, around 100 students' projects will be exhibited. Each project is conceived and developed by a group of students consisting of 3-4 members. The projects are in the areas of Computer Science and Engineering, Information Science and Engineering, Electronics and Communication Engineering, Mechanical and Civil Engineering. However, most of the projects are multi-disciplinary in nature. Each project has a novelty, innovation and creative endeavor.

As you know, there are six learning domains. The learning domains are: Remember, understand, apply, analyze, evaluate and create. Students during their 4 years of program would have developed the understanding of various concepts in Engineering and Technology, and working on an independent group project signifies students' ability to identify a problem, develop a solution and demonstrate the solution manifesting the students' problem-solving abilities. Thus, project work phase is one of the most significant phases in engineering education.

The Book of Students Projects Abstracts provides the comprehensive summary of all the projects that are executed by our students during the academic year 2022-23.

EPCET and all its faculty express their happiness and satisfaction towards their students for this successful endeavor.

Principal, EPCET

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3	Feasibility Check on Providing Facilities for Pedestrians at Hebbal Junction
4	Experimental Investigation on Utilization of Bagasse Ash in Adobe Bricks
5	Widening Of Existing Road between Bidarahalli to Garden City College
6	Study on LULC, Rainfall, Soil moisture & Surface water quality and mapping using ARC GIS
7	A Study on Geopolymer Pavement Tiles

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Sl. No.	PROJECT TITLE
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2	Early Prediction of Parkinson's Disease Using Machine Learning
3	Prediction of Chronic Kidney Disease by Employing Machine Learning model
4	A Decentralized Voting system using Blockchain
5	Food Image Recognition and Calorie Tracking Using Deep Learning
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7	Android Malware Detection using Deep Learning Algorithms
8	Detection of Koa And Ra Severity Using Deep Learning Techniques
9	Cyberbullying and Phishing Detection on Social Media
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11	Analysis and Prediction of Ground Water level using Machine Learning Models

Sl. No.	PROJECT TITLE
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6	Comparative Analysis of Cardiovascular Disease Using Different Machine Learning Classifiers

7	Wearable Device for Child And Women Safety using IoT.
8	Voice Controlled wheeled Robotic Arm to Assist Doctor in Operation Theatre
9	Arduino Board Using Solar Power Driving Grass Cutting Machine
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11	AI and ML Based Chatbot Development for Smart Digital Marketing
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14	Power Station Monitoring Using PLC
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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

| Sl. No.	PROJECT TITLE
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2	Gesture Recognition of Deaf and Dumb to Text or Speech
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8	Landmark Recognition using Machine Learning
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4	Design and fabrication of Forklift
5	Roles of Additive Manufacturing in Rapid Tooling (Casting Process)

Department of Civil Engineering
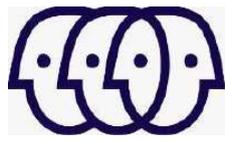
Department of Civil Engineering

The Department of Civil Engineering was established in the year 2009 offering a four-year undergraduate course leading to Bachelor's Degree in Civil Engineering affiliated to Visveswaraya Technological University, Belagavi with an intake of 60 students. The department also offers Master's program in Construction Technology since 2013, affiliated to VTU. The Department has been recognized as a VTU-Research center since 2014. The Department is well equipped with full-fledged laboratories & state of art infrastructure facilities supported by a team of extremely dedicated, well qualified and experienced faculty members. The faculty members are involved in sponsored research and consultancy works

DEPARTMENT OF CIVIL ENGINEERING

◉ VISION

- To become an outstanding department by providing quality education through imparting analytical, sustainable, and problem-solving skills in Civil Engineering to address industrial and societal requirements.

◎ MISSION

- **M1:** Make the student employable or become an entrepreneur with an emphasis on professional ethics and social commitment.

- **M2:** To enhance the student's individual and group performance through projects, Industrial visits, Internships, and software Tools.

- **M3:** To bring in research culture in the Department by active participation with industries and research scholars for technical advancement.

Karnataka State Council for Science and Technology
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KSCST

Sub : Sanction of Student Project - 46th Series: Year 2022-2023

Project Proposal Reference No. : 46S_BE_2348

Ref : Project Proposal entitled   RECYCLING OF WASTE MATERIALS SUCH AS WASTE COOKING OIL AND GROUND TIRE RUBBER FOR ASPHALT PAVEMENT CONSTRUCTION

Student(s)	Mr. SHASHIDHAR K N
	Mr. NIKIL S BOLI
	Mr. SAGAR KUMAR
	Mr. VENU N
Guide(s)	Dr. GEENA GEORGE
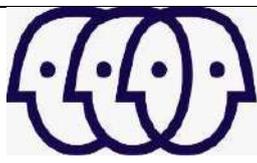
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Approved by AICET New Delhi| Affiliated to VTU,Belagavi

Virgo Nagar,Bengaluru-560049

Title of the Project: Analysis and Design of Multi-Level (G+4) Car Parking Using ETABS

Student Names: Aaditya Yadav (1EP19CV001),
Ananthu MRS (1EP19CV003),
Mohammed Juned (1EP19CV009),Kalyan kumar (1EP20CV400)

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Guide Name: Prof. RAJANI V AKKI

Aaditya Yadav

Ananthu MRS

Mohammed Juned

Kalyan Kumar

Abstract: The main aim of this paper is to prepare the structural system, Seismic Analysis and design for Multi-level car parking using ETABS software. The Multi-level car parking consists of Ground + 4 floors. Type of foundation has been decided as pile foundation with pile cap. Multilevel car parking was designed for dead loads, live loads, wind and seismic loads. RC structure is analyzed by using the ETABS 2020 Integrated building design software. The superstructure is modeled by frame elements elements as appropriate. Beams and columns are modeled as frame elements, conventional slab is considered as membrane element. The floor slab has been modelled as a diaphragm at each floor levels to resist the lateral forces. Seismic zones are considered in the analysis, and behaviour is evaluated using moment resisting frame with a response reduction factor of 1.15. Loads and its combinations are considered for design as per codal provisions IS 456:2000 and IS 800 2007. The dimensions of the beams and columns are safe in the software. Crack width and deflection of beams are within permitted limits

Project Details: This project was completed using ETABS software and in accordance with Indian Standards IS 800:2007 and IS456:2000. A factor of safety was considered as required in the code book to ensure a safe design. The methodology used in this project involved first considering a plot of 30x43.3 and planning the column layout. This layout was then imported into ETABS and modeled accordingly. Structural elements were defined as planned, and using the column layout, the spacing for cars and bikes were assumed, and required driveways, stairs, lifts are considered as standard size. The story details are G+4, with 20 cars on each floor. The ramp size and slope are given as 3.3m width and a slope of 20 degrees. After analyzing the model, the shear force diagram (SFD) and bending moment diagram (BMD) were considered, and the columns and beams were designed accordingly to ensure a safe and stable structure. By adhering to Indian standards and utilizing advanced software tools like ETABS, this project successfully designed a multi-story car parking structure that meets the required safety standards.
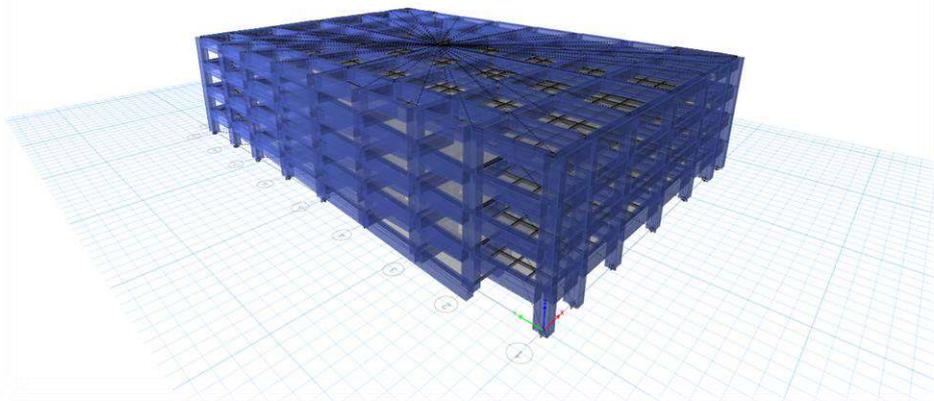
Result:
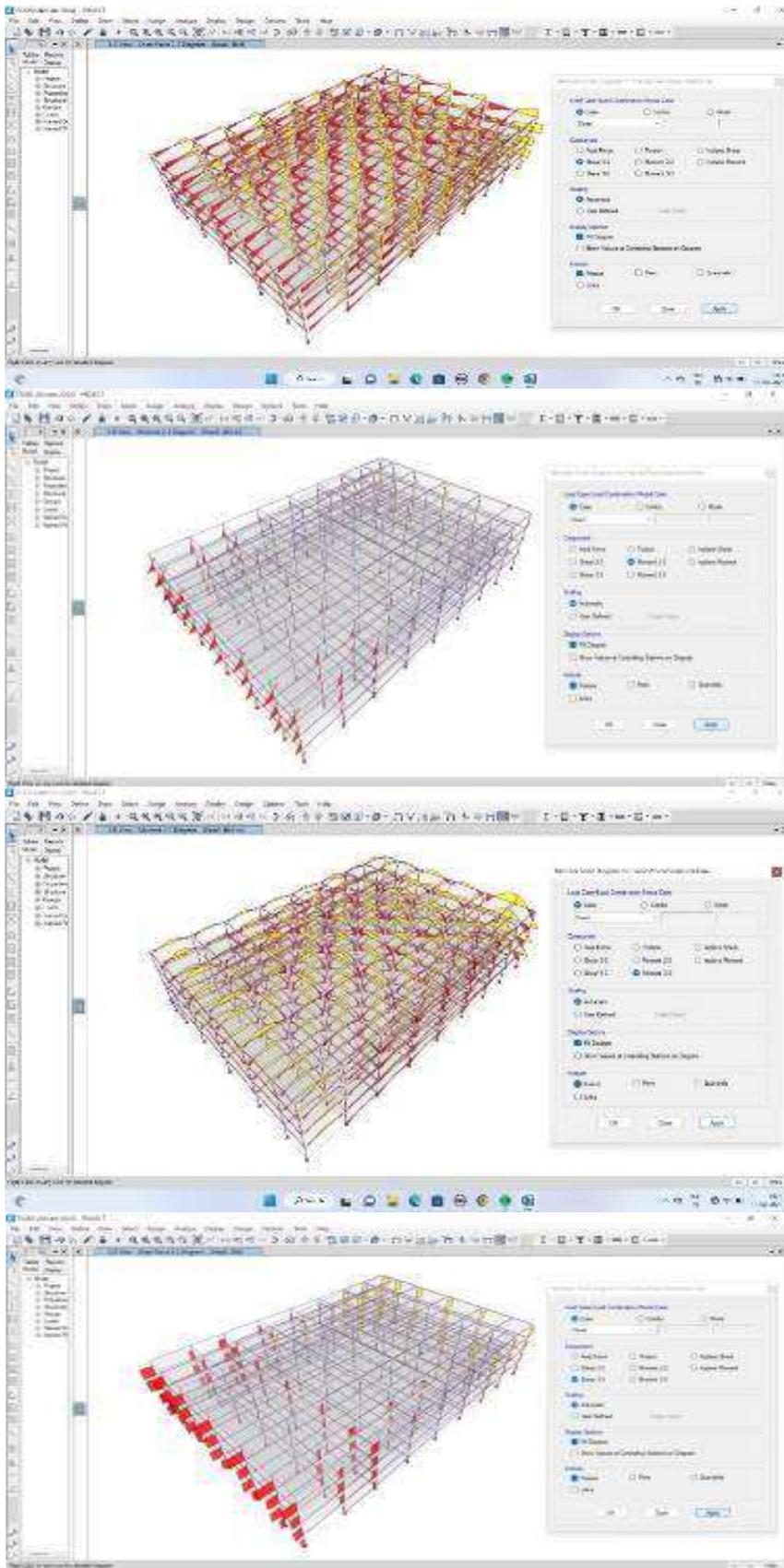
Conclusion:

a. Design and analyze a multi-story car parking structure in compliance with Indian standards using ETABS software is done.

b. Successfully modelling of a framed structure and performed a thorough analysis is done.

c. During the analysis, failing of columns and beams identified rectified them accordingly.

d. The bending moment and shear forces were determined and found to be within safe limits, we were able to ensure that the structure is safe for use.

e. Overall, the project's success highlights the importance of utilizing advanced software tools in the design and analysis of complex structures.

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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Approved by AICET New Delhi| Affiliated to VTU,Belagavi Virgo Nagar,Bengaluru-560049

Title of the Project: Recycling of Waste Materials such as waste cooking oil and ground tire rubber for Asphalt Pavement construction

Student Names: Nikil S Boli (1EP19CV013),
Sagar Kumar (1EP19CV019),
Shashidhar K N (1EP19CV020),
Venu N (1EP19CV023)

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Guide Name: Dr Geena George
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Nikil S Boli   Sagar Kumar

Shashidhar K N   Venu N

Abstract:

Waste management has become an issue of increasing concern worldwide. These products are filling landfills and reducing the amount of liv-able space. The pavement industry is one promising sector, as different sorts of waste are being recycled into asphalt concrete and bitumen. Also, Bitumen generation results in enormous amounts of carbon dioxide emission which causes hazardous environmental impact. Asphalt binders incorporating WCO have received wide attention in recent years as a response to environmental concerns and pavement sustainability. Waste Cooking oil is generally collected from restaurants, and food industries. Proper recycling of WCO in pavement can significantly relieve the burden on natural environment and public health

This study is about the employment of waste oils as the alternative binders. In this study attempt to use of some promising waste products like building demolition waste, ground tire rubber, waste cooking oil, in asphalt concrete and its strength properties
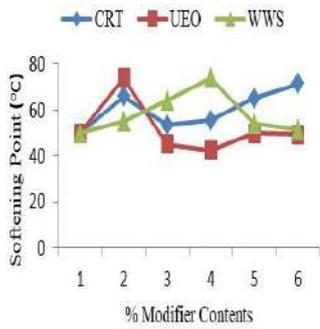
Project Details:

Recycling of Waste Materials such as waste cooking oil and ground tire rubber for Asphalt Pavement construction
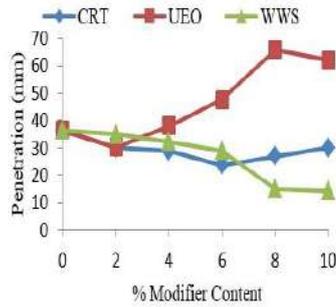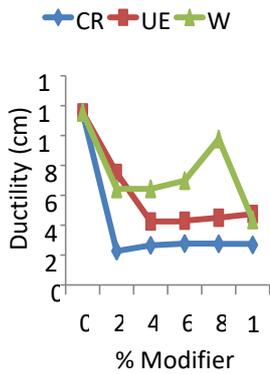

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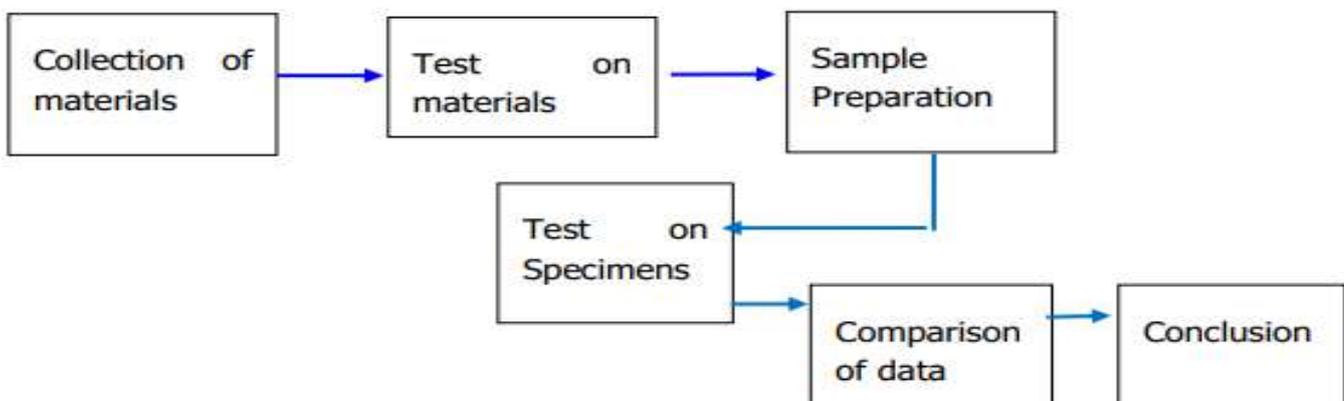
Result:

The laboratory results obtained from modification of bitumen with CRT and WCO.
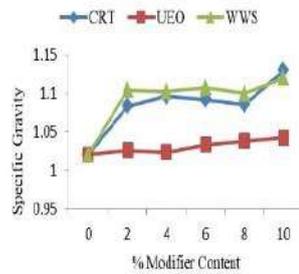

a) Softening Point of Modified Bitumen

(b) Penetration of Modified Bitumen

(c) Ductility of Modified Bitumen

lified

Conclusion:

- The physical tests carried were specific Gravity, penetration test, ductility and softening point.
- From CRT, WCO these can improve the physical properties of bitumen which in turn could affect the mechanical and volumetric properties of asphalt mixture the use of specific amounts (such as 6%) of CRT, ECO as bitumen modifier in mixtures based on traffic volume can help in reducing cost of asphaltic concrete and generate economic and environmental benefits.
- Generally, it can be inferred that from this project as sustainable development through waste recycling to produce a new material in an environment friendly manner.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Approved by AICET New Delhi| Affiliated to VTU,BelagaviVirgo Nagar,Bengaluru-560049

Title of the Project: Feasibility Check on Providing Facilities for Pedestrians at

Hebbal Junction

Student Names: **Aravind T A** (1EP19CV004),
Raghavendra Reddy V (1EP19CV020),
Deepak A (1EP18CV005)

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Guide Name: Prof.Sharath Babu Khedagi
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(+91 6366719793)

Deepak A

Aravind T A

Raghavendra Reddy V

Abstract:

This research work aims at identifying the absence of Pedestrian Facilities at the Hebbal Junction. Since it is a major junction connecting three high density traffic flow roads there is higher volume of Vehicles flowing through the junction. The preliminary survey conveys absence of any Pedestrian such as an Underpass (subway). In this work the Pedestrian count and Vehicular volume will be collected during Peak and Off-Peak hours. The analysis will be followed by a Questionnaire survey to understand mind set of Pedestrians at the Junction. The possible outcome will lead to Providing the Underpass or a better pedestrian signal Timings at the junction based on volume of Pedestrians.

Project Details: **Study area- Hebbal Junction**

Methodology:
- To conduct Pedestrians Volume Survey
- To Carry out Vehicular Volume Count
- To conduct questionnaire survey for pedstrain behaviour analysis
- To analyse the accidents at the signal.
- To analyse signal timings
- Feasibility check to provide a new Pedestrian Facility such as a Subway (Underpass)

Result:	Conclusion:

Result:
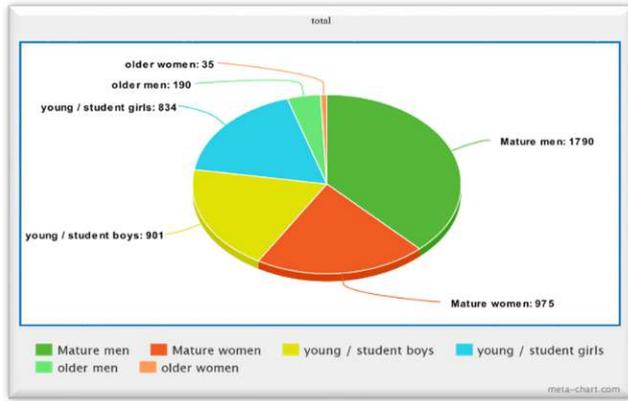
Conclusion:

➢ From the experiment investigation the average pedestrian observed per hour during working days are 770 and on non-working days are 680.

➢ The peak flow is observed during 7am to 8am in the morning hours.

➢ The study concludes that maximum flow is from temple towards park.

➢ The best possible recommendation for pedestrian safety would be an Underpass as the Vehicular Volume is more at the Junction the signal Timings are not sufficient to cater Pedestrians throughout the junction.

➢ The actual distance between temple to park is approximate 50m which can be utilised for building an underpass

➢ A recommended width and height of underpass is 4.8m and 2.75m as per the IRC guidelines 103-2012

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Approved by AICET New Delhi| Affiliated to VTU,BelagaviVirgo Nagar,Bengaluru-560049

Title of the Project : Experimental Investigation on Utilization of Bagasse Ash in Adobe Bricks

Student Names: Cepongsonla Chang (1EP19CV005),
Kavyashree V (1EP19CV007),
Alluri Shivakiran (1EP20CV400),
Sahil Mahesh Gupta (1EP20CV401)

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Guide Name: Mrs. Barnali Ghosh
Associate Professor

| Cepongsonla Chang	Kavyashree V
Alluri Shivakiran	Sahil Mahesh Gupta

Abstract: Application of bio-fuel by-product sugarcane bagasse ash as a principle raw material for the manufacturing of brick was studied. The need for locally manufactured building materials has been emphasized in many countries of the world because of their easy availability & low cost. The main objective of this study is to investigate the utilization potential of bagasse production residues in bricks. The attempt has been made for producing light weight bricks with increasing percentage of bagasse by weight. We can make bricks which are both economically viable and eco friendly which indirectly solves the problem of the material being an environmental threat. In this project, Sugarcane Bagasse ash can be utilized as a replacement of soil. With the size of (230*110*75) mm tested with different proportions of 0%, 10%, 20% and 30%. These bricks were tested in different types of brick test as per Indian standards.
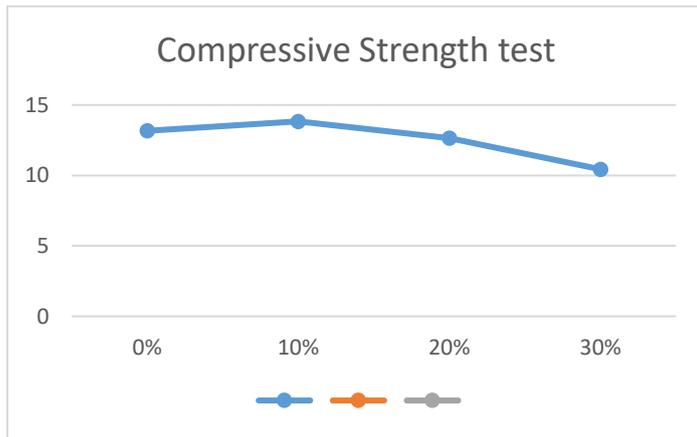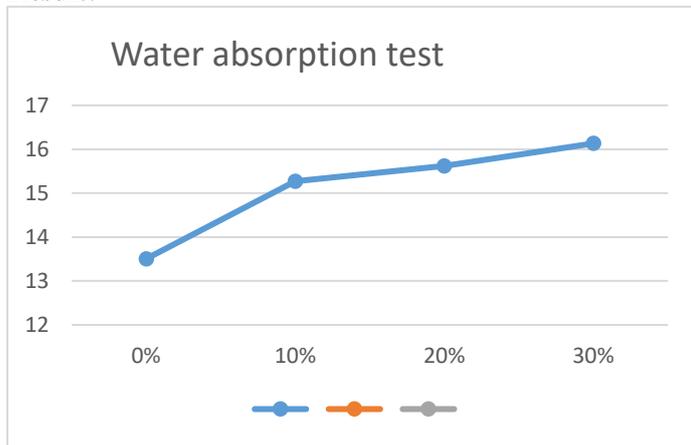
Project Details:
Objectives

- To minimize the usage of raw materials in bricks and save the raw materials for future use
- To minimize the agricultural waste and avoid environmental pollutions by using SCBA in brick.
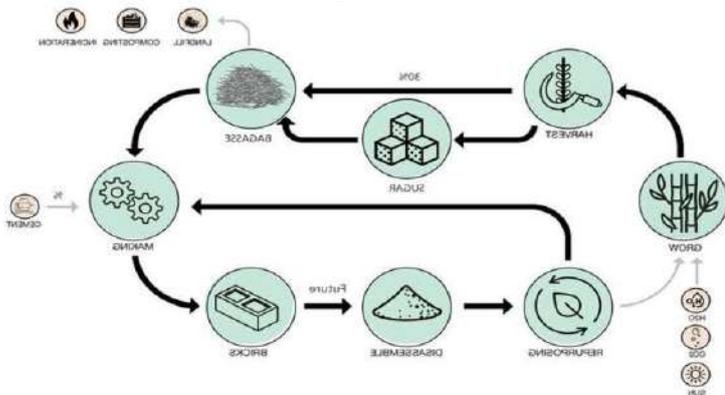
Bricks with 10%, 20% and 30% bagasse ash.

Result:

Water absorption test

Compressive Strength test

Conclusion:

1. Use of bagasse ash in brick can solve the disposal problem and produce a 'greener' Eco friendly brick for construction.
2. From the tests conducted it is observed that up to 20% bagasse ash are adequate and desirable for use in building construction.

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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Approved by AICET New Delhi| Affiliated to VTU,Belagavi, Virgo Nagar,Bengaluru-560049

Title of the Project : **Widening Of Existing Road between Bidarahalli to Garden City College**

Student Names: Pavan A R (1EP18CV022),
Rafeeq Kasab (1EP18CV025),
Krishna Murthy S (1EP19CV008),
Mohan Babu K (1EP19CV011)

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Guide Name: Prof. Sreedhar

Pavan A R | Rafeeq Kasab

Krishna Murthy s | Mohan Babu K

Abstract:

Road ways are most commonly used means of transport in our country. It plays a major role in transportation, it provides door to door transport facility. A rood widening project is usually considered when the existing road width is not adequate for the traffic, or when extra lanes are needed. Road widening can improve traffic safety and capacity. For widening of road we have conducted the road survey from Bidarahalli towards Garden City College of 3.2 Km. We should have the vehicle survey, like no of vehicles moving on the road during the considered period of time. We should conduct procure compaction test, moisture content test, california baring ratio (CBR) test.
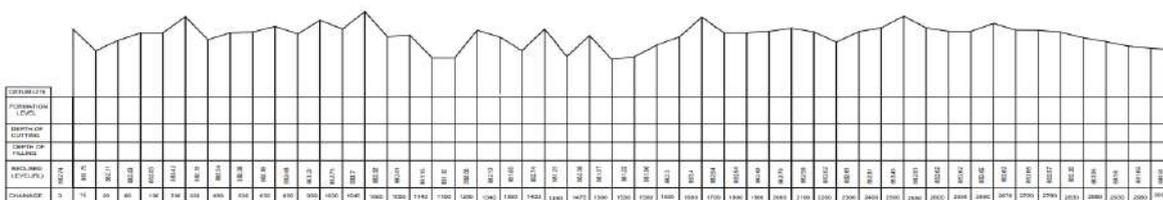
Project Details:

We have conducted CBR test from sample 1 we have proposed the thickness of the pavement as 480mm and the width of the road is 7 m for two way traffic. The components of pavement are as follows Granular Subase of 280mm, Base course of 130mm,bituminous course of 50mm, Surface course 20mm.
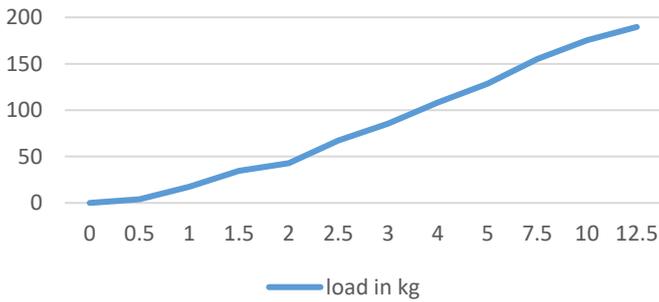
Longitudinal Section Of Highway

N

AXIS
X axis = 1:1Meter

Result:

CBR TEST GRAPH

Survey Details

	During week days (PCU)	During week End (PCU)
NO OF VEHICLE	1193.5	1364
Average OMC of three sample	12%.	

Conclusion:

- Growing populations will lead to an increase in Traffic congestion. After conducting the survey we got to know that total moment of vehicle
- The soil sample from three different places over 3.2 km was collected, in that we have tested for moisture content over three different samples the average values is 5.9%
- In procure compaction test we have conducted the test for three different samples and the average is 12% OMC.
- We have conducted CBR test from sample 1 we have proposed the thickness of the pavement as 480mm and the width of the road is 7 m for two way traffic.
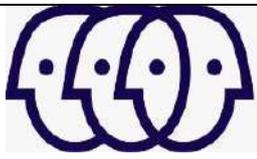
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Approved by AICET New Delhi| Affiliated to VTU, BelagaviVirgo Nagar,Bengaluru-560049

Title of the Project : Study on LULC,Rainfall,soil moisture & Surface water quality and mapping using ARC GIS

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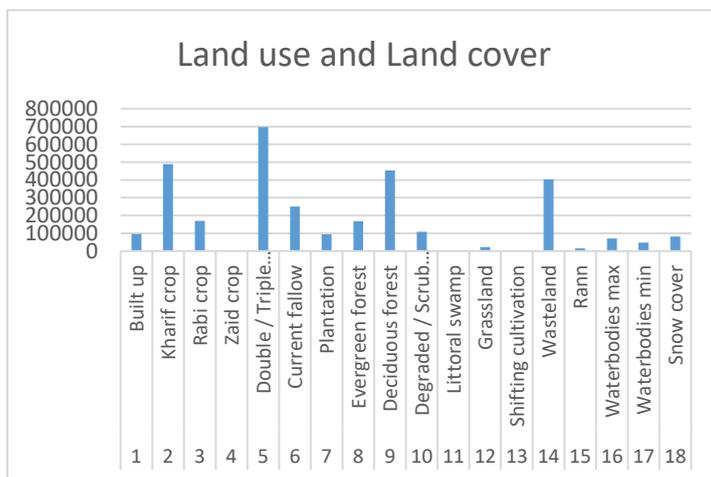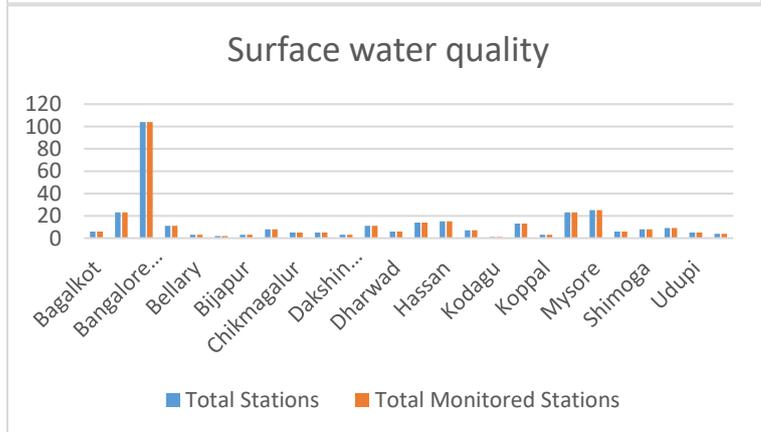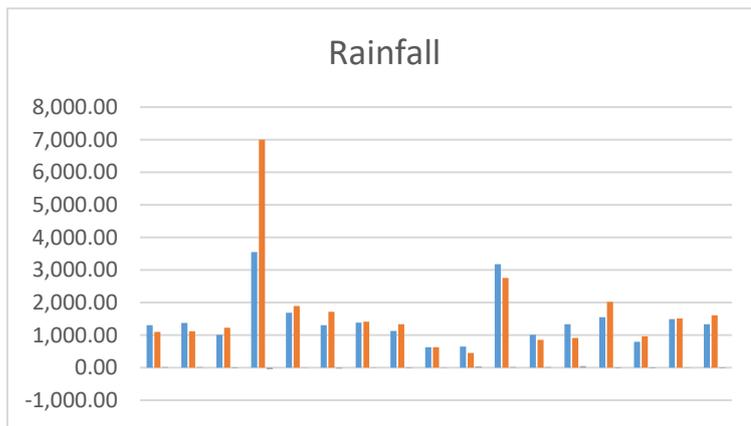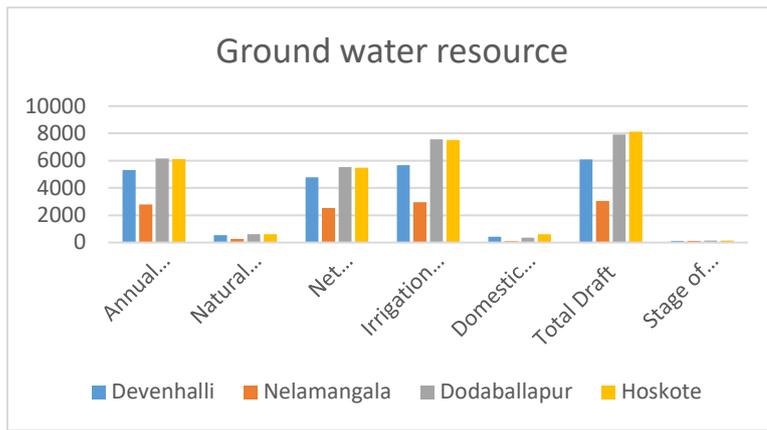Chandannaidu0@gmail.com (8884257955)

Guide Name: Prof. Shobha N V

Abstract:

Bangalore City is one of the rapidly growing city in India as well as in Asia. The Growth of the Bangalore city took its speed after 1996-97,because of Real Estate, Globalization and its polices . Bengaluru is one of the fastest growing metropolitan cities across the world, and its growth has a significant impact on neighbouring regions. Hence an attempt is made to evaluate the influence of urban sprawl on LULC in the Bengaluru rural district, which surrounds the Bengaluru urban region Due to the increasing population, urbanization and industrialization, the lakes and their drainage areas are being encroached. Bengaluru is facing the problem of flooding. Hence, the rainfall analysis is very important to understand the rainfall pattern, trend as well as its quantity. R The Physical and biological cover of the earth's surfaceincluding artificial surfaces, forests, minerals, mountains,natural areas, wetlands, water bodies constitute LandCover (LC). This study mainly aims to analyse the impact of the changes in Land Use/Land Cover (LU/LC) on Rainfall,soil moisture & Surface water quality of Bangalore rural District .

Project Details:

MAP OF BANGALORE RURAL DISTRICT

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RESULT:	Conclusion:

RESULT:

Ground water resource

(Bar chart with categories: Annual..., Natural..., Net..., Irrigation..., Domestic..., Total Draft, Stage of...; series: Devenhalli, Nelamangala, Dodaballapur, Hoskote)

Rainfall

Surface water quality

(Categories: Bagalkot, Bangalore..., Bellary, Bijapur, Chikmagalur, Dakshin..., Dharwad, Hassan, Kodagu, Koppal, Mysore, Shimoga, Udupi; series: Total Stations, Total Monitored Stations)

Land use and Land cover

(Categories: 1 Built up, 2 Kharif crop, 3 Rabi crop, 4 Zaid crop, 5 Double / Triple..., 6 Current fallow, 7 Plantation, 8 Evergreen forest, 9 Deciduous forest, 10 Degraded / Scrub..., 11 Littoral swamp, 12 Grassland, 13 Shifting cultivation, 14 Wasteland, 15 Rann, 16 Waterbodies max, 17 Waterbodies min, 18 Snow cover)

Conclusion:

- By using WRIS website we have collected the data in the form of bar graph for the following parameters such as surface water quality, ground water level, land use and land cover , ground water resources.
- The data was analysed and plotted to study the variation in the rainfall and land use land cover in rural bangalore

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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Approved by AICET New Delhi| Affiliated to VTU,Belagavi Virgo Nagar,Bengaluru-560049

Title of the Project : A Study on Geopolymer Pavement Tiles

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Guide Name: Dr Geena George
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Madhkar N

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Abstract:

Geopolymer is a new development in the world of concrete in which cement is totally replaced by pozzolanic materials like fly ash and activated by highly alkaline solutions to act as a binder in the concrete mix. For the selection of suitable ingredients of geopolymer concrete to achieve desire strength at required workability, an experimental investigation has been carried out for the gradation of geopolymer concrete and a mix design procedure is proposed on the basis of quantity Flyash, GGBS, Concentration of NaOH, Alkali activator ratio. In this study we have replaced the cement with GGBS in geopolymer concrete tiles, hence there is no usage of the cement in these tiles. The tiles were casted with the concentration of NAOH varying from 6N,8N and 10N and tested for compressive strength at 7 days and compared with the Nominal concrete tiles, the 10N and 8N tiles were almost had the 70% to 80% of the strength compared to Nominal concrete tiles. And continuing the 8N and 10N tiles will be casted with the different percentages of the Flyash and GGBS to check if there is any difference in the strength further.

Project Details:

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Result:

Compressive StrengthN/mm2

Category	Value
6N NaOH	11.2
8N NaOH	14.6
10N NaOH	15.2
Normal concrete	18.2
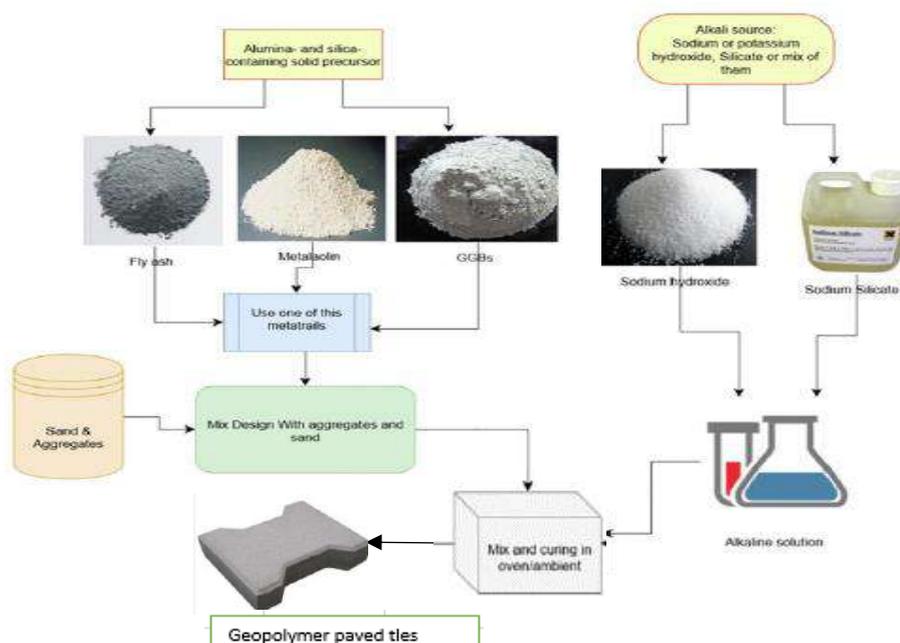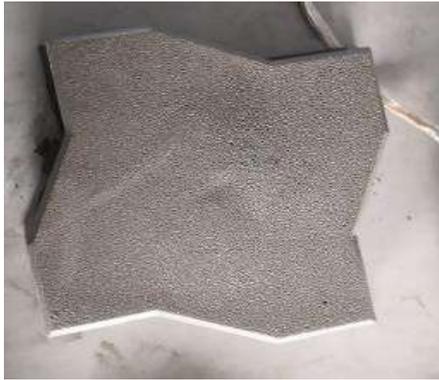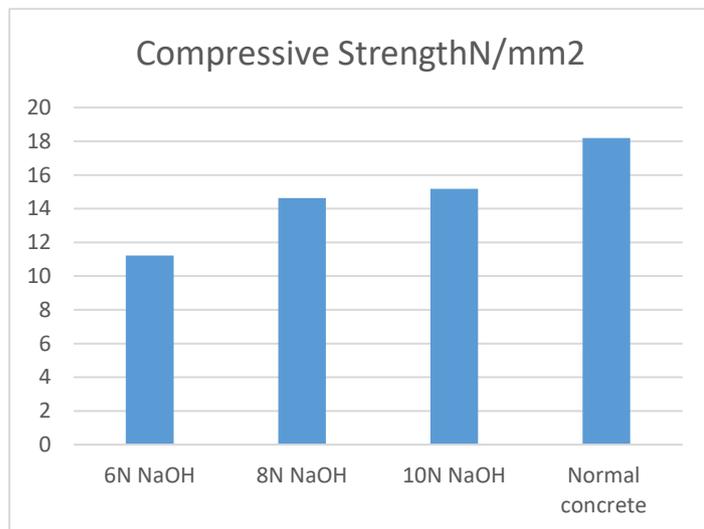
Conclusion:

The study on geopolymer concrete paver blocks is definitely the answer to the need of greener concrete for sustainable development.

Fly ash and GGBS can be used to produce geopolymeric binder phase which can bind the aggregate to form geopolymer concrete.

The effect of concentration of NaOH solution showed that as the concentration of NaOH increases and the compressive strength also increases

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Computer Science and Engineering Department was established in the year 1999 with an intake of 120 students and is affiliated to Visveswaraya Technological University (VTU), Belgavi. The Department is crafted globally competent future workforce for IT industry and also makes students ready for further education and seeks research opportunities in reputed industry and academia. These twofold objectives are accomplished by optimal mix of fundamental subjects, lab session and online courses from NPTEL & Industry Integrated learning programs. The students will build specialist knowledge in different emerging technologies with the flexibility to follow their interest through the choice of Industry Integrated Learning Programs and get certified from companies through proctored exams. Staff and students of the Department are actively involved in various research activities. These research activities have been successful in attracting funding from university.

Vision

The department aspires to be a centre of excellence in Computer Science & Engineering to develop competent professionals through holistic development.

Mission

M1: To create successful Computer Science Engineering graduates through effective pedagogies, the latest tools and technologies, and excellence in teaching and learning.

M2: To augment experiential learning skills to serve technical, scientific, economic and social developmental needs.

M3: To instil integrity, critical thinking, personality development and ethics in students for a successful career in Industries, Research and Entrepreneurship.
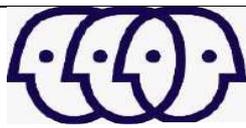
Analysis, Forecasting and Prediction of Crime Against Women Using Machine Learning Techniques

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Guide Name: Dr. Manimozhi I
Associate Professor
CSE Department, EPCET

| Namya H S	Suchanda Dutta
Tanya Singh	Tirumala Reddy

Abstract: These days, crime against women has spread to every country in the world, and many are making efforts to stop it. To decrease the rising number of occurrences of crime against women, preventative steps are done. Every year, a vast amount of data is produced based on the reporting of crimes. Crime analysis is a crucial area for the police force. Studying crime statistics can aid in the analysis of crime trends, interconnected hints, and significant hidden relationships between the crimes. Because of this, data mining may greatly aid in the analysis, visualization, and prediction of crime using crime data sets from various Indian states. The administration might develop measures to prevent crimes against women and take effective action to reduce crime with the use of crime prediction. The supervised machine learning algorithm Random Forest Algorithm, which is very well-liked and utilized for Classification and Regression problems in Machine Learning, will be employed in the project.

Project Details:

Hardware and Software requirements:

- Windows 10/11
- jupyter notebook
- Language used is Python

Architecture of Random forest classifier
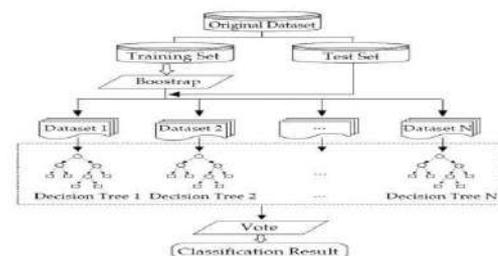
Result: Forecasted number of crimes in Uttar Pradesh for the next 7 years based on historical data

```
forecasted number of crimes are:
4991.0
4949.0
4982.0
4955.0
4977.0
4960.0
4973.0
```

Conclusion:

In this project, we evaluated the precision of classification and prediction using several datasets. Based on the Random Forest method, classification will be performed. By constructing a Crime Prediction System, it accelerates the investigation of crimes and lowers the crime rate. It will attempt to lower crime rates by foreseeing potential crimes that might take place in the coming day.
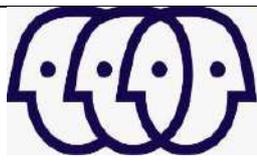
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
Virgo Nagar, Bengaluru-560049

Early Prediction of Parkinson's Disease Using Machine Learning

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Bincy B   Deeksha S

Disha J   Hima Bindhu S

Abstract: Parkinson's disease is a neurological condition that affects nerve cells in the brain, causing symptoms like tremors, poor posture, and poor balance. The study aims to classify individuals as healthy or having Parkinson's disease by analyzing their spiral and wave drawings. The proposed method achieved 91% classification accuracy using feature engineering and a CNN classifier. Digitized spiral drawings were found to significantly impact the classification of PD patients and healthy controls, which could support future differential diagnosis of PD. Machine learning algorithms in medical diagnosis are highly applicable and convenient, potentially saving time and money.

Project Details: The system architecture for early prediction of Parkinson's disease using spiral and wave drawings would likely involve a machine learning model trained on a dataset of labelled spiral and wave drawings, incorporated into a mobile or web-based application to enable users to input their data and obtain prediction results.
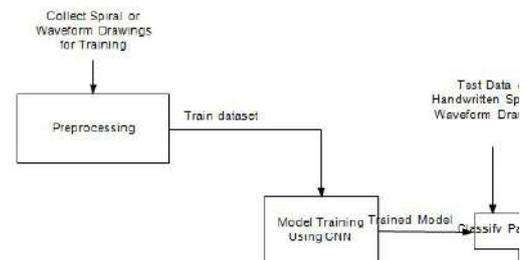
Result:
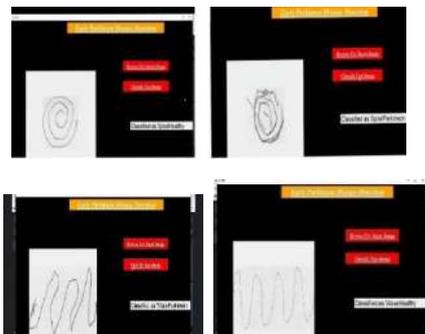
Conclusion:

The Project provides a brief overview of Parkinson's disease and its causes, along with the use of Spiral Drawing as a preliminary test for Parkinson's disease detection. The project aims at optimizing the model to limit the number of parameters under 250k for easy deployment on edge devices. The implementation provides a solution for Parkinson's disease detection using CNN to be deployed to an edge device or less computation efficient devices. Thus, effectively bringing AI out on edge—in actual and physical real-world use cases.
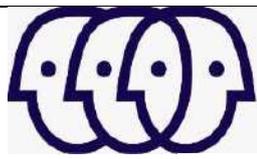
19

Prediction of Chronic Kidney Disease by Employing Machine Learning Model

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Guide Name: Dr. Manimozhi I
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Dept. of CSE, EPCET

P Baba Adil Sha

Pavan Kumar N

Pradeep Kumar G

Yathish Kumar B C

Abstract: Everyone is aware that the kidneys are a vital organ in the body, with primary functions like excretion and osmoregulation. Simply explained, the kidney and excretion system gather and eliminate all harmful and superfluous substances from the body. Chronic Kidney Disease is brought on by a kidney issue. Chronic kidney disease (CKD) is a non-communicable illness that affects 10-15% of the world's population and has a considerable impact on morbidity, mortality, and hospital admission rates for patients worldwide. To reduce the effects of the patient's health difficulties, early and accurate detection of the phases of CKD is thought to be essential. The Logic regression produced best accuracy(93%) and performance due to large number of neurons and hidden layers. Early prediction is very crucial for experts and patients to
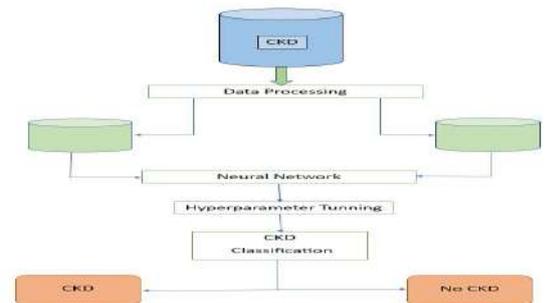
Project Details:
Hardware Requirements:
   • Processor: Pentium i5 Processor
   • Hard Disk: 500 GB
   • RAM: 4 GB
Software Requirements:
   • Language: Python 3.8
   • Web Frame work: Flask
   • Operating system: Windows 10

prevent slow down the progress.

Result and Conclusion: In conclusion, the proposed system for predicting chronic kidney disease (CKD) using Artificial Neural Network (ANN) is an effective and reliable solution for healthcare professionals and patients. The system leverages the power of machine learning algorithms to achieve higher accuracy in CKD prediction compared to existing systems, such as K-Nearest Neighbors (KNN) and Extra Tree Classifier (ETC). The proposed system offers several advantages, including improved accuracy, efficiency, flexibility, reduced errors, and improved healthcare outcomes. By enabling early detection and intervention of CKD, the proposed system has the potential to improve the quality of life for patients and reduce healthcare costs. The work can be extended using unsupervised and mobile based system that enables the experts to follow the status of the patients and help the patients to use the system to know their status.
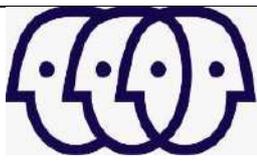
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
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A Decentralized Voting System using Blockchain

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Professor,
Department of CSE, EPCET

Abith Sam Cherian

Brinda A

Syeda Amtul Fizza

Varun A R

Abstract: E-voting or Electronic voting symbolizes modern democracy. E-voting will be at its best when complied with the existing legal and regulatory framework. "Vote", the word means to determine or to elect or select from a list or who will run the country or the organization or a group. To find leaders selected by people is the prime aim of voting (Scenario: Citizens electing their country leaders). Most countries, India is no exception, have trouble voting. Some of the issues at stake are incorrect voting during elections, inexperienced personnel, inaccessible or insecure polling stations, and inadequate voting equipment. The new indigenous flagship internet-based voting system solves this exact problem. It should be noted that users, in this case, citizens, have a large time frame during the voting period with the system running. The objective of this paper is to come up with a new solution, does come with a small learning curve, citizens will have to be trained on how to exercise their right to vote online.

Project Details: Blockchain platform to host the distributed ledger and ensure the integrity of the voting process. Voting application to allow voters to cast their votes and view the results. Smart contract software to automate the voting process and enforce the rules of the election. Voter authentication software to ensure that only eligible voters can participate in the voting process. Encryption software to secure the data and protect the privacy of voters.

Voting system architecture
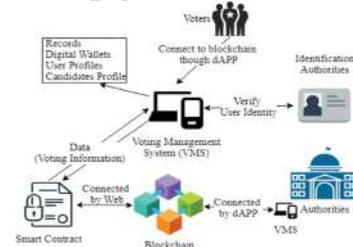
Result:

Conclusion: The purpose of proposing a blockchain-based solution for the voting system was to build trust between government and voters to make-believe that their voting integrity is kept safe. The blockchain-based voting is also make the voting process transparent and trustworthy. The amount of money spent on voting activity in any country is very high for the traditional voting system, whereas the proposed solution for using the make the voting process cheaper, faster and trustworthy.
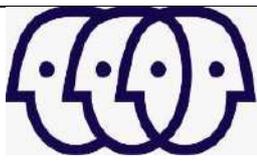
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
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Image Recognition and Calorie Tracking Using Deep Learning

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Guide Name: Mr. Nithyananda C R
Associate Professor
Department of CSE, EPCET

Alan Thomas Abraham	Amit Reny
Bhavya S	Shabana A G

Abstract: The proposed project involves using deep learning to identify food and track calorie intake from images, with a React Native frontend and deep learning backend. The system will be designed to allow users to take photos of their meals using their mobile device, and the backend will use deep learning techniques to recognize the food items and estimate their calorie content. The frontend will display the estimated calorie intake, along with other information such as nutritional information and dietary recommendations. The system will be trained on a large dataset of food images using deep learning techniques such as convolutional neural networks (CNNs) and will be optimized for accuracy and speed to provide real-time feedback to the user. The project aims to provide users with an effective and convenient tool for monitoring their food intake and maintaining a healthy diet.
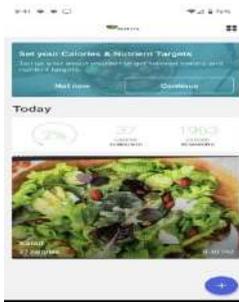
Project Details: A convolutional neural network (CNN) model that has been trained on a large dataset of food images to identify different types of food and estimate their calorie content.

Image processing: The app preprocesses the images captured by the device camera by resizing, normalizing, and cropping them to improve the accuracy of the deep learning model.

Calorie estimation: Once the deep learning model has identified the food items in the image, it estimates their calorie content based on pre-existing calorie data associated with each food type.

User interface: The Android application provides a user-friendly interface that allows the user to capture images, view the identified food items, and track their calorie intake.

Result:

Model accuracy: 70.7%

Conclusion: This project successfully demonstrated the capability of deep learning models to accurately identify food items and track their calorie content. By using a combination of convolutional neural networks and recurrent neural networks, the model was able to achieve a high level of accuracy in food recognition. The integration of the model into a React Native Android application made it accessible to a wide range of users, providing them with a convenient and efficient tool for managing their diet and nutrition. This project has the potential to make a significant impact on the way people monitor their food intake and make healthier eating choices. With further development and refinement, this technology could play a vital role in promoting healthy eating habits and preventing diet-related diseases.
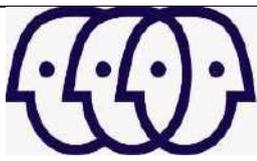
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering
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Virgo Nagar, Bengaluru-560049

Smart Traffic Signal Management for Detection of Emergency Vehicles Using IOT

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Abstract: Traffic is one of the indispensable problems of modern societies, which leads to undesirable consequences such as difficulty for emergency vehicles to reach location, time wasting, greater possibility of accidents. Smart traffic signal management systems using Internet of Things (IoT) can significantly improve traffic flow and reduce congestion on roads.Our project proposes a novel approach for detecting emergency vehicles and managing traffic signals accordingly. IoT approaches are used to control traffic lights more efficiently, sensors such as surveillance cameras are used to capture real-time traffic information for the smart traffic signal management system. The system is designed to ensure that emergency vehicles have a clear path and minimal delays in reaching their destination.

Project Details: The system architecture of the Smart Traffic Signal Management. This begins with the analysing of the image and then the image is implemented in the YOLO and the object is present in the grid. It detects whether the image is emergency vehicle. If it is an emergency vehicle the signal changes or else the signal change will be as usual.
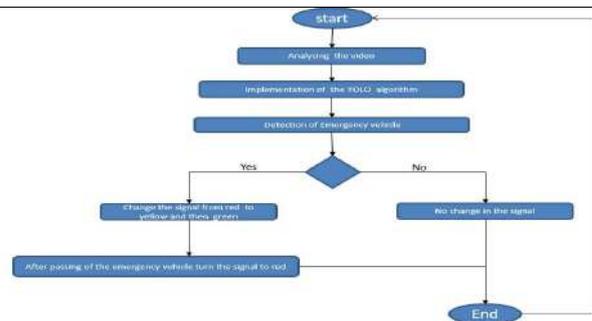
Result:
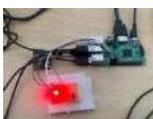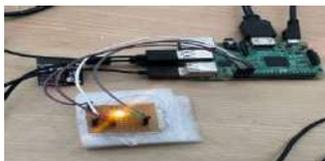
Conclusion: Recognizing Emergency vehicles and making way for them to travel swiftly, nd smoothly was more pronounced in importance with the higher number of vehicles in peak hours. is The project analyzes the techniques and technologies employed in smart traffic signal management to decrease traffic congestion and identify emergency vehicles.
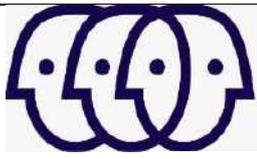
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Android Malware Detection using Deep Learning Algorithms

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| Kavya .B.M | Manasa.G.R |
| Sneha.N | Smitha.S |

Abstract: Malware has become a serious threat to Android devices due to the increasing popularity of these devices. In this paper, we propose a novel method for Android malware detection using genetic algorithm-based optimized feature selection and deep learning. Our approach aims to select the most relevant features for detecting Android malware using genetic algorithm-based optimization. The selected features are then used to train a deep-learning model for accurate malware detection. We evaluate the performance of our proposed method using a dataset of Android malware and benign apps. The results show that our approach achieves high accuracy in detecting Android malware, outperforming existing methods.

Project Details: The project "Android Malware Detection Using Genetic Algorithm-based Optimized Feature Selection and Deep Learning" aims to develop a system for detecting malware in Android applications. The project utilizes a genetic algorithm to optimize feature selection, enhancing the accuracy of malware detection. Deep learning techniques are applied to analyze the selected features and classify applications as either benign or malicious. The project focuses on improving the effectiveness and efficiency of Android malware detection using a combination of genetic algorithms and deeplearning (CNN and LSTM).

Result:
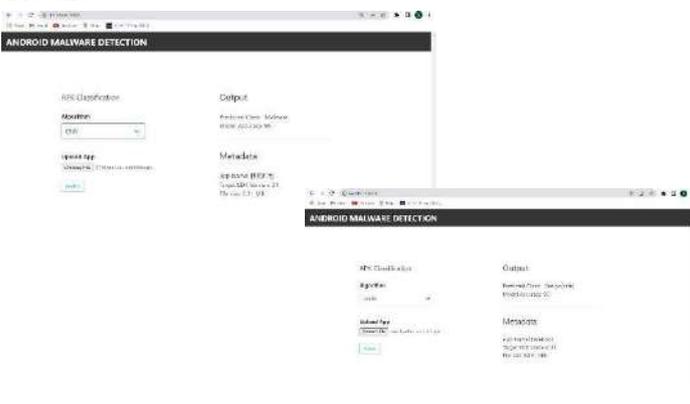
Conclusion: In this project, we developed an Android malware detection system using a combination of genetic algorithm-based feature selection and deep learning techniques. Through the genetic algorithm, we optimized the selection of features to enhance the accuracy of malware detection. The deep learning model, specifically a convolutional neural network (CNN), was trained on the selected features to classify apps as either malware or benign. The results showed that our approach achieved high accuracy in detecting Android malware, demonstrating the effectiveness of combining genetic algorithms and deep learning for malware detection.
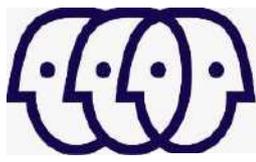
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Detection of Koa And Ra Severity Using Deep Learning Techniques

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Pavithra C   Priya Palleda

Rachana M   Sindhurama A R

Abstract: Both Knee osteoarthritis (KOA) and Rheumatoid Arthritis(RA) are common conditions that can cause joint pain and functional limitations in adults. While KOA primarily affects the elderly population, RA can affect people of all ages. This model utilized gait features and radiographic image features extracted from a deep learning network and achieved high accuracy in multi-class KOA classification. Similarly, for RA various imaging modalities such as ultrasound and magnetic resonance imaging(MRI) have been utilized to develop diagnostic models. Our model shows an tangible accuracy compared to the previous model.

Project Details: Detection of KOA and RA severity using Keras and Tensorflow python libraries at the backend. TJinter in the frontend. CNN model of three algorithms namely MobileNetV2,InceptionV3 and Resnet50 with a image processing accuracy of 93.92%.
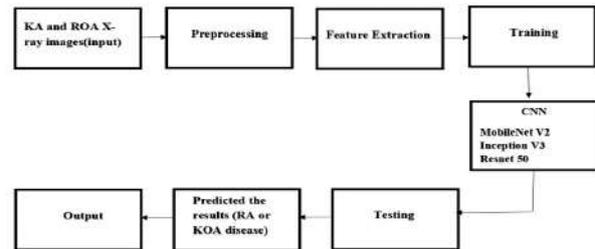
Result:
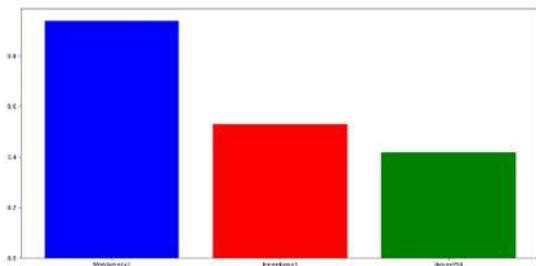
Conclusion: The outcomes of this experiment illustrate how well pre-trained models for image processing and machine learning techniques can detect osteoarthritis and rheumatoid arthritis in X-ray pictures. The project tested the effectiveness of three well-known CNN models—MobileNetV2, InceptionV3, and ResNet50—in identifying the presence of arthritis in X-ray pictures. Machine learning methods were used to determine the models' accuracy ratings, and the results were displayed graphically.
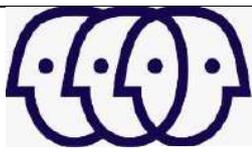
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Cyberbullying and Phishing Detection On Social Media

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Sunny Kumar Sharma	Vishnu Vardhan M S

Abstract: Cybersecurity threats are on the rise due to the increasing use of technology. To detect phishing websites, visual similarities based techniques are used to compare suspicious websites to their legitimate counterparts. Cyber-bullying is a form of bullying through electronic messages that has emerged with the exponential increase of social media users. Emails can contain sensitive and confidential information, making them valuable to cyber criminals. Phishing attacks are a common strategy used to obtain sensitive information from people by pretending to be from recognized sources. Machine learning algorithms have been utilized to classify emails as phished or ham, achieving high accuracy rates with classifiers such as SVM and Random Forest. Effective machine learning approaches are crucial to combat various cybersecurity threats and protect individuals and organizations.

Project Details:
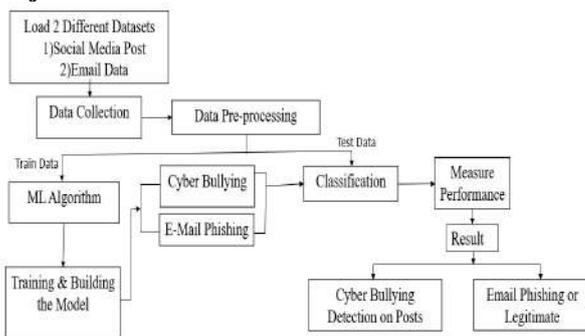
Result:
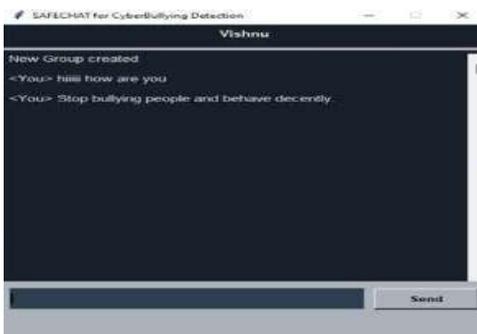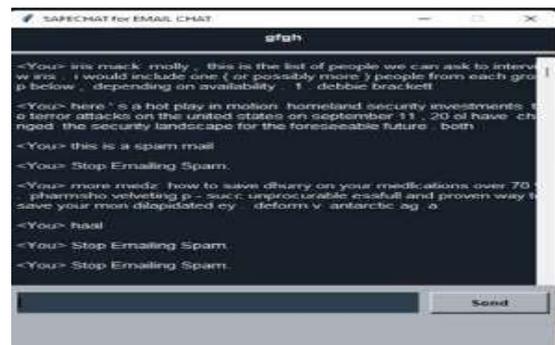
Conclusion: Phishing preys on people and businesses by using phone emails or other resources to get sensitive information, whereas cyberbullying entails bullying through electronic messages. The use of machine learning techniques is suggested as a way to identify and stop these crimes, highlighting the significance of ongoing study and instruction. Phishing and cyberbullying have been used in two different ways so far. This is an effort to create a platform that can address these two issues. Linear SVC performed better than the other algorithms in terms of accuracy (94.7%), precious (96%) and remember (96%) as well as F1 Score (96%). With the help of this model, cyberbullying and phishing assaults are immediately detected and stopped.
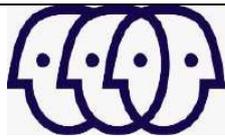
Catching of Illegal Fishing with Machine Learning

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Mahir khan

Harini R

Nithin Gowda M

Jaivardhan Reddy

Abstract: Globally, illicit fishing is posing a serious financial challenge to the fishing industry. We are eradicating numerous fish populations through this unlawful fishing. This article suggests utilizing machine learning and data analytics to combat illicit fishing. In previously published papers, data manipulation was employed in illegal fishing studies to postpone the capture of illegal vessels, and in that system, the data input is manual. We suggest using data analytics in our article to locate these boats. The Global Fishing Watch (GFW) allows us to collect the primary data, which we then analyse to identify the vessels that are being utilized for either legitimate or illicit fishing. We can locate AIS position data for the vessel based on the sensors linked to it, type of the vessel, and speed of the vessel. By our model, we can predict illegal fishing and can take necessary actions against the illegal fishing boats.

Project Details:

This project is built based on the regression model to identify the vessel's behavior and determines if a vessel is fishing or not.
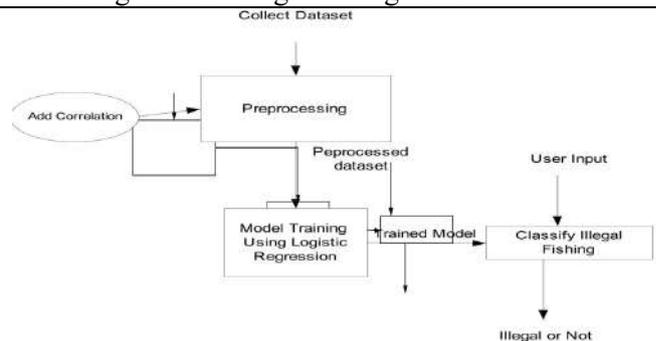
Result :

Conclusion: Using SAR satellite technology, we can continuously track a location's location and record every detail. As the system detects the region where the illegal fishing is being done, the law enforcement team does not need to visit every major harbor for investigation and they can easily catch the illegal fishers within a less time using this system. Thereby it reduces their time of investigation and they do not need to waste their as in the manual process.
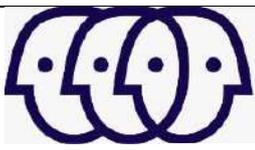
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

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Virgo Nagar, Bengaluru-560049

Analysis and Prediction of Ground Water level using Machine Learning Models

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Narreddy Bharath Kumar Reddy

Manoj R

Niranjan N

Pavan Kumar R

Abstract: The groundwater is one of the biggest assets of earth. The population growth and emerging climate change lead to water scarcity problem. This would have increased the demand for ground water. But the groundwater is not distributed equally. In our proposed system we state the annual ground water availability for future use. It can be classified by machine learning algorithms such as logistic regression, random forest and decision tree. The input variables used for modelling is based on the recharge of water and usage of water in various season. The regression task needs less training data set and can achieve good performance. The aim of this project is to compare and analyse the machine learning algorithm for ground water level along with their accuracy. The machine learning algorithm is used to classify and detect the ground water availability levels in India.

Project Details:

SOFTWARE REQUIREMENTS:
OS   : Windows 10
Language : Python
IDE   : Anaconda navigator

HARDWARE REQUIREMENTS:
Processor : i5
Hard disk : 500 GB
RAM   : 8 GB
Hard disk : 500 GB

System Architecture

Result:
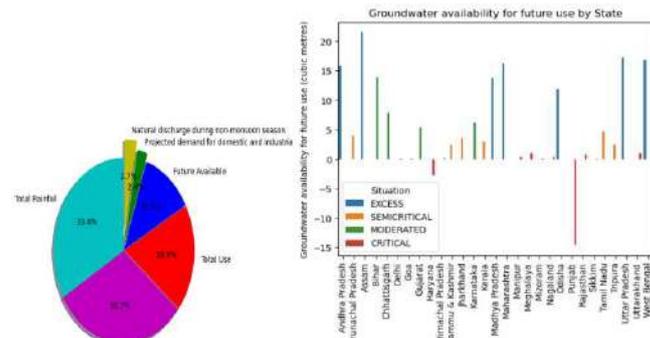
Conclusion:
In this proposed system we are implementing machine learning models to predict the ground water level for future use. So accurate groundwater level prediction can help mankind to better understand and manage our water resources for the benefit of all. We are expecting more than 90% accuracy.
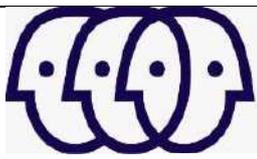
DDOS Attack Detection in Networks Using LSTM And Bi-LSTM Approach

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Rakshitha S   Rukshitha Gowda KB

Smitha Manjunath Naik   Suhana

Abstract: As the world is becoming increasingly digitized, the need for protective measures against the attacks becomes more and more efficient. Distributed Denial of Service (DDoS) is one of the attack that is turned into serious threat to the Internet. The automatic detection of DDoS attack packets is one of the key defence tactics. In this paper, we propose DeepLSTM Defense and DeepBiLSTM Defense models using LSTM and Bi-LSTM approach for detecting DDoS attacks based on deep learning. Deep learning approaches enable the automatic separation of high-level features from the low level features, producing effective representation and interface. We create a recurrent deep neural network to recognize the patterns in sequences of network traffic and monitor network assault activities. Experimental results demonstrate better performance of DeepBiLSTMDefense model compared with DeepLSTMDefense model and other conventional machine learning approaches.

Project Details: DeepLSTMDefense is a deep learning architecture that scans network traffic for DDoS threats using LSTM technique. It is trained using the CICDDoS2019 dataset, which has been preprocessed to eliminate out irrelevant information, classify data as DDoS attack traffic or regular traffic, and scale the data using a conventional scalar technique. The preprocessed dataset is then used to train the model using LSTM.This enables it to distinguish between normal and abnormal incoming network data, allowing it to detect DDoS attacks in real-time.
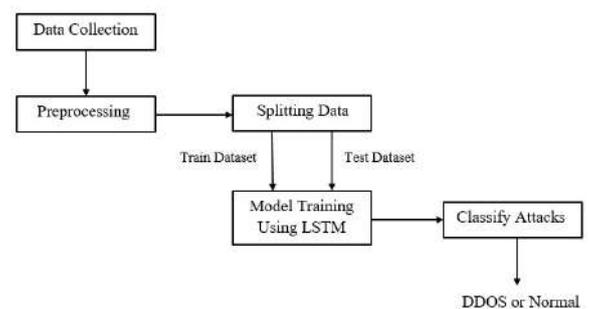
Result: LSTM Approach
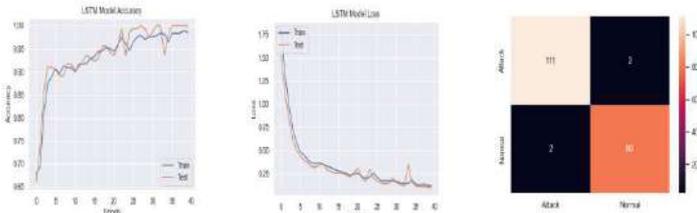
Conclusion: The research suggests DeepLSTMDefense and DeepBiLSTMDefense, two DDoS assault detection methods that leverage RNN, completely connected layers, and structure DDoS detection as a sequence classification problem. The experimental results demonstrate that models have lower error rates than traditional machine learning techniques.
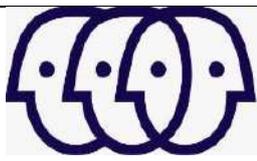
Fake Logo Detection using Machine Learning

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Ganashree K R	Gautham R
Harisha N	Rayapati Bharath Chandra

Abstract: When logos are increasingly created, logo detection has gradually become a research hotspot across many domains and tasks. Recent advances in this area are dominated by deep learning-based solutions, where many datasets, learning strategies, network architectures, etc. have been employed. The focus of this project is to detect the product logo and consider the likeness of the sample product logo. Building the detector's product logo detector, we used the image detection process with a darknet framework and YOLO algorithm. Through this process, the logo of the copyright products is being set as sample product data for having a dataset.

Project Details: OpenCV image classification by DNN module is used in Python language to read our dataset and work in Windows OS platform, to create a Graphical User Interface (GUI) simply including the creating a function to support the various application. The YOLO algorithm will be the main variable in this research. With this precision, we can detect the fake logo with 97% confidence scores and for the authentic logo with 99% confidence scores.

Result:

Conclusion: In this project, our custom dataset can detect the logo in the list correctly and can detect the fake logo in a high prediction score, which we have summarized the results of the experiment. So, we will have the confidence scores of each class we have trained and the average score of the authentic logo of 99.45 %, and the fake logo ran into 97.09 % confidence. So, we could set the threshold at 99 % confidence.
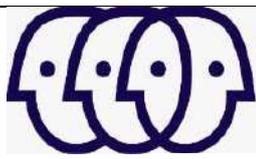
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Vehicle Detection and Collision Avoidance in Hairpin Curves

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Prince Kumar — Saad Ahmed Khan — Yashwanth A V — Farooq Sharieff

Abstract: "Vehicle Detection and Collision Avoidance System in Hairpin Curves" is a system which is used to detect the vehicles on one side of the hairpin curve and assist the vehicles on the other side of the hairpin curve using Vehicle AI Traffic Congestion and Accidents are very much common in hairpin curves due to lack of communication between the vehicles and zero visibility over the hairpin bends. Existing prototypes do offer solutions for collision avoidance, but fail ineffective traffic management which is essential in hilly areas. The purpose of this project is to intellectually detect and classify the vehicles, avoid collision using Vehicle AIs, LEDs, and effective traffic management using vehicle class information. In this project, we provide a systematic approach to the above problem statement and explain the need for effective traffic management in hairpin curves.

Project Detail:
A night vision camera captures live video feed and object detection algorithms, like YOLO or R-CNN, identify approaching vehicles. Their height is then extracted to classify them as either LMV or HMV, facilitating traffic management.
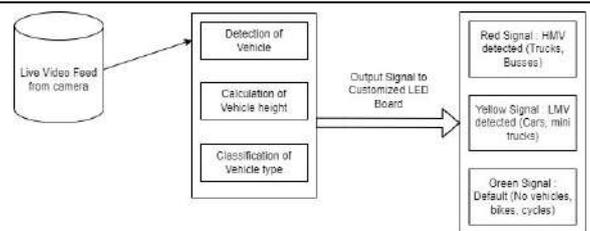
Result:
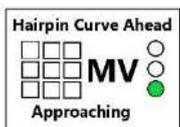
:Default state

If Light Motor Vehicle Detected:
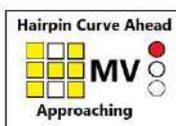
:If Heavy Motor Vehicle Detected

Conclusion: The primary objective of this project is to minimize collisions in hairpin curves to the greatest extent possible. Additionally, the system was developed to alleviate traffic congestion in hilly areas, allowing for smooth vehicle movement. The system's robust design includes advanced cameras and complex calculations that offer real-time solutions for collision avoidance and traffic management. This enables the system to handle various scenarios effectively, ensuring safety and efficiency on hilly roads. In summary, the project's goal is to enhance safety, reduce traffic congestion, and improve vehicle movement in hilly areas through the use of advanced technology.

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Implementation of an Online Virtual Trial Room Using Python and OpenCV

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Pavan Kalyan S N

Kishor Reddy Y S

Thejaswini V

Abstract: In the 21st century, clothing choices can vary based on factors such as height, gender, social status, and geographic location. While traditional in-store shopping remains the norm for many people, trying on clothes in real time can be a time-consuming process, especially when there are limited fitting rooms available. To meet this challenge, we propose to create a virtual system that allows customers to choose from a wide range of clothing designs and then see how those outfits look on virtual models. This approach can help streamline the clothing selection process by allowing customers to try on a variety of items without physically wearing them.

Project Details:

Operating system:Windows10 or 11
Coding language:Python
Frontend:HTML,CSS and Bootstraps
Software:Anaconda
IDE:Python3,7,4 IDE
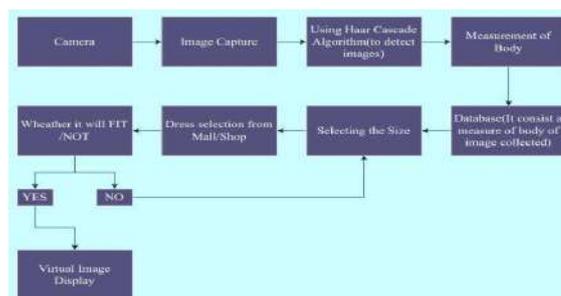
Result:

Conclusion: The increasing popularity of online shopping and the desire to make the most to fit has led to the need for an algorithm that can digitally dress people in the clothes they choose. Traditional physical fitting can be time-consuming and stressful as shoppers have limited time to try on a range of outfits. To address this issue, a virtual fitting room was proposed and mapped out to act as a rehearsal room with live video feeds and this information is the used to create an image of the clothing over the user's body, eliminating the need for physical fitting eliminated and saves time.
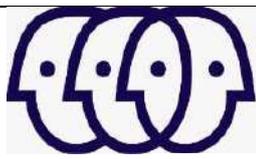
Missing Children Identification Using Face Recognition and Web Scrapping

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Abstract: Face recognition is a biometric based technology that maps individual facial features mathematically and stores the data as face print. It employs machine learning on the image and generates a feature vector which maps an object with array of numbers this technology is used by Google and Facebook to create a digital profile for users. This project purpose is to identify the missing child. The disadvantage pose is that the images are usually blurred and have less clarity. The proposed system can successfully recognize more than one face which is useful for quickly searching suspected person in very less time. It creates a unique template for each face and compares them with other images in dataset. If match is found for input face, details related to the image will be displayed. This system will decrease the crimes and ensure security to society.

Project Details: The operating system is Windows7 and software tools used is open CV python and the coding language is python and image processing tool box.
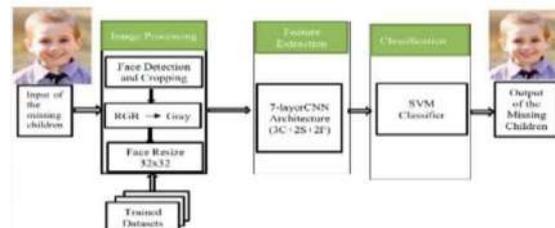
Result: Face Recognition, Comparing the detected face to the database, Identifying the face.
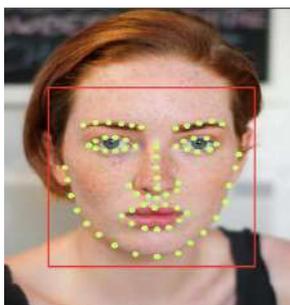
Conclusion: In this project, we proposed a novel methodology for age invariant face recognition using Convolutional Neural Network named. Experimentation has been performed imagedatasets. In this approach, our goal is to provide a simple network by using less number of layers, small image size(32x32) for processing. This system consist simplicity as no separate algorithm is required for feature extraction. The results have demonstrated that it is better than current state of-the-arts in Rank-1 recognition on both the datasets. Moreover, no complicated pre-processing steps are used for head pose correction. Resized images of size 32x32 pixels show better results as compared to images of size 64x64 pixels on both datasets. CNN as a final classification stage, shows significant improvement in the performance.
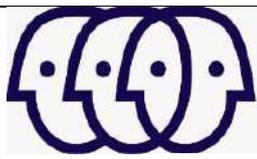
Virtual Mouse and Keyboard for Computer Interaction by Hand Gestures Using Machine Learning

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Sucharita Mahanta

Abstract: Presents a virtual mouse and keyboard system that utilizes hand gestures for input. The system employs a camera to detect hand gestures and map them to the corresponding mouse and keyboard actions. The proposed system offers a natural and intuitive means of computer interaction, especially for individuals with physical disabilities. The system's accuracy and efficiency were evaluated with different hand gestures, indicating its potential to enhance accessibility and user experience.

Project Details:

Implementation:

Mouse operation and implementations: cursor, select, right click, left click, double click,

Keyboard operation and implementation: select and click number keys, character keys, alphabets keys, backspace key, space key, enter key.

Result:

Keyboard action   **Mouse action**

Conclusion: The main objective of the virtual mouse system is to control the mouse cursor functions by using hand gestures instead of using a physical mouse and the virtual keyboard is controlled by a tracking object. The proposed system can be achieved by using a webcam or a built-in camera which detects the hand gestures, processes frames to perform the particular mouse functions and detects objects and performs keyboard and mouse functions accordingly, then displays them to the screen.
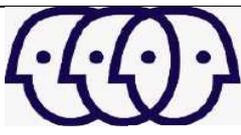
Recognition of Deterioration in Fruits using Machine Learning

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Abstract: Life cannot exist without food. Food is essential for healthy life. However, the food that we eat today lacks any nutritional value. Numerous preservatives are added to the fruit, which reduces its nutritional content, in order to lengthen its shelf life, improve its texture, and improve its quality. Adulteration in fruits is mainly caused by a chemical named Formalin. Formalin is a colourless, aqueous solution of formaldehyde. Formalin is very dangerous for human life. In our project, we're putting an IoT model into practise that will extract the formalin content of fruits and determine if they're safe to eat or not. A wet sensor and HCHO gas sensor connected with an Arduino is used to extract the formalin content from real fruit, and an LED is used as an output to show if the fruit is safe to eat or not. Convolutional Neural Network (CNN), is being used to classify the fruits based on feature extraction. Our study uses an IoT model and supervised machine learning algorithm to assess whether the fruit is tainted and whether it is safe to consume.

Project Details: Software or framework for fruit detection using machine learning is TensorFlow, which provides tools for building and training neural networks. The system architecture typically involves input data from cameras or sensors, pre-processing and feature extraction, followed by feeding the data to a trained neural network for classification and detection. IoT is used to extract the formalin content from actual fruit using a wet sensor, an HCHO gas sensor, and an Arduino.
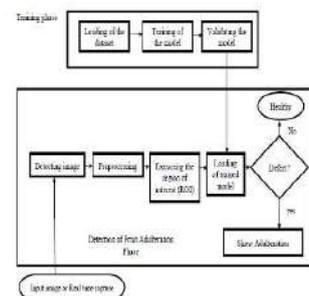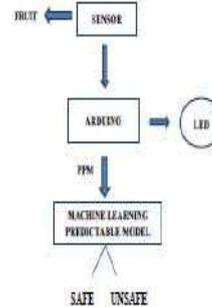
Result:
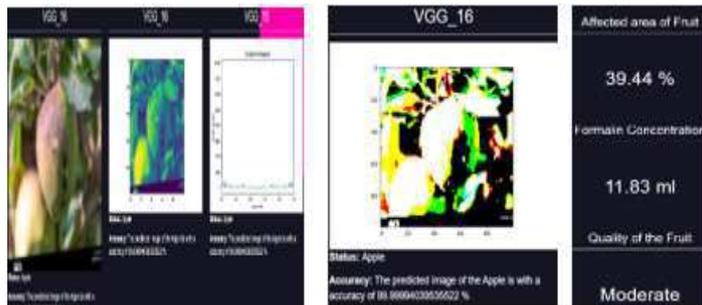
Conclusion: The use of machine learning for the detection of fruit adulteration shows great potential in improving the accuracy and efficiency of quality control in the food industry. By training machine learning models on datasets of authentic and adulterated fruit samples, these models can learn to identify patterns and features that distinguish between genuine and fraudulent products. Furthermore, the use of advanced techniques such as computer vision can enable the detection of adulterants that are difficult to identify through traditional means.
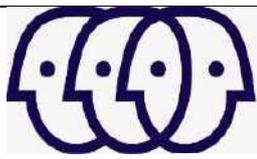
Underwater Image Dehazing Using Color Correction And Integration

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Abstract: Underwater images suffer from poor contrast, color cast, noise, and haze due to the optical properties of water. The project aims to address all of these issues by combining image enhancement and restoration techniques, specifically color cast removal, contrast enhancement, and dehazing, using Laplacian pyramid-based fusion. The method is effective for all types of underwater images, regardless of the conditions under which they were captured, such as turbidity, depth, and salinity. The results obtained using this method outperform those of state-of-the-art methods. Overall, this implementation presents a promising solution to the challenge of improving the quality of underwater images.

Project Details: MATLAB is the software used for the implementation of this method. MATLAB is numerical computing software that allows for data analysis, visualization, and algorithm development. It is widely used in academia and industry for various applications such as engineering, science, and finance. The system design for underwater image dehazing and enhancement involves processing the input image by applying histogram equalization and contrast stretching. Then apply dehazing techniques, generate two versions of the image, and fuse them to create the final output image.

Result:

Conclusion:
The developed system for underwater image dehazing and enhancement using fusion and color correction has proven to be effective in improving the visibility and quality of underwater images. By applying various image processing techniques such as color correction, fusion of images, and contrast stretching, the system was able to remove the haze and distortion caused by the scattering and absorptive properties of water and enhance the features of the image. The system has the potential to be applied in various domains, including marine research, underwater surveillance, and underwater photography.

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Detect and Assess the Cybersecurity Threats with their Mitigation Approaches Using Machine Learning Algorithms

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Amit Kumar

Bibhas Kumar Shahee

Abhishek Kumar Singh

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Abstract: The increasing use of the internet has led to a rise in cyber-attacks, which can result in data loss, data misuse, and stealing of sensitive information. Despite this, only a small percentage of global organizations claim to be adequately prepared to handle sophisticated cyber-attacks. Furthermore, a significant proportion of companies have reported experiencing one or more attacks in the last 12 months. In this context, cloud security and data privacy are critical areas that require attention. Machine learning (ML) techniques have been widely used to address cybersecurity issues. In this project, we aim to develop an ML model that can detect threats in data, such as DoS, Probe, R2L, and U2R. We will train the model using a dataset and evaluate its performance using various metrics. Our study contributes to the development of effective solutions for detecting and preventing cyber threats using ML techniques.

Project Details: The implementation utilized Python as the primary programming language and scikit-learn as the primary machine learning framework. Additionally, AWS S3 was used for cloud storage of the dataset and generated attackfiles.

Result:

Conclusion: The use of machine learning techniques such as Random Forest Algorithm in cyber security applications has shown promising results in detecting and mitigating various cyber threats. We proposed a methodology that uses a Random Forest Algorithm to detect and classify different types of attacks in a given dataset. The accuracy achieved through this methodology was found to be high, indicating that the proposed approach can be useful in real-world cyber security applications.

Implementation Of Secure Identity-Based Authentication Data Sharing Protocol For Cyber-Physical Cloud

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Aniket Vishwakarma

Avinash Undri

Dhanush M

Sanjay Mandal

Abstract: Secure and efficient file storage and sharing via authenticated physical devices remain challenging to achieve in a cyber-physical cloud environment, particularly due to the diversity of devices used to access the services and data. Thus, in this project we present a lightweight identity-based authenticated data sharing protocol to provide secure data sharing among geographically dispersed physical devices and clients. The proposed protocol is demonstrated to resist chosen-ciphertext attack (CCA) under the hardness assumption of decisional-Strong Diffie Hellman (SDH) problem.

Project Details:

The language used for coding is Java, the tool used is NetBeans IDE, and for the cloud storage we use AWS Cloud.
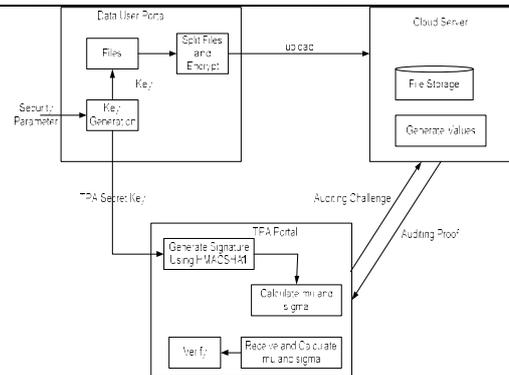
Result:
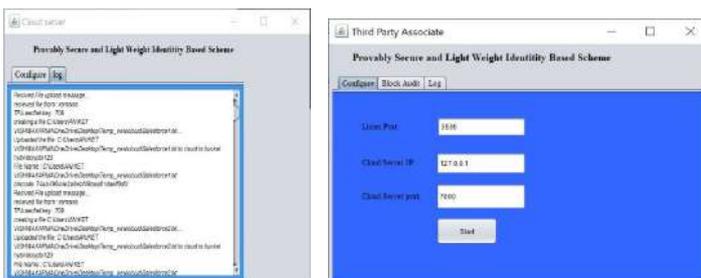
Conclusion: The Secure Identity-Based Authenticated Data Sharing Protocol is a critical aspect of Cyber-Physical Cloud security. The implementation of this protocol can help to ensure the security of sensitive data in the cloud environment. This protocol provides an efficient and secure data sharing mechanism among cloud users. It also provides access control mechanisms to ensure that only authorized users can access sensitive data. A new identity-based authenticated data sharing (IBADS) protocol is designed for cyber-physical cloud systems based on bilinear pairing in the IBADS, there are two phases.

Prediction of Cardiac Arrhythmia Using Hybrid Approach In Machine Learning

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Dhanush Kumar R

Aishuwarieya T

Dharani S

Anee Jasmi J

Abstract: Cardiac arrhythmia is a life-threatening disease which causes severe health problems in patients. A timely diagnosis of arrhythmia diseases will be useful to save the lives. An IoT platform for prediction of cardiovascular disease using an IoT-enabled ECG telemetry system acquires the ECG signal, processes the ECG signal and alerts physician for an emergency. The statistical features of raw ECG signal are calculated. The ECG signal is analyzed using Pan Tompkins QRS detection algorithm for obtaining the dynamic features of the ECG signal. Arrhythmia affects millions of individuals throughout the world. Cardiovascular disease causes around 15% of all fatalities worldwide, or close to half of all deaths, are caused by sudden cardiac death.

Project Details:

Operating system: Windows 7
Coding language: python3.3
IDE: Jupyter Notebook
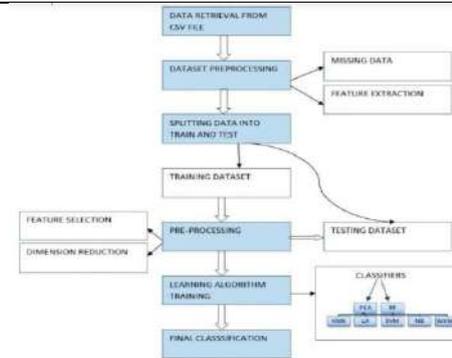
Result:

Conclusion: The findings clearly imply that machine learning can aid in the identification of heart arrhythmias It helps in the identification and prediction of cardiac arrhythmias. The ability to detect cardiac arrhythmias at an early stage would allow early intervention. The initiative might be deployed in hospitals and regularly assessed and validated using new patient datasets. The project may become more user-friendly by integrating capabilities that the doctor might require in the near future.
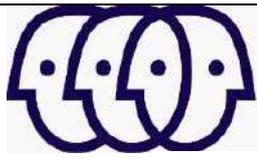
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Speech Emotion Recognition using Deep Learning

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Lavanya S

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Keerthana Patel K N

Huzaif Ahmed Shariff

Abstract: The speech emotion recognition is a very interesting yet vert challenging task of human computer interaction. In the recent years this topic has grabbed so much attention. In the field of speech emotion recognition many techniques have been utilized to extract emotions from signals including many well-established speech analysis and classification techniques. In the traditional way of speech emotion recognition features are extracted from the speech signals and then the features are selected which is collectively known as selection module and then the emotions are recognized this is a very lengthy and time taking process so this paper gives an overview of the deep learning technique which is based on feature extraction and model creation which recognizes the emotion in the speech given as input.

Project Details: Speech Emotion Recognition Takes Audio Files as input. Each audio file in the dataset is embedded with a single emotion. Using modules such as MEL, MFCC and Chroma we convert audio files to images with the information of frequency, time, and amplitude. The original dataset has about 12,000 audio files with eight kinds of emotions labelled. The surprise and calm emotion classes' data are comparatively low when compared to others. So, in order to have a balanced dataset, This dataset is further divided into train (80%) and test (20%) data.
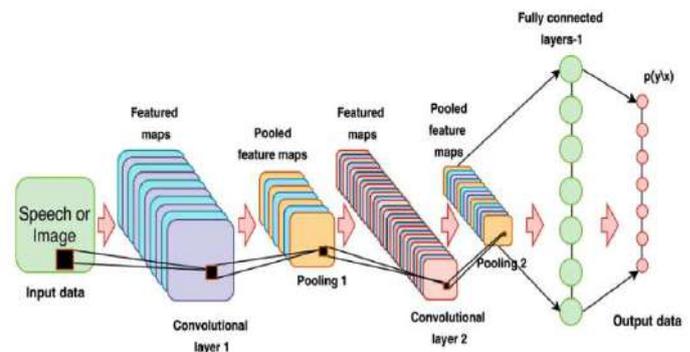
Result and Conclusion: The CNN model was trained and based on this we were able to give the emotions of a person based on speech. 'Happy', 'Sad', 'Fearful', 'Neutral', 'Calm', 'Angry', 'Disgust' are the seven different emotions which are given using this project. This Speech Emotion Recognition can be used in understanding the opinions/sentiments they express regarding a product. By giving the audio as the input to this model. We are getting Result as a confusion matrix with the accuracy around 80%-85%.
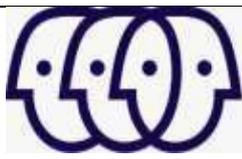
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IOT Based Real time Crop Prediction for Environmental conditions and Soil conditions

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Shaik Javeed Basha

Vignesh. D

Suhail. K

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Abstract: Agriculture is a key economic driver. It is a key to healthy biosphere. People depend on a wide range of agricultural products in almost all aspects of life. Farmers need to cope with climate change, and meet rising demands for more food of higher food quality. In order to escalate the yield and growth of crops, the farmer needs to be aware of the climatic conditions, hence aiding its decision of growing the suitable crop, under those factors. IoT based Smart Farming improves the entire Agriculture system by monitoring the field in realtime. It keeps various factors like humidity, temperature, soil etc. under check and gives a crystal clear real-time observation. Machine learning in agriculture is used to improve the productivity and quality of the crops in the agriculture sector. Use of appropriate algorithms on the sensed data can help in recommendation of suitable crop.

Project Details: Develop an IoT-based system for real-time data collection on environmental and soil conditions. Implement machine learning algorithms to analyze the collected data and predict the optimal crop type and yield for a given set of environmental and soil conditions. Test the system on a variety of crops and environmental and soil conditions to verify the accuracy of the predictions.
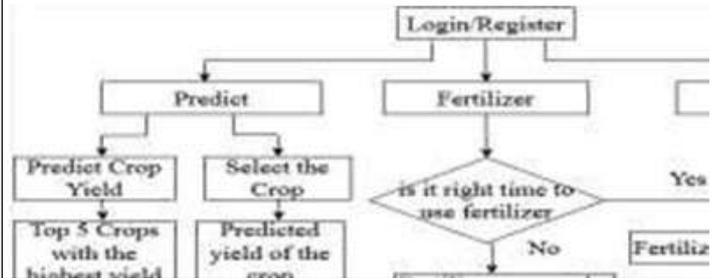
Result:
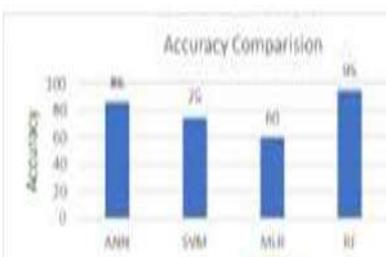
Conclusion: For yield to accuracy, various machine learning algorithms such as Random Forest, ANN, SVM, MLR, and KNN were implemented and tested on the given datasets from the Maharashtra and Karnataka states. The various algorithms are compared with their accuracy. The results obtained indicate that Random Forest Regression is the best among the set of standardalgorithms used on the given datasets with an accuracy of 95%. The proposed model also explored the timing of applying fertilizers and recommends appropriate duration.
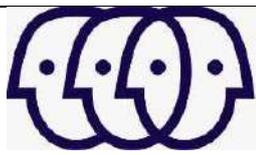
Road Accident Prediction Model Using Data Mining Techniques

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| Abhishek Aste | Sachin N V |
| K Srinath | K Pramod Siddartha |

Abstract: With the high number of traffic incidents and deaths these days, the ability to forecast the number of traffic accidents over a given time is important for the transportation department to make scientific decisions. In this scenario, it will be good to analyze the occurrence of accidents so that this can be further used to help us in coming up with techniques to reduce them. Eventhough uncertainty is a characteristic trait of majority of the accidents, over a period of time, there is a level of regularity that is perceived on observing the accidents occurring in a particular area. This regularity can be made use of in making well informed predictions on accident occurrences in an area and developing accident prediction models. In this paper, we have studied the inter relationships between road accidents, condition of a road and the role of environmental factors in the occurrence of an accident. We have made use of data mining techniques in developing an accident prediction model using Apriori algorithm and Support Vector Machines. Bangalore road accident datasets for the years 2014 to 2017 available in the internet have been made use for this study.

System Architecture:
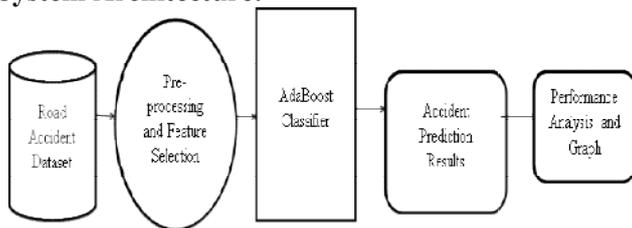
SOFTWARE REQUIREMENTS:

- Operating system: Windows 10
- Coding Language: Python
- Web Framework: Flask

Result:

Conclusion: This project was successful in creating such an application that can help in efficient prediction of road accidents based on factors such as types of vehicles, age of the driver, age of the vehicle, weather condition and road structure, so on. This model was implemented by making use of several data mining and machine learning algorithms applied over a dataset for India and have been successfully used to predict the risk probability of accidents over different areas with high accuracy.
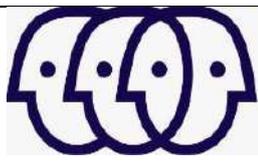
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Intelligent Handwritten Text Recognition using Hybrid CNN architecture based SVM classifier with Dropout

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Abstract: Text recognition in Arabic handwritten scripts is an active research field. These recognition systems face numerous challenges, including enormous open data-bases, infinite variation in people's handwriting, and freestyle. In this manuscript, Authors model deep learning architecture which can efficiently be utilized to recognizing Arabic handwritten scripts. This work explored a new model for both single font and multi-font type which concentrate on two common classifiers which are: Support Vector Machine (SVM) along with Convolutional Neural Network (CNN). Furthermore, authors protected the proposed model against the issue of over-fitting because of the strong performance of dropout technique.

Project Details: CNN is an algorithm of deep learning, on which the strategy of dropout is performed during training. The proposed system is suited for the recognition system where the target is to combine the SVM classifier and CNN respective capacities to achieve a new effective system. Input: Download high-res image (200KB).

Result: Sample output:
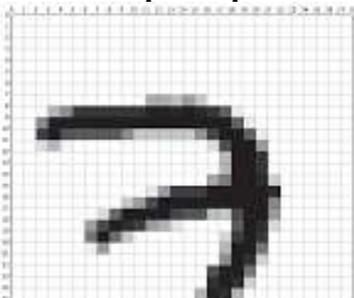
Conclusion:
In this model we can take any rough picture having handwritten texts and made to run pop windows appears saving the image in JPEG, png etc. Through the CNN and SVM layers algorithm code with SPP net and NINit runs code is stored in LSTM run algorithm (code) and produces the differentiated image structure.

Department of Electronics and Communication Engineering

The Department of Electronics and Communication Engineering (ECE) started in the year 1999 with 60 intake and with an idea of endowing young people with the necessary technical knowledge and professional skills needed to address the challenges in the rapidly growing field of Electronics and Communication Engineering and promoting research in this area. ECE department is a vital and pulsating department with highly competent, experienced and dedicated faculty members. The department meets the growing requirements of practical design engineers in the country and abroad. The curriculum in Electronics and Communication Engineering, framed by Visvesvaraya Technological University, Belagavi, lays greater emphasis on design principles and development of communication models, signal processing, image processing, VLSI and Embedded systems.

Vision

The Department aspires to be a centre of excellence in Electronics and Communication engineering to develop component and ethical professionals through holistic development

Mission

- To impart quality education and provide a conducive environment for innovation and research.
- To develop skills to meet the scientific, technological and socio-economic needs.
- To inculcate professional ethics, team work, leadership qualities and lifelong learning.
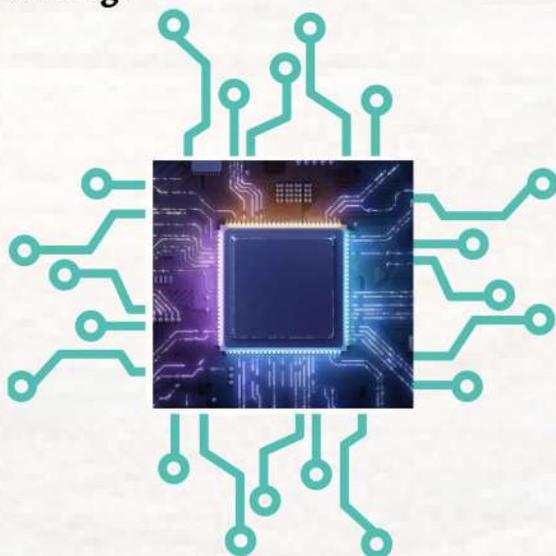
Achievements

Awarded KSCST Grant for Student Project 46th series

- Nano Engineered ink for designing 3D printable flexible electronics.

- EV BMS with charge monitor and fire protection.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS ANDCOMMUNICATION ENGINEERING

46TH SERIES OF STUDENT PROPOSAL PROGRAMME KSCST FOR THE ACADEMIC YEAR 2022-2023

CONGRATULATIONS

YASHAS D	ASHWINI K S	THILAK GOWDA
1EP19EC056	1EP19EC004	1EP19EC049
UG Scholar	UG Scholar	UG Scholar

PROJECT TITLE :- NANO ENGINEERED INK FOR DESIGNING 3D PRINTABLE FLEXIBLE ELECTRONICS

GUIDED BY:- Dr. Yogesh G S , Dr. Manjunatha M

The management, Sr. Vice President, Principal, HOD & Staff congratulate the students for receiving the funding sponsored by KSCST under the 46th series student proposal programme for the academic year 2022-2023.

Project coordinator   HOD, Dept of ECE   Principal, EPCET

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRONICS ANDCOMMUNICATION ENGINEERING

46TH SERIES OF STUDENT PROPOSAL PROGRAMME KSCST FOR THE ACADEMIC YEAR 2022-2023

CONGRATULATIONS

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1EP18EC017
UG Scholar

ANNU KUMARI
1EP19EC003
UG Scholar

UDAY GOWDA M
1EP19EC050
UG Scholar

PROJECT TITLE :- EV BMS WITH CHARGE MONITOR AND FIRE PROTECTION

GUIDED BY :- Prof. Vetrikani R

The management, Sr. Vice President, Principal, HOD & Staff congratulate the students for receiving the funding sponsored by KSCST under the 46th series student proposal programme for the academic year 2022-2023.

Project coordinator   HOD, Dept of ECE   Principal, EPCET

Title of the Project : IOT & AI BASED CROP PROTECTION SYSTEM

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Kavyashree S (1EP19EC021),
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Manish Mayank   Kavyashree S
Nikitha R K   Mahalakshmi

Abstract: The project aims the system that uses IoT and AI technology for crop protection, monitoring soil conditions and detecting unauthorized entry. The system can differentiate between human and animal intruders and sends alerts accordingly. This system reduces the need for physical monitoring and increases crop yield while improving crop field security.

Project Details: The implementation involves integrating the hardware components such as cameras, sensors and motors with the software that uses AI and IoT technology to detect potential threats.
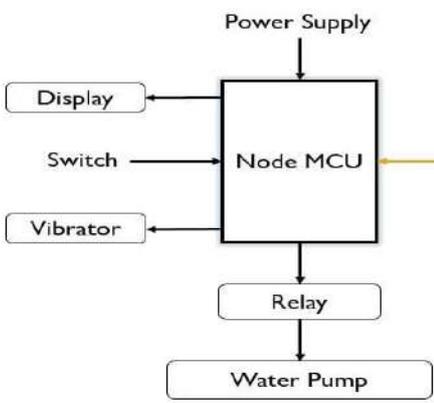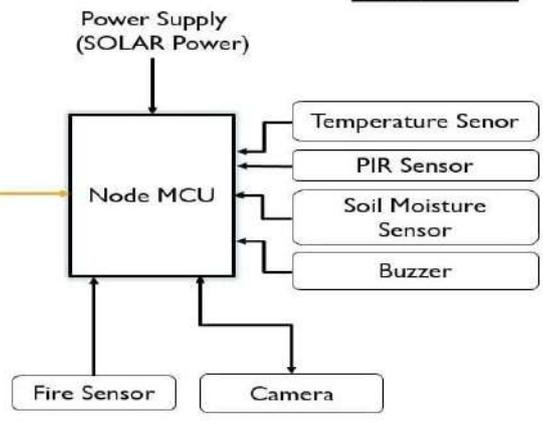
Result:

Conclusion:
The project helps farmers protect their crops using a system that detects threats and sends online notifications. Soil and temperature sensors improve crop yields, and AI identifies human and animal intrusions. The system reduces financial losses and increases yield.

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Title of the Project :
"Design and development an Agriculture robot for Seed sowing, Water spray and Fertigation"

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D. Vasanth Kumar Reddy

Abstract: The agriculture robot is designed to perform three important tasks, including seed sowing, water spraying, and fertigation. It uses advanced sensors and algorithms to detect soil conditions and adjust the amount of water and fertilizer applied. The robot is equipped with a precision seed dispenser and a water tank for efficient and accurate operations.

Project Details: In order to Controlling and Monitoring, Robot System is designed. The robot is controlled via android mobile using Bluetooth and monitored using Esp32 cam. The system includes all sensors, PCB, controller with communication hardware, low-level protocols, Arduino, Esp32 cam, Bluetooth, servo motors.
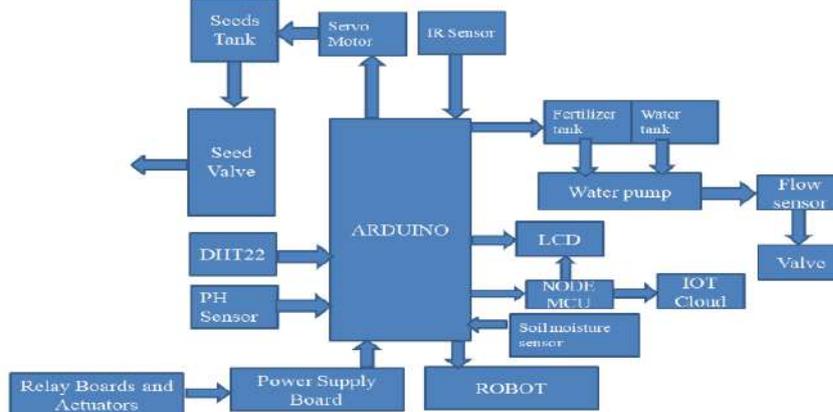
Figure: Block Diagram

Result:

Conclusion: The design and development of an agriculture robot for seed sowing, water spray, and fertigation has shown great potential to improve efficiency and productivity in farming. The robot's ability to perform multiple tasks simultaneously and precisely can lead to reduced labor costs and increased crop yields. With further advancements and implementation, this technology could revolutionize the agriculture industry.

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Title of the Project : Density Based Traffic Signal System with Movable Road Divider

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Jithesh B R

Vidhyashree H L   Vidya N

Abstract: The project aims to create an intelligent traffic control system that can adjust signal timing based on traffic density and increase road width by moving dividers. This is a response to the growing problem of traffic congestion in cities worldwide. The current fixed-time based traffic signalling system may be inefficient if traffic is not evenly distributed. The proposed system uses proximity infrared sensors to detect traffic density and assigns green light time accordingly using a microcontroller. The system also includes movable road dividers that can be adjusted based on traffic density to further optimize traffic flow.

Project Details: The project uses Proximity sensors to detect the density of traffic on the road and automatically varies the frequency of red and green signal accordingly. The movable road dividers are move towards 1/3rd of low density traffic.
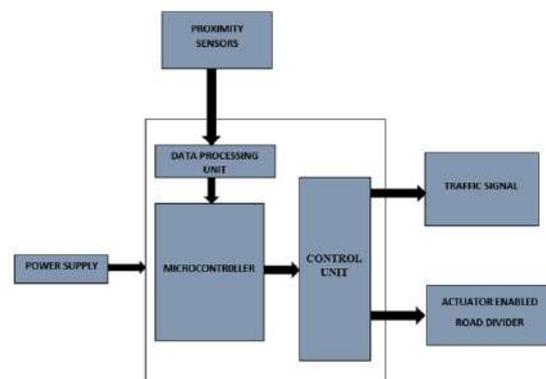
Result:
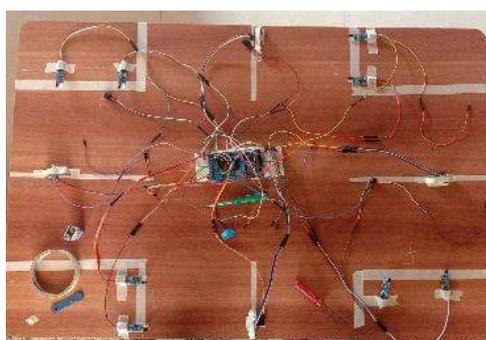
Conclusion:
The density-based traffic signal system with movable road divider is an innovative solution to the problem of traffic congestion in cities. By using real-time traffic data, it adjusts signal timings and traffic flow, improving safety and reducing delays for all road users. The movable road divider adds flexibility to the road's lane configuration, allowing it to adapt to changing traffic conditions and optimize flow. This system has the potential to significantly improve urban transportation networks, making them more sustainable and user-friendly.

Title of the Project : Self-Driving Car Using Raspberry Pi (Deep Learning and Image Processing)

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KEERTHANA M   NISARGA A

VIVEK G

Abstract: The objective of the project is to represent an Autonomous car prototype which uses Raspberry Pi as the core functioning chip and our system use Open CV and Machine learning technology. The car will move automatically without any human help to the destination by itself. The car uses the core processing system as Raspberry Pi, which is interfaced with the Pi camera module, will stream the video to the Monitor as the local host. Based on which the detection like pedestrians, vehicles or road sign and signals are done and corresponding commands are sent to the Arduino serially to operate the car.

Project Details: The implementation of a self-driving car using Raspberry Pi involves integrating hardware components such as cameras, sensors, and motors with software that uses machine learning and computer vision algorithms to detect and respond to the environment. The methodology includes collecting training data, developing and testing the software, and deploying it onto the Raspberry Pi for autonomous operation.

Figure: Block Diagram

Result:

Conclusion: Driverless car revolution which aims at the development of autonomous vehicles for easy transportation without a driver. For the economy, society, and individual business this autonomous technology has brought many broad implications. In this paper, a method is determined for marked road edges are explained in detail relying upon OpenCV. Cars that drive themselves will improve road safety, fuel efficiency, increase productivity and accessibility. The driverless car technology helps to minimize loss of control by improving vehicle's stability as they are designed to minimize accidents by addressing one of the main causes of collisions: Driving error, distraction and drowsiness. The algorithm mention in this project has been successfully implemented in prototype of Autonomous car.

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Title of the Project : Design and development of smart hot and cold water dispenser using NodeMCU

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NAVYA SHREE N   NEETU MALLICK

SUSHMA S S

Abstract: The proposed system is to design a product using the current technology that will be beneficial to society. The system is developed in two ways as one is based on voice command through mobile and the another one is based on the manual way, this manual method is for the people who don't have the smartphone those people will give input through keypad.

Project Details: The proposed system consists of NodeMCU as microcontroller and different kinds of sensors.Using these components the system is designed as shown below.
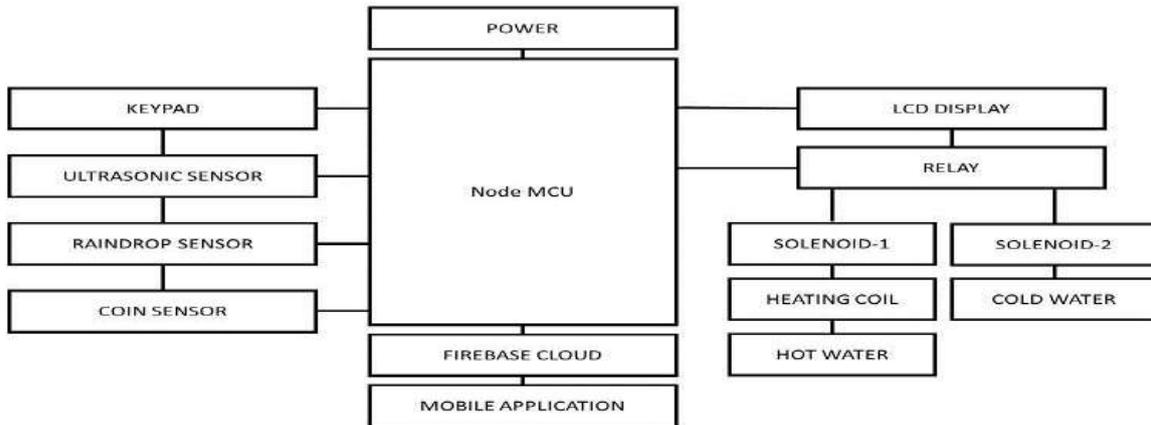
Figure: Block Diagram

Result:

Conclusion: The implementation of this proposed system overall is successful. The motive of making the project is user-friendly, to avoid the wastage of water is taken into account and achieved. The proposed system is created with the use of different sensors like coin sensor, rain drop sensor, ultrasonic sensor, NodeMCU ESP32 as a controller, keypad to get input from user and an app to get voice command from user smartphone.

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Title of the Project: Comparative Analysis of Cardiovascular Disease Using Different Machine Learning Classifiers

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Guide Name: Dr. HARSHAVARDHANA REDDY K

HARSHAVARDHAN NAIDU   MOHAMMED AZAMPASHA

SATHISH KUMAR R K

Abstract: This study presents a comparative analysis of different machine learning classifiers for predicting cardiovascular disease. The performance of six classifiers was evaluated, including Random Forest, Decision Tree, Logistic Regression, Naive Byes , K Nearest Neighbour, SVM and comparing the accuracy among them.

Project Details: Cardiovascular disease (CVD) is a major cause of death worldwide. Early detection and accurate prediction of CVD are crucial in preventing its occurrence and reducing its impact. Machine learning (ML) has shown great potential in predicting CVD.
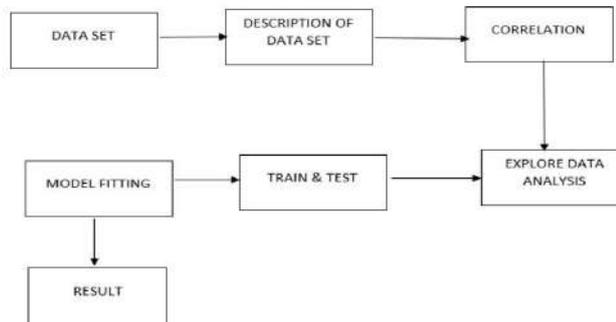
Fig. Block Diagram

Result: We have taken 6 Algorithms namely Logistic Regression. Random Forest, Naive Bayes, KNN, Decision Tree, Support Vector Machine and we had done the testing for these classifiers out of 6 of them random forest given the best accuracy with 90 percentage
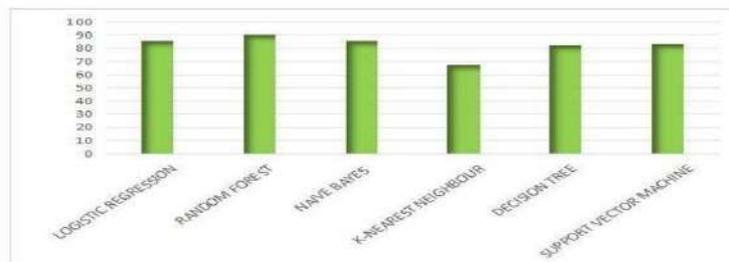
Conclusion: In this project, the aim was to develop a predictive model for the diagnosis of coronary heart disease using mechanical learning separators using various card-related parameters. The database was pre- processed and six algorithms were developed for Random Forest, SVM, KNN, and Logistic Regression in Jupiter software. The effectiveness of this method has been tested for accuracy. The most effective model for predicting patients with heart disease appears to be the random Forest segregation used in the selected criteria with 90 percent accuracy.

Title of the Project: : **Wearable Device for Child and Women Safety Using IOT.**

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Ipshita Bhattacharjee(1EP19EC016)

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Afreenbanu N Kotwal

Anindya Sarkar

Ipshita Bhattacharjee

Abstract: Now a days, women and children are facing various issues like sexual assaults. Such violence will definitely have huge impact on the lives of victim. So, in this project we have planned to propose a device which will act as a tool to provide security and ensures the safety of the women and the children. Microcontroller, GPS module and various sensors are interfaced to track and send notifications and current location of women and children.

Project Details: The project is mainly working so as to give a real time data of the victim to the dedicated care taker.It is an IOT project wherein with the use of internet all the sensor data of a person is taken to the server then to the intended person
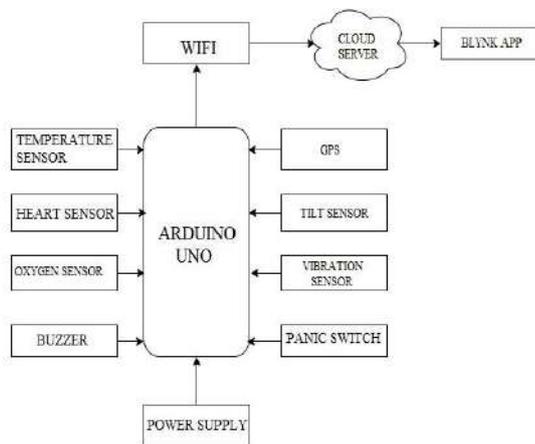
Fig:Interfacing Arduino Uno

Result:
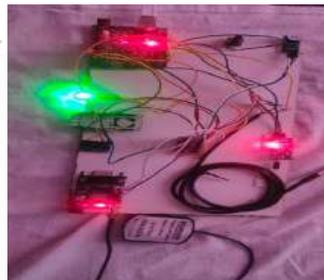
Conclusion: Wearable devices have the potential to enhance the safety of children and women by providing real-time location tracking, emergency alerts, and other safety features. These devices can offer peace of mind for parents and guardians, as well as help to prevent and respond to incidents of violence..They should be used in conjunction with other safety measures and resources, such as education on personal safety and awareness, emergency response systems, and community support.

Title of the Project : Voice Controlled Wheeled Robotic Arm To Assist Doctor In Operation Theatre

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Sharqia Arif   Megana L

Nausheen Farhan

Abstract : This project focuses on real-time object detection using a robot equipped with a camera in the field of computer vision. The robot is designed to move and maintain a constant distance from the object, while the camera captures images that are processed in real-time using computer vision algorithms. Specifically, an ARM11 Raspberry Pi device is used to capture images and control the camera. This approach has potential applications in various fields, including medicine for identifying tumors or monitoring patient movements.

Project Details: This project involves the implementation of a robotic arm that uses an ARM11 Raspberry Pi board and neural networks to assist doctors in the operation theatre. OpenCV and Google Colab are utilized for coding the robotic arm movements. The combination of these technologies allows for efficient and precise movements of the robotic arm, which can be beneficial in medical procedures.
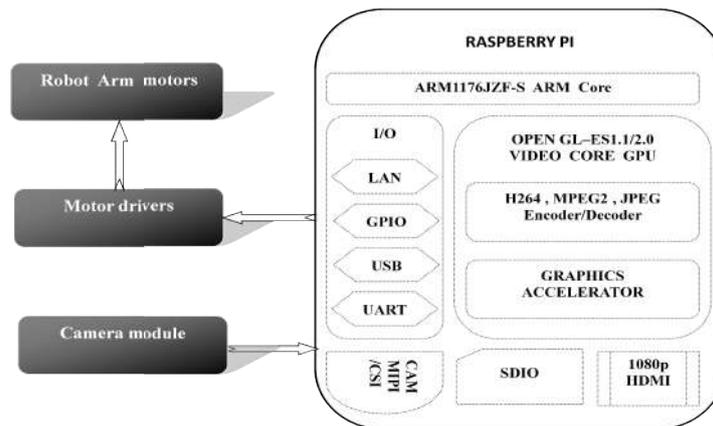
Fig. Block diagram of connection between robotic arm and raspberry pi board

Result:
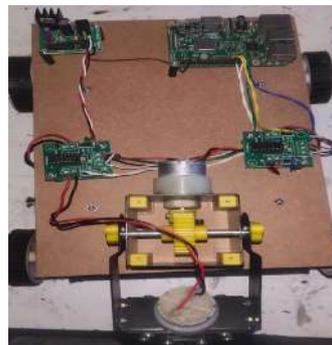
Conclusion: This project has developed an efficient and low-cost robot for pick-and-place operations using object detection and collection. By combining concepts from automobile robotics and neural networks, this robot has various industrial applications and has the potential to serve as a platform for larger, more advanced robots.

Title of the Project: Arduino Board Using Solar Power Driving Grass Cutting Machine

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SUDHARSHAN G   SHAHID ALAM KHAN

K MANJUNADH

Abstract: The use of solar energy to power a grass cutting machine controlled by an Arduino board is an innovative and sustainable solution that reduces carbon emissions and promotes environmental sustainability. The system consists of a 12V battery charged by a solar panel, which powers the motors of the grass cutting machine and the Arduino board. Sensors such as ultrasonic sensors are used for obstacle detection, and the Arduino board controls the movement and cutting action of the grass cutting machine based on sensor input.

Project Details: Solar power based this system was developed in grass cutter. In this, we added the ultrasonic sensor to find the obstacle. If the obstacle was detected means robot will be turned right and moving in the forwarding side. The whole power was taken by the solar panels**.**
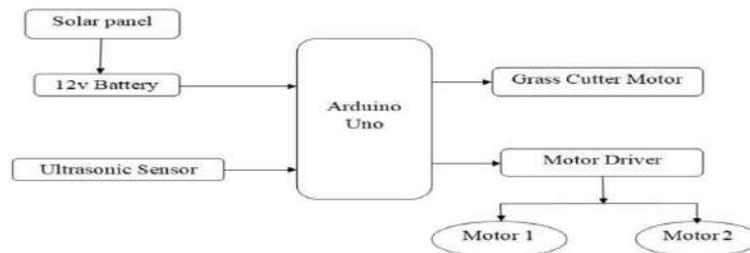
Figure: Block Diagram

Result:

Conclusion: This project provides a design method Of an automated grass Cutter operated on solar power, Whose task is to Cut grass with no need Of user interaction. This task is expected to be made possible by using sensors to provide an Arduino with controlling.The obstacle is automatically avoided, here for obstacle avoidance the ultrasonic sensor is used. The system also provides power backup by using inverter. The proposed system Will be cost efficient With higher reliability.

Title of the Project :

Development of an IOT based sleep apnea monitoring system for healthcare applications

Student Names: Keshav S P (1EP19EC023),

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Yashas T R(1EP19EC057),

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Tamilarasu C   Keshav S P

Yashas T R

Abstract: Sleep apnea is a disorder that affects breathing during sleep. There are two main types: obstructive sleep apnea (OSA) and central sleep apnea (CSA). OSA happens when the muscles at the back of the throat don't keep the airway open, while CSA occurs when the brain doesn't send proper signals to the muscles that control breathing.

Project Details: The project will use IoT to monitor sleep apnea, collecting data using sensors and machine learning. A mobile app will offer feedback and treatment recommendations, and clinical trials will validate the system's accuracy. The project could improve the diagnosis and management of sleep apnea.
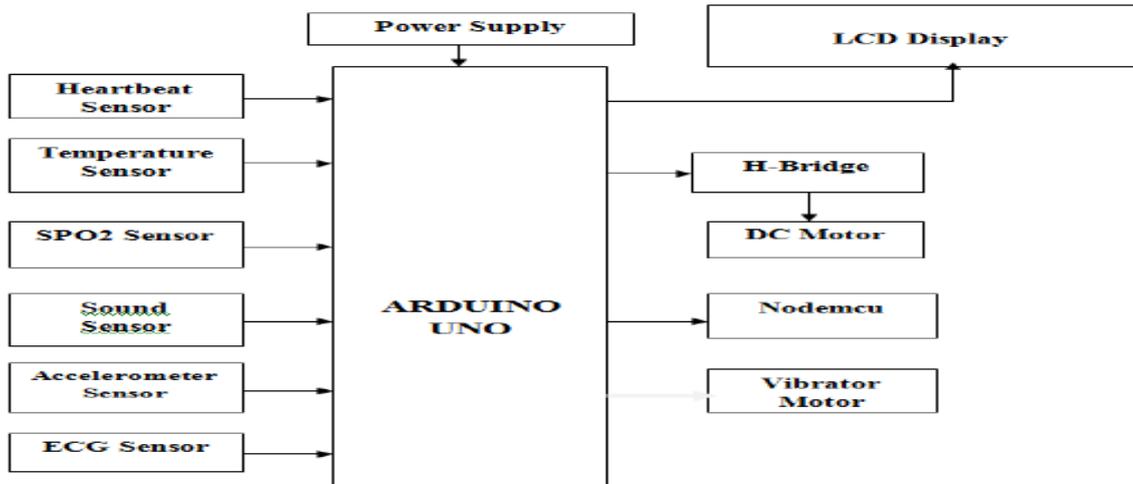
Figure: Block Diagram

Result:

In most research, ECG data and other data are used to measure or monitor sleep apnea.

Conclusion:

The research used IoT devices to monitor sleep apnea. They used a microcontroller and sensors to create a system that can detect sleep apnea in people. The system was tested on five people and it worked well, detecting sleep apnea in some of them. It can help with diagnosing and treating sleep apnea.

Title of the Project:
AI AND ML BASED CHATBOT DEVELOPMENT FOR SMART DIGITAL MARKETING

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Kadavakollu Kishor (1EP19EC019)
Raj Prabal Singh KC (1EP19EC038)

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Abhiram P   Kadavakollu Kishor

Raj Prabal Singh KC

Abstract: Artificial Intelligence (AI) and Machine Learning (ML) have transformed the way digital marketing operates. One of the most notable advancements in this field is the development of AI and ML-based chatbots. Chatbots are computer programs designed to simulate human conversation and assist users with their queries.

Project Details: We have employed applications like Google Firebase, MIT App Inventor, Advance IP Scanner, Python Programming, VNC viewer and Raspberry Pi OS and also used Hardware components like Raspberry Pi zero w, Buzzer and LCD.
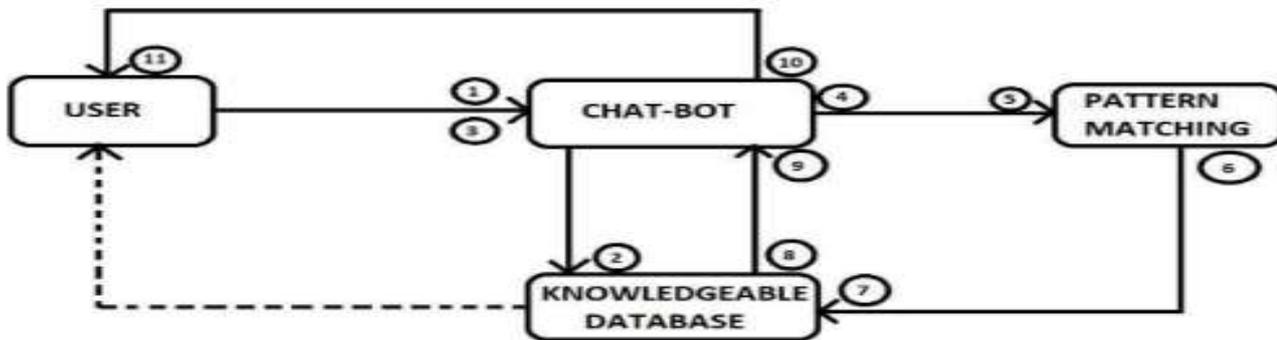
Fig: Block Diagram for Chatbot

Result:
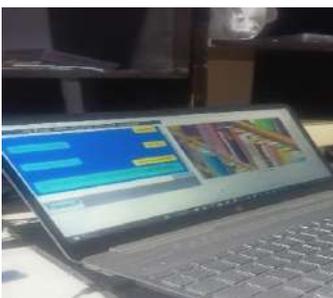
Conclusion:
We built a chat-bot using Python, ChatterBot library, and Flask framework. The chat-bot's purpose is to help users easily gather information about the college and store their details for follow-up purposes. The chat-bot can converse with users and provide answers to their questions.

Title of the Project : Black Box System Using Raspberry Pi

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Vijay Kumar M R   Chiranthana S L

Vishwanath M O

Abstract: This project proposes the development of a car black box system that aims to analyse accidents by tracking the working process of vehicles. The system uses a GPS sensor to collect location data and sends an alert message to the user's mobile device through a Bluetooth module. The project's objective is to improve accident analysis and increase safety measures in vehicles.

Project Details: In this project we have used various sensors to detect the abnormalities in the vehicle and the driver also we have used a GPS module to spot the location of the vehicle where accident has occurred.
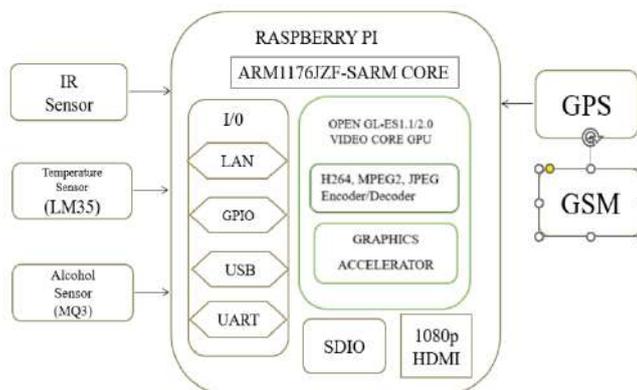
Fig : Block Diagram of the Black Box System

Result:

Fig : GPS coordinates of the device are displayed in the LCD display

Conclusion: This project aimed to develop a system to detect and rescue vehicles from accidents. The system used a database to supply accident data and sent alert messages to contact persons, nearby hospitals, and police stations via a Wi-Fi network, including location information. The system was tested in real-world applications, and the results showed that there were no false alert messages. GPS and GSM technologies were used to map the vehicle and provide accident alerts, which can improve safety measures for vehicles. This project has the potential to reduce the number of road accidents and minimize the severity of their consequences.

Title of the Project : PATHWAY SKYROVER

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Thilak Gowda (1EP19EC049)
Yashas D (1EP19EC056)

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Guide Name: Mrs. Radhamani R
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Ashwini K S   Thilak Gowda

Yashas D

Abstract: This proposed system will provide protection for trekkers in forest or adventure places. It will give image to identify whether there is harmful organism, by this they can find alternative pathway for adventure. It will provide delivery for emergency needs like food, medicines and other basic needs for trekkers.

Project Details: The proposed system consists of Flight Controller, Electronic Speed Controller (ESC), BLDC Motor, Propellers, Radio Receiver and Radio Controller, Batteries, Frame, Camera ,Telemetry, GPS, PPM module, Camera gimble and QGround Control. Using these components, the system is designed in Fig below.
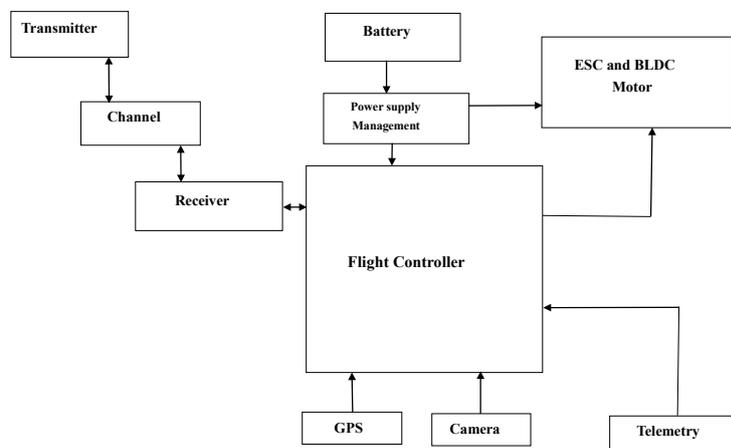
Result:

Conclusion: This proposed system will provide protection for trekkers in forest or adventure places. It will give images to identify whether there is harmful organism, by this they can find alternative pathway for adventure. It will provide delivery for emergency needs like food, medicines and other basic needs for trekkers. It will also identify proper location for trekkers while camping overnight.

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Title of the Project :Power Station Monitoring Using PLC

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Guide Name : Mr. Praveen Kumar K C
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Sheela K   Shireesha T

Sindhu C

Abstract : Monitoring transmission parameters for faults and quick isolation of the system from faults helps to improve the efficiency of the power system's reliability. Current conventional method has its limitations due to the reliance on the technical team to carry out a visual inspection in order to identify any fault.

Project Details: The automation is developed by using PLC (Programmable Logic Controller) which reduces the errors caused by human workers.
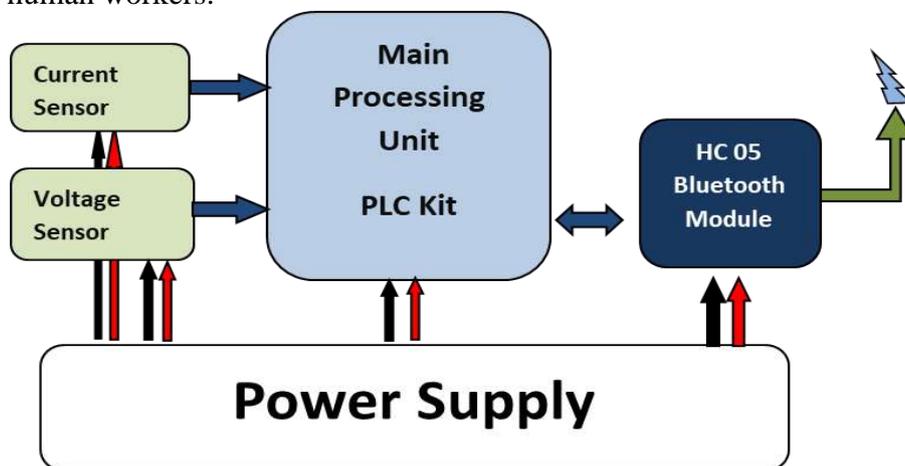
Result:
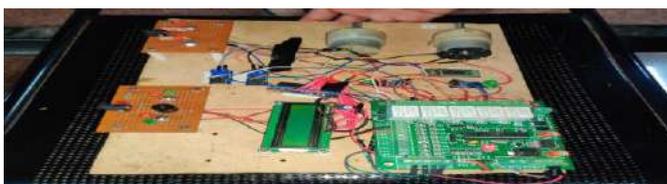
Conclusion: Using this system we can detect the position/location of the fault that occurred during the overhead HV power transmission line by PLC, Thus by this system, we serve the power efficiently to the people.

Title of the Project : "Design and development of "EV BMS with charge monitor and fire protection"

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Abstract : The charge monitor feature of the BMS constantly monitors the charging process and ensures that the battery pack is charged within safe limits. This prevents overcharging or undercharging of the battery pack, which can cause damage to the battery and pose a safety risk. The fire protection feature of the BMS is designed to prevent and detect any potential fire hazard in the battery pack. This includes measures such as thermal sensors, voltage sensors, and current sensors that detect any anomalies in the battery pack and take action to prevent a firebuzzer alert on the LCD display.

Project Details:

- Battery management system (BMS) is the crucial system in electric vehicle because batteries used in electric vehicle should not be get overcharged or over discharged.
- If that happens, it leads to the damage of the battery, rise in temperature, reducing the life span of the battery, and sometimes also to the persons using it.
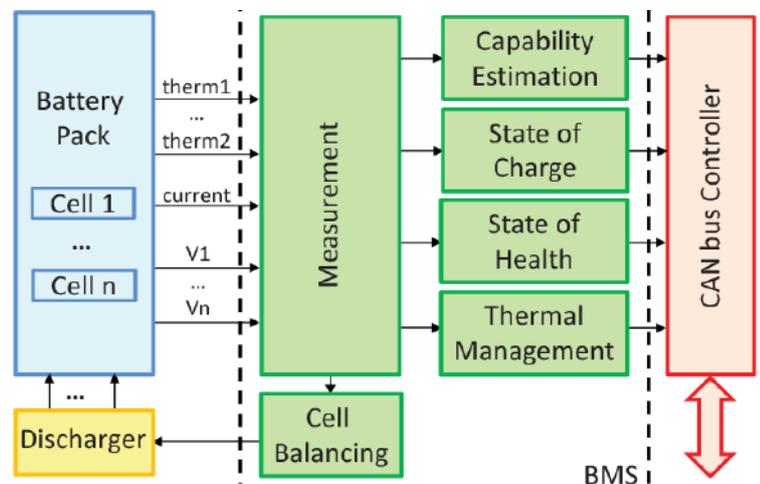
Result: System is designed and implemented as per the circuit.
Model Snapshots are shown below.
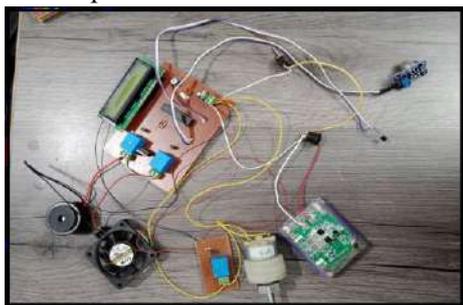
Conclusion: The final approach for making this hardware modules is to give a easy way of protection.
We tried to fulfil almost all the missing requirement for these types of platforms make this hardware modules as much as:

- Flexible
- User friendly

After all this feature there is lot, more scope left in this platform so the development will continue.

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Department of Electronics & Communication Engineering

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Title of the Project : Design and Simulation of PID Controller based on Q-Learning Algorithm for BLDC Motor

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CHALLA VAMSHI   DIVYA K S

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Abstract: This study proposes a PID controller based on the Q-learning algorithm for a BLDC motor. The controller is designed and simulated, showing improved motor performance and energy efficiency. The Q-learning algorithm is used to learn and adapt to changing operating conditions, resulting in precise and reliable control.

Project Details: The project involves developing a mathematical model of the BLDC motor, designing a PID controller, using Q-learning to tune the coefficients of the controller, simulating the system, and implementing the controller in hardware.
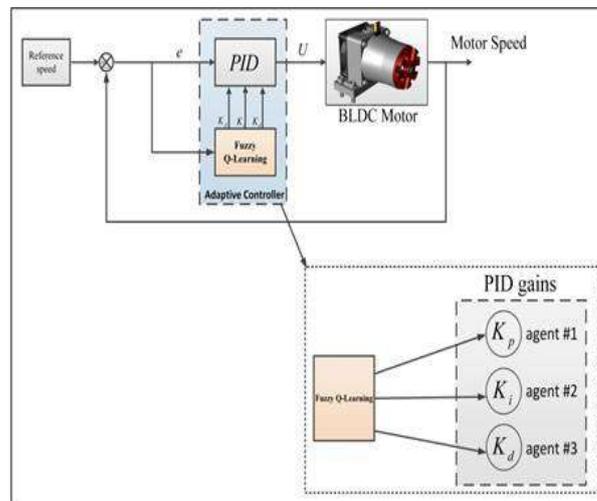
Fig: The structure of the self-tuning PID-type fuzzy Q-learning adaptive controller

Result:
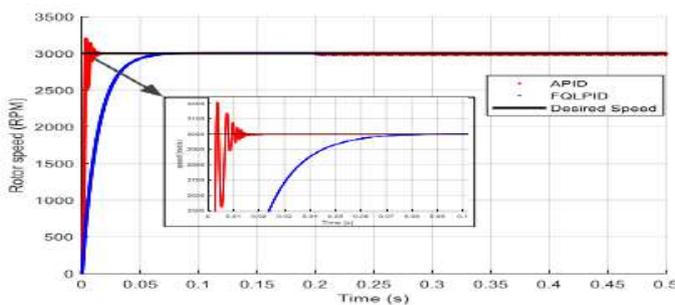
Conclusion: Designing and simulating a PID controller based on the Q-learning algorithm for a BLDC motor can lead to improved motor performance, better efficiency, and reduced energy consumption. This approach allows the controller to learn and adapt to changing operating conditions, resulting in more precise and reliable control.

Department of Information Science and Engineering

Department of Information Science and Engineering, affiliated to Visveswaraya Technological University (VTU), Belagavi, approved by AICTE is functioning since 2001. The department offers BE program in Information Science and Engineering with an intake of 120 students. The program imparts basic and advanced knowledge in Information Science and Engineering, technical competencies and necessary IT skills and prepares the students for the development of information science based solutions for the real world paradigms.

The department provides opportunities to students to exhibit talents, leadership qualities through the departmental forum and student chapters. The department organizes International and national conferences, Seminars, Student Symposia, youth festivals, short-time training programs, and value-added courses. This provides a wide range of opportunities for students and faculty members to bring out their potential and innovative skills in various fields.

To bridge the gap between academia and industry, the department offers Industry Institute Integrated Learning Program (IIILP), providing opportunities for students to have training in industry standards tools and techniques.

DEPARTMENT VISION

The Department aspires to be center of excellence for engineering education in the field of Information

Science and Engineering, fosters academic and career success for holistic development

DEPARTMENT MISSION

M1: To create graduates in Information Science and Engineering by nurturing innovation, creativity and excellence in Teaching, Learning and Research

M2: To develop and disseminate technical skills to address current and future industrial needs

M3: To encourage team work, critical thinking, personality development and ethics in students to lay the foundation for lifelong learning

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Title of the Project: Navigating Eye To Blind People Using Machine Learning

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Aishwarya S	Anushree R
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Abstract: For visually disabled people, navigating the streets is a challenging activity. The proposed model suggests a novel implementation of smart navigation based on Image Captioning and Optical Character Recognition to ease the navigation process. The system consists of a camera, an Image Captioning module, an OCR module, and Text-To-Speech module. The proposed research makes navigating on the street less challenging for visually impaired people. It also helps them to comprehend the signboards and to make optimum use of the available facilities. The presented model can successfully generate captions based on the surroundings and can read the text whenever required.

Project Details: We are implementing this project using Data collection module, Data Pre-processing and feature extraction module, Building, Training the Model, Caption Generation and voice output module.
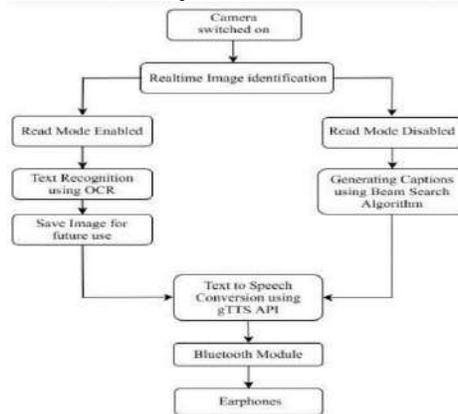
Result: The software model shows the result for the image embedded with text. Also, images showing the environment can be converted into text. The OCR model can successfully recognize the text embedded in any image. The model is trained to detect and read text in English. The proposed project makes navigating on the street less challenging for visually impaired people.

Conclusion: The proposed work focuses on the technologies like CNN and Image Captioning. The model generates the image into the textual representation in real-time. Image containing the text or image showing the scene is rendered as text. This text is then converted to voice to provide notifications to the user. This project introduces a new system for visually impaired people for navigation.

Title of the Project : Gesture Recognition of Dumb and Deaf to Text or Speech

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Dheeraj Sharma   Charith M

Deeraj G   C Chethan

Abstract: Dumb people are usually deprived of normal communication with other people in the society. It has been observed that they find it really difficult at times to interact with normal people with their gestures, as only a very few of those are recognized by most people. Since people with hearing impairment or deaf people cannot talk like normal people so they have to depend on some sort of visual communication in most of the time. Sign language is the only tool of communication for the person who is not able to speak and hear anything. Sign language is a boon for the physically challenged people to express their thoughts and emotion. In this project, a novel scheme of sign language recognition has been proposed for identifying the alphabets and gestures in sign language. With the help of computer vision, we can detect signs and give the respective text and voice output.

Project Details:

Result: This project is created as a user friendly web page which is hosted using Node.js. Here the user gives the start and stop gestures for initiating and terminating the prediction process. The user is taken to the next page called 'Continue Training'. Here the user adds gestures for prediction and trains the gestures. Each gesture is trained with a minimal count of 30 images. Training is done by KNN Model.

Conclusion: We presented the concept of gesture-to speech conversion concept, due to which the communication between the vocally impaired people of the society and the common people will be carried out without any obstruction. Interaction is more important for conveying some information. Thus, the proposed system acts as a communication platform for different people. The proposed system can classify the captured images more accurately, and gives relevant output for the given input. This system helps in many to solve the communication problems. Hand gesture detection is fundamental to provide a natural HCI skill.

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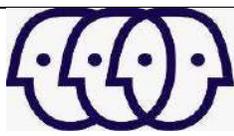
Title of the Project: Chaufferur Recognition Based On The Convolution Neural System

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Guide Name: Prof. Teena K B

Abstract: Driving is a set of behavior that need high concentration. Sometimes these behaviors are dominated by other acts such as smoking, eating, drinking, talking, phone calls, adjusting the radio, or drowsiness. These are also the main causes of current traffic accidents. Therefore, developing applications to warn drivers in advance is essential. This research introduces a light-weight convolutional neural network architecture to recognize driver behaviors, helping the warning system to provide accurate information and to minimize traffic collisions. This network is a combination of feature extraction and classifier modules. The feature extraction module uses the advantages of the standard convolution layers, depth wise separable convolution layers, average pooling layers, and proposed adaptive connections to extract the feature maps. The benefit of the convolution block attention module is deployed in the feature extraction module that guides the network in learning the salient features.

Project Details:

The Chauffeur Recognition project uses Convolutional Neural Networks to detect and classify drivers based on their behavior. The model can classify new data and provide alerts for unsafe behavior, with the goal of preventing accidents caused by unsafe driver behavior.

CNN- based Driver Behavior Classifier
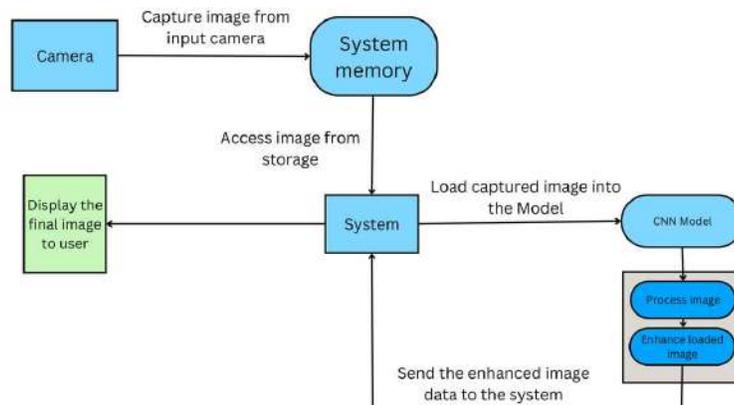
Conclusion: The Chauffeur Recognition project uses advanced machine learning techniques to develop a system that can accurately detect and classify drivers based on their behavior. By providing real-time alerts for unsafe behavior, this system has the potential to prevent accidents and save lives.

Result:
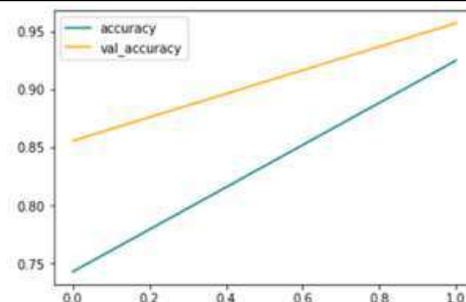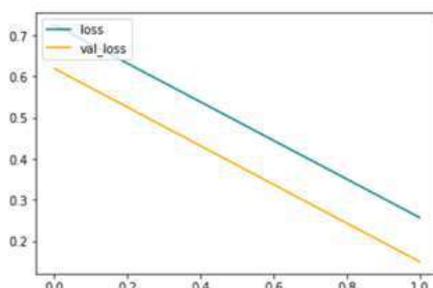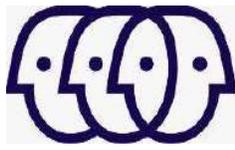
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Title of the Project :CROP PREDICTION USING MACHINE LEARNING ALGORITHMS

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Guide Name: Dr. Udayabalan Balasingam

Anusha B | Dheeraj Kumar
Lavanya N | Madhushree K

Abstract: In general, agriculture is the backbone of India and also plays an important role in Indian economy by providing a certain percentage of domestic product to ensure the food security. But now-a-days, food production and prediction is getting depleted due to unnatural climatic changes, which will adversely affect the economy of farmers by getting a poor yield and also help the farmers to remain less familiar in forecasting the future crops. This research work helps the beginner farmer in such a way to guide them for sowing the reasonable crops by deploying machine learning, one of the advanced technologies in crop prediction. Decision Tree, a supervised learning algorithm puts forth in the way to achieve it. The seed data of the crops are collected here, with the appropriate parameters like temperature, humidity and moisture content, which helps the crops to achieve a successful growth. In addition as the software, a PC application for windows is being developed.

1. **Project Details:** Ph sensor and environmental sensor provide raw data and Aurdino board convert that data into digital format and send to PC through serial communication.

System Design

DHT 11 SENSOR → AURDINO BOARD → PC WITH ML PROGRAM ← Data set

PH SENSOR → AURDINO BOARD

PC WITH ML PROGRAM ↔ WEB APPLICATION → CROP PREDICT
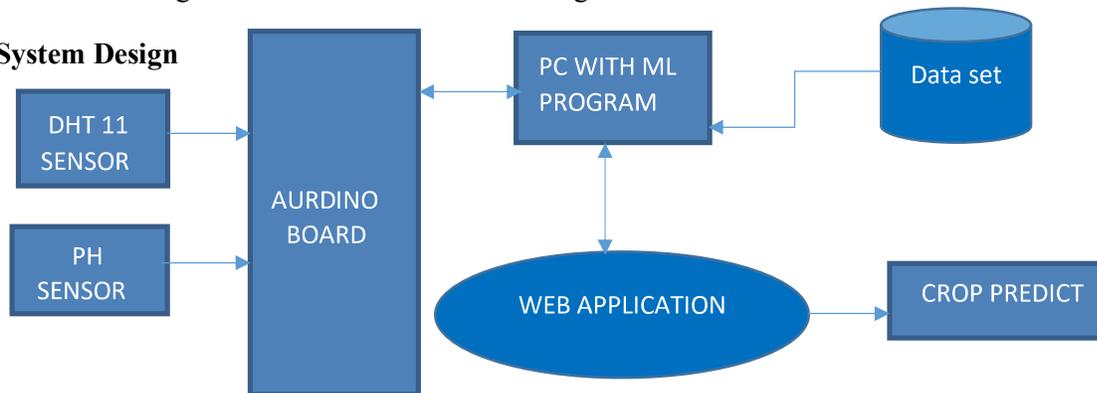
Result:

Conclusion: Significance of data like weather, crops, area, productivity studied. Farmers need assistance with recent technology to grow their crops. Proper prediction of crops can be informed to agriculturists in time basis. Machine Learning techniques have been used to analyze the agriculture parameters.

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Title of the Project : Forest Fire Prediction using Machine Learning Techniques

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Guide Name: Prof. Hanumant Pujar

Harshitha B   Harshitha G

Kajal Khilnani   Lakshmi H M

Abstract: Forest Fire Prediction is a key component of forest fire control. This creates ecological destruction in the form of a threatened landscape of natural resources that disrupts the stability of the ecosystem, increases the risk for other natural hazards, and decreases resources like water that causes global warming and water pollution. Fire Detection is a key in controlling such incidents. Prediction of forest fire id expected to reduce the impact of forest fire in the future. Many fire detection algorithms are available with different approach towards the detection of fire. In the existing work processes the fire affected region is predicted based on the satellite images. To predict the occurrences of a forest fire the proposed system processes using the meteorological parameters such as temperature, rain, wind and humidity were used. Random forest regression and Hyper parameter tuning using Randomized Search CV algorithm we used a various subsample of dataset on which it fits several decision trees and uses averaging to improve the predictive accuracy and control over-fitting. Based on the analysis of the models with all the selected meteorological parameters can represent the forest fire events. This paper discusses different models for predicting forest fire such as Decision Tree, Random Forest, Support Vector Machine.

Project Details: System Architecture – The following diagram describes the structure, behaviour and views of the system. The system modules and subsystems that will collaborate to execute the overall system.
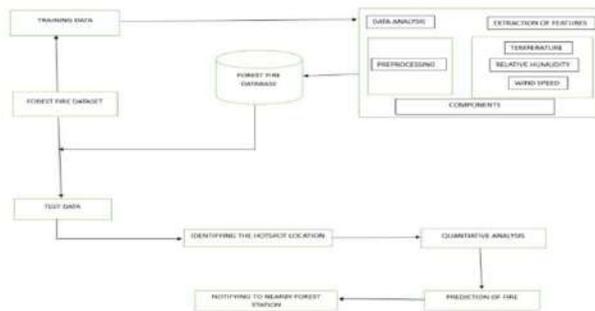
The collected data are used to train the system and tend to do the prediction. We analysed temperature, humidity, rain, wind speed and predict the fire in forest. The regression techniques used for prediction are random forest (RF), Decision tree (DT) and support vector regression (SVR). The planned models were enforced in the python platform. RF, DT and SVR are used for implementation, and a comparative study has been created, results obtained from the model coaching and testing.

Result:

No	Algorithm	SCORE	MAE	MSE	RMSE	R2
1	Decision Tree	0.99996	0.124135	0.49283	0.702019	0.999959
2	Random Forest Regression	0.827025	11.8429	2097.34	45.7967	0.826483
3	SVM Regression	0.000431364	22.6214	12570.2	112.117	-0.0399527
4	Tuned Random Forest	1	0.12	0.49	0.7	1

Conclusion: The factors causing the frequency of fire are investigated based on factors like Temperature & Relative Speed. It is also found that the number of fires in forests is higher than in other surface areas.

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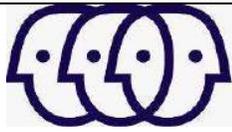
Title of the Project: Live Object Detection using YOLO Framework

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Guide Name: Prof. Teena K B

Ashwaqulla Baig   Avinash Kumar

Bal Kishan Reddy   Iram Sabha

Abstract: Real-time object detection is a vast, vibrant and complex area of computer vision. If there is a single object to be detected in an image, it is known as Image Localization and if there are multiple objects in an image, then it is Object Detection. Our Project detects the semantic objects of a class in digital images and videos.include tracking objects, video surveillance, pedestrian detection, people counting, self-driving cars, face detection, ball tracking in sports and many more. YOLO is a state-of-the-art deep learning framework that uses convolutional neural networks to detect objects with high accuracy and speed, training them on a dataset of images. Once the model is trained, it is deployed for real-time object detection in a video stream.

Project Details:

A deep neural network-based approach that includes a YOLO model trained on large COCO datasets of labeled images and video, and optimized for fast and accurate detection of objects in real-time.

Dataset:
https://www.cocodataset.org

YOLO: You Only Look Once
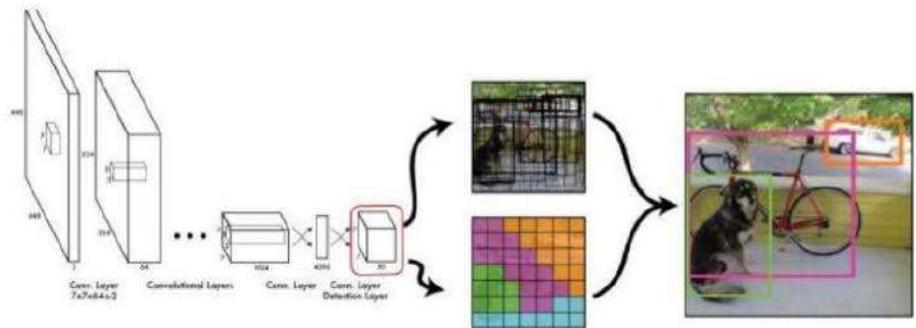
Result:

Conclusion: This Object Detection algorithm which uses YOLO, is simple, fast and accurate. Many objects can be successfully detected on any given image. It takes the entire image in a single instance and predicts these bounding box coordinates and class probabilities. The biggest advantage of using YOLO is its superb speed – it's incredibly fast and can process 45 frames per second. The accuracy of YOLO is reported to be state-of-the-art, with an AP50 of 0.5 (average precision with a threshold of 0.5) of 67.7% on the COCO dataset.

Title of the Project: Automatic Classification of Knee Osteoarthritis Severity Using Radiographic Images

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Guide Name: Prof. Dr. Nanda Ashwin

Pooja VC	Dikshitha H R
Harshitha V	Varsha B R

Abstract: Knee osteoarthritis (KOA) is a leading cause of disability among elderly adults, and it causes pain and discomfort and limits the functional independence of such adults. The aim of this study was the development of an automated classification model for KOA, based on the Kellgren–Lawrence (KL) grading system, using radiographic imaging. Radiographic image features extracted from a deep learning network, namely, Inception-ResNet-v2 were exploited using a Convolution Neural Network for KOA multi-classification. The proposed model outperformed a common deep learning approach that is based on using only radiographic images as the input data. This result indicates that radiographic images are complementary with respect to KOA classification, and the use of data can improve the accuracy of the automated diagnosis of multiclass KOA

Project Details:
Our model Kellgren - lawrence (KL) scoring agrees with a committee of musculoskeletal Radiologists as closely as the individual musculoskeletal radiologists agree themselves. Our model detects the presence of radiographic osteoarthritis (KL $\geq$ 2) as accurately as musculoskeletal radiologists and is freely available.
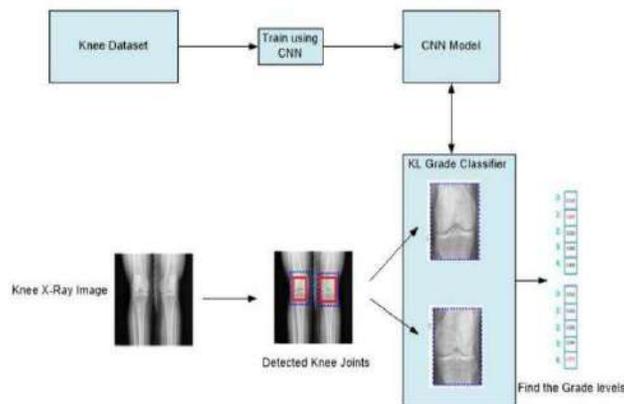
Conclusion: This work proposed a novel end-to-end architecture that incorporates trainable attention modules acting as unsupervised fine-grained ROI detectors. The proposed attention modules can be applied at different levels and scales across the CNN pipeline, helping the network to learn relevant attention patterns over the most informative parts of the image at different resolutions. The results obtained for the public knee OA datasets OAI and MOST were satisfactory despite having a considerable scope for further improvement.

Result: The automatic classification of KOA using the proposed method can reduce the work of the clinician and improve the reliability of the KL grading system.

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Title of the Project : LANDMARK RECOGNITION USING MACHINE LEARNING

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Bhavana B   Divya C

Yashaswini S M

Abstract: As smartphones and mobile data become more prevalent in modern society, the possibilities for them to interact with the physical world also grow exponentially. Technologies such as Oculus Rift and Google Glass are attempting to bridge the gap between the virtual and the physical, and as enhancements in computer speed and image processing are made, the concept of Augmented Reality(AR) becomes more tangible.

Project Details: Provide System Architecture or System Diagram.
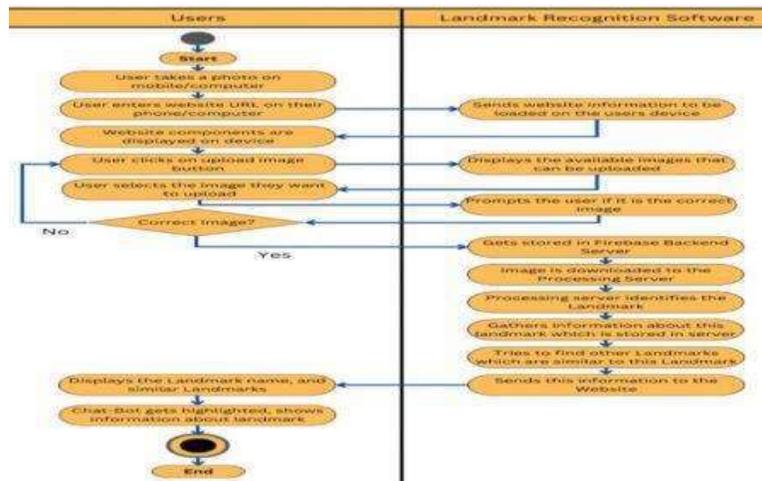
Fig: System Architecture

Result: Provide output snapshots (1 or 2)

.

Conclusion:
Landmarks can be accurately identified from an image/photograph. This is with the help of a basic image processing algorithm, classification algorithm and a recommender system. A satisfactory accuracy can be achieved with the help of existing tools and technologies present. The web-based application can now present a solution to a gap where landmark detection/recognition is missing. This can be guide in the pocket while anyone visit a place.
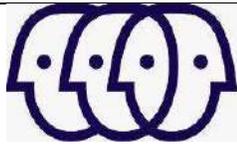
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Title of the Project : DROPSTORE: A SECURE BACKUP SYSTEM USING MULTI-CLOUD AND FOG COMPUTING

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Abstract: Data backup is essential for disaster recovery. Current cloud-based solutions offer a secure infrastructure. However, there is no guarantee of data privacy while hosting the data on a single cloud. Another solution is using Multi-Cloud technologies. Although using multiple clouds to save smaller pieces of the data can enhance data privacy, it comes at the cost of the need for the edge device to manage different accounts and manage the communication with different clouds. These drawbacks made this technology rare to use technology. In this paper, we propose Drop Store to provide an easy-to-use, highly secure, and reliable backup system using state-of-the-art Multi-Cloud and encryption techniques.

Project Details:
We are implementing this project using following modules.
- Data Delta Calculation
- Data Encryption and Compression
- Data Partitioning
- Data Redundancy
- Data Upload
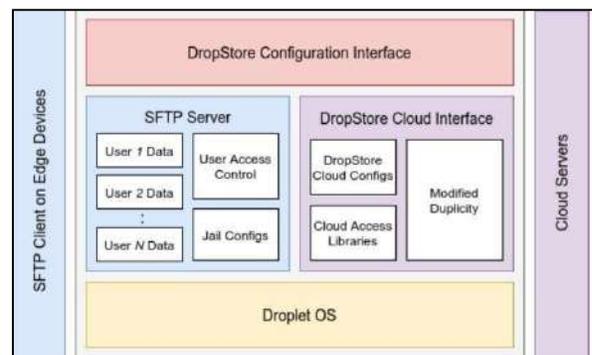
Fig : System architecture

Result and Conclusion:
We proposed DropStore, a new backup solution to tackle the problem of data security and reliability. The solution is based on Multi-Cloud and Fog Computing paradigms. Data security and user privacy are maintained by encryption and data partitioning on Multi-Cloud Storage. The solution abstracts the individual users from the system complications and improves the backup experience by utilizing Fog Computing advantages. We have built the system and ran many experiments on real-world scenarios.
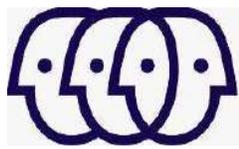
Title of the Project : SMART IRRIGATION USING IOT

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Abstract: In this work we use drip irrigation where the water was allowed to drip slowly to the roots of plant either from above the soil surface or buried into the surface so that the water can be placed directly into the root zone and minimize evaporation. It uses temperature sensor, soil humidity sensor to collect and monitor field information and also uses float switches to monitor ground water level through web page. When the field gets dry and ground water level falls down the motor will turn on automatically. This provides a solution for the problems in developing a smart farming system. It uses node MCU, relay and water pump.

Keywords: Soil, Rain, Sensors, IoT, Smart Irrigation.

Project Details: All the sensors i.e. moisture sensor, humidity sensor, temperature sensor, is connected to the microcontroller.5volts of power is supplied to the micro controller. From that microcontroller a relay gets the information about the percent of the moisture in the soil. If the moisture percent is low then the motor gets automatically ON and the notification is sent to the user device. Block diagram of arduino based smart irrigation system which consist of three sensors which are connected to controller and sensed values from these sensors are send to the mobile application.
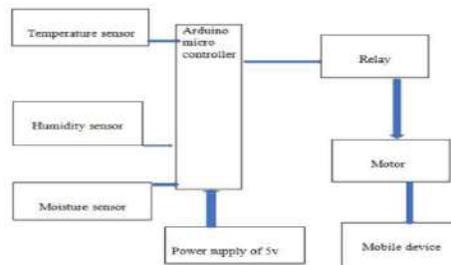
Fig:System Architecture

Result and Conclusion:
Smart irrigation technology uses weather data or soil moisture data to determine the irrigation need of the landscape. Smart irrigation technology includes: These products maximize irrigation efficiency by reducing water waste, while maintaining plant health and quality.
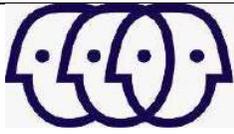
Title of the Project: A Deep Learning Ensemble Model of DenseNet and SVM for Detecting Pneumonia inChest X-Rays

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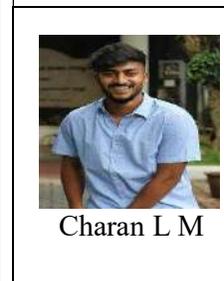
Project Details: The data collected from the Kaggle website is used to evaluate the suggested pneumonia detection system. The end results obtained are accurate that detect whether pneumonia is present or not. Proposing an automated method based on deep learning algorithm that identifies pneumonia on chest X-ray images. If a person is suffering from pneumonia, thestage of the pneumonia can be prognosticated.Our study will likely lead to the development of better algorithms for detecting Pneumonia.

Fig 1 : System Design

Conclusion: Pneumonia can be cured with early diagnosis and treatment but there is a shortage of qualified radiologist who can detectpneumonia with chest X-rays.It is linked to a high prevalence and mortality rate. It has a high mortality rate of about 25%. Various programs can be conducted for assisting doctors to diagnose pneumonia in the earlystages.In this study, we proposed using deep learningand image processing to diagnose pneumonia from chest X-rays.Many tests were undertaken with various image processing methodologies, and in the end, a highly effective pipeline was constructed that obtained outstanding scores on various metrics. The augmentation approach was used to keep the model from overfitting.

Result: Pneumonia causes pleural effusion, a condition in which fluids fill the lung, causing respiratory difficulty. Early diagnosis of pneumonia is crucial to ensure curative treatment and increase survival rates.
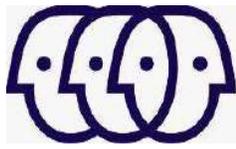
Title of the Project : EDGE-BASED CRIME ASSISTANCE SYSTEM WITH CLOUD COMPUTING & ARTIFICIAL INTELLIGENCE

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Abstract: This project aims to develop a face detection and recognition system for crime investigations, utilizing advanced machine learning algorithms. The system will process images and video footage from various sources, aiding law enforcement officials in identifying suspects or persons of interest with greater accuracy and speed. The project has the potential to contribute to a reduction in crime rates and enhance public safety and security. The system will be designed to handle large volumes of data quickly and accurately, with the ability to process images and videos captured from various sources such as CCTV cameras, mobile phones, and social media platforms. The system will be trained on a comprehensive dataset of faces to ensure high accuracy in detection and recognition

Project Details:
The project aims to develop a face detection and recognition system to support crime investigations. The system will utilize advanced machine learning algorithms to automatically detect and recognize faces in images and video footage.
The primary objective of this project is to provide law enforcement officials with a powerful tool to help identify suspects or persons of interest in criminal investigations.
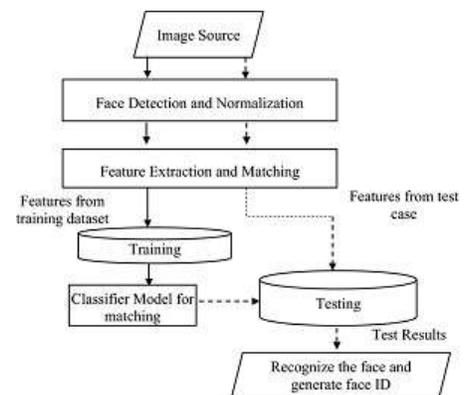
Result and Conclusion:
In conclusion, the development of a face detection and recognition system for crime investigations is a promising initiative with several potential benefits. By utilizing advanced machine learning algorithms, the system can aid law enforcement officials in identifying suspects and prevent future crimes. This underscores the importance of continued investment in research and development to harness the potential of technology to address societal challenges and contribute to a safer society for all.

Title of the Project : Leaf Disease Detection Using CNN

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Abstract: Agriculture is a very significant field for increasing population over the world to meet the basic needs of food. Meanwhile, nutrition and the world economy depend on the growth of grains and vegetables. Many farmers are cultivating in remote areas of the world with the lack of accurate knowledge and disease detection, however, they rely on manual observation on grains and vegetables, as a result, they are suffering from a great loss. Digital farming practices can be an interesting solution for easily and quickly detecting plant diseases. To address such issues, this paper proposes plants leaf disease detection and preventive measures technique in the agricultural field using image processing and well-known convolutional neural network (CNN) models such as Resnet. The experimental results elicit the efficiency of the proposed approach where it achieves the overall 97% accuracy of Resnet and the overall accuracy 96.5% for the classification of healthy-unhealthy leaf and leaf diseases, respectively. Finally, a graphical layout is also demonstrated to provide a preventive measures technique for the detected leaf diseases and to acquire a rich awareness about plant health.

Project Details: When the leaf is uploaded, the system detects whether disease is present or not. If disease is detected the system also predicts the name of the disease, cause for the disease and preventive measures to be taken to avoid the further damage to the crop.
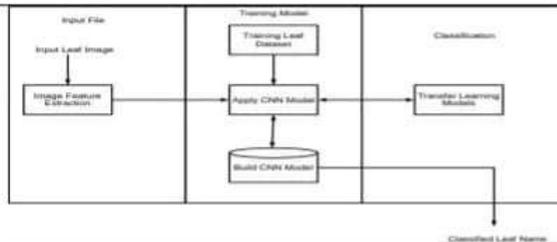
Result:

Conclusion: Has suggested a significant diagnostic approach of different leaf diseases with graphical layout of preventive measures using image processing and CNN. Image processing technique is performed on Kaggle datasets of leaves through the operation of data pre-processing, augmentation and data extraction to investigate the symptoms of unhealthy leaf. Moreover, this framework classifies the processed leaf images into tomato early blight and tomato late blight and many more using ResNet architectures. In addition, this paper analysis the overall classification accuracy of leaf diseases. For which, this approach achieves the better accuracy of ResNet model.
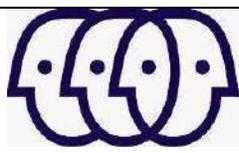
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Title of the Project : SMART AGRICULTURE USING DEEP LEARNING

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P.Sudheer Kumar Raju   P.Anil kumar

Abstract: The practice of cultivating the soil, producing and keeping livestock is referred to as farming Agriculture is critical to a country's economic development.

➢ Farmers till date had adopted conventional farming techniques. These techniques were not precis thus reduced the productivity and consumed a lot of time.

Project Details:
We are implementing this project using following modules.
1. Data collection
2. Data Preprocessing and feature extraction
3. Building Training the Model
4. Caption Generation and voice output.
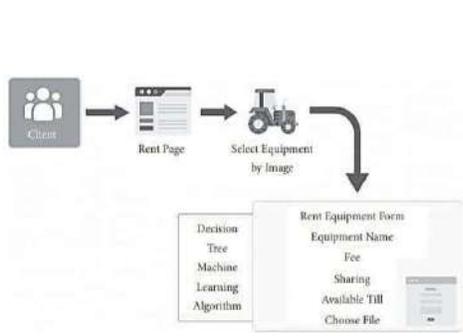
Figure: System Diagram
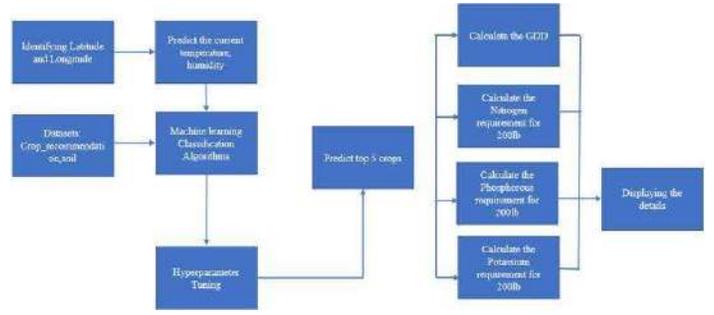
Figure: System Architecture

Result: In order to analyze the data, the farmers are divided into three types: small, moderate, and large. Of the total 562 farmers, 377 farmers fall under the type of small farmers; 179 fall under the type of moderate, and 6 farmers fall under the large farmers type. .

Conclusion:
All the crops are prone to insects. Hence identifying the correct insect and recommending the pesticides for the same would be an efficient tool. Many farmers are unable to estimate the cost of cultivation.
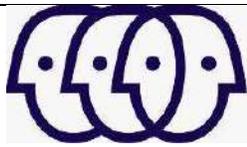
Title of the Project : Rainfall Prediction Using Machine Learning Algorithms for the Various Ecological Zones of Ghana

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| Shalini S | Sumitha G |

Abstract: Accurate rainfall prediction has become very complicated in recent times due to climate change and variability. The efficiency of classification algorithms in rainfall prediction has flourished. The study contributes to using various classification algorithms for rainfall prediction in the different ecological zones of Ghana. The classification algorithms include Decision Tree (DT), Random Forest (RF), Multilayer Perceptron (MLP), Extreme Gradient Boosting (XGB) and K-Nearest Neighbour (KNN). The dataset, consisting of various climatic attributes, was sourced from the Ghana Meteorological Agency spanning 1980 – 2019.

Project Details: Tools: Anaconda, Front-end: HTML &CSS, Back-end: Flask.
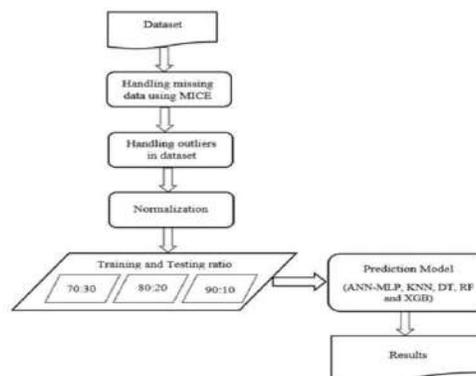
System Architecture

Result andConclusion: This project represented the Deep Learning Approach for predicting the rainfall by using the Multilayer Perceptron and Auto -encoder Neural Network. Comparing the present architecture with other state approaches. The results intend that in terms of MSE and RMSE, our proposed architecture outperforms remaining approaches. The accuracy can be measured by the MSE and RMSE comparing with the other models. In circumstances of water resource and management, human being life and the climate they possess, precipitation prediction is of huge importance
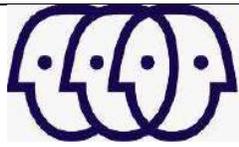
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Department of Information Science and Engineering
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Title of the Project : Virtual Friendly Device For Women Security

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Abstract: Crimes against women is becoming a daily routine in our country, nowadays. An increased demand persists in developing safety devices for ensuring safe and secure environment for women. The main aim is to develop a "Virtual Friendly" device, to safeguard themselves while in trouble. The proposed system developed consists of GPS, GSM modem, Microcontroller (LPC812), RF transceiver, Temperature Sensor, Voice Recognizer. GPS Receiver gets the location information from satellites in the form of latitude and longitude. The Microcontroller processes this information and this processed information is sent to the POLICE control room. The temperature sensor senses the body temperature continuously. SMS alert will be sent in case of low temperature which indicates emergency condition. The system can be activated by the user by themselves, when they are in need of self-defense.

Project Details:

The block diagram explains about the transmission part of the wearable safety device. When Switch 1 is ON, the RF Transmitter transmits signal to the GPS and GSM Modem. When Switch 2 is ON the RF Transmitter transmits signal to alarm. The temperature sensor sense the temperature continuously, when it reaches below threshold, RF transmitter transmits signal to the GPS and GSM modem. When voice recognizer recognize the code RF transmitter transmits the signal to the GPS and GSM modem.
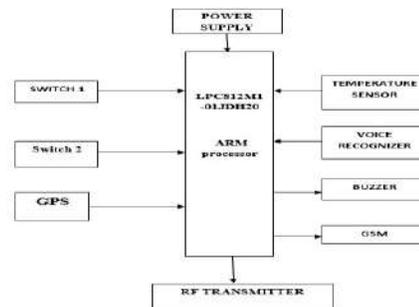
Result:

Conclusion: The objective of devising the women safety and security system is proposed and designed in this paper. By using the alert device with self-defense mechanism of women will certainly reduce the harassment rate. These crimes should be brought to an end with the help of our proposed system. As a future work, using face detection by biometrics, the attacker face could be detected and transmitted for further act. Finally, an auto call facility could also be incorporated, which makes the device as the best one in the domestic market.

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Title of the Project : "Optimization of Hadoop Map Reduce in Cloud Computing"

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Yashwanth R   Naveen Kumar Reddy

Abstract: Hadoop distributed file system (HDFS) is undoubtedly the most popular framework for storing and processing large amount of data on clusters of machines.Although of practices have been proposed for improving the processing efficiency and resource utilization, traditional HDFS still suffers .we attempt to address this problem by developing a memory-based Hadoop framework called MHDFS. Firstly, a strategyfor allocating and configuring reasonable memory resourcesfor MHDFS.

Project Details: The proposed architecture of Improvised Hadoop model; here the execution process runs through the JVM. Moreover in the proposed architecture the all task (map/reduce task) process inside the execution process and on the particular JVM, this is the main key difference between the traditional Hadoop and proposed Hadoop model. Proposed Hadoop model has three phase similar to the Hadoop i.e. MSR (Map Shuffle and Reduce) Phase.
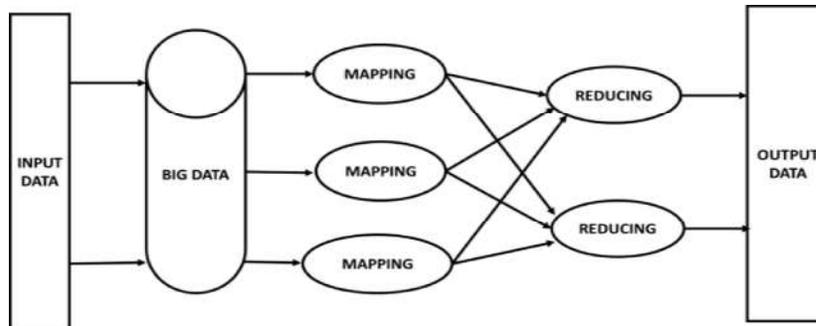
Result and conclusion : we proposed an Optimized HPMR Model, this modelachieve the balance between the Input/ Output system and CPU, itmaximizes the utilization of memory model. Moreover, Optimized Hadoop model is compared against the Improved HP model. Our model takes the less time to process the data when compared with the Improved HP model and possess the 30% optimization.
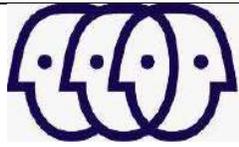
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Title of the Project : Fake Job Post Detection Using Machine Learning Approach

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N Amritha	Pragati M
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Abstract: In recent years, due to advancement in modern technology and social communication, advertising new job posts has become very common issue in the present world. So, fake job posting prediction task is going to be a great concern for all. Like many other classification tasks, fake job posing prediction leaves a lot of challenges to face. This project proposed to use different machine learning techniques and classification algorithm like KNN, decision tree, support vector machine, naive bayes classifier, random forest classifier, multilayer perceptron and deep neural network to predict a job post if it is real or fraudulent. Deep neural network as a classifier, performs great for this classification task. We have used three dense layers for this deep neural network classifier. The trained classifier shows approximately 98% classification accuracy (DNN) to predict a fraudulent job post.

Project Details:
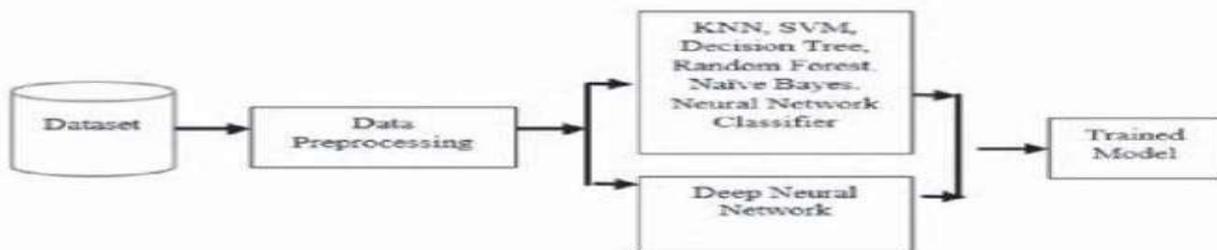
In our proposed model we are using dataset system which will perform preprocessing and apply various algorithm to train the model to predict the fake jobs.

Result and Conclusion: We are planning to build a web application using python flask framework to demonstrate the project proposes an efficient fake job post detection.

Employment scam detection will guide job-seekers to get only legitimate offers from companies. For tackling employment scam detection, several machine learning algorithms are proposed as countermeasures in this paper. Supervised mechanism is used to exemplify the use of several classifiers for employment scam detection. Experimental results indicate that Random Forest classifier outperforms over its peer classification tool. The proposed approach achieved accuracy 98.27% which is much higher than the existing methods.
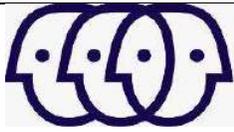
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Title of the Project : Iot based anti-poaching alarm system for trees in forest using solar power

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Guide Name: Dr. Lingaraju G M

Manish P	S Karthik Reddy
Suhil D	Yashwanth S M

Abstract: Nowadays there are numerous occurrences about pirating of trees like Sandal, Sagwan and so forth. These trees are expensive and pitiful. They are utilized in the medicinal sciences, beautifying agents. To limit their sneaking and to spare woodlands around the world some preventive estimates should be conveyed. We have built up a framework which can be utilized to limit sneaking. The structure framework utilizes three sensors tilt sensor (to recognize the tendency of tree when its being cut), temperature sensor (to identify timberland fires), sound sensor (for successful discovery of unlawful logging for example indeed, even the sounds created while chopping out the tree are additionally detected). Information created from these sensors is constantly observed with the page. As for the sensors, their yield gadgets are initiated through hand-off switch. For tilt sensor and sound sensor, a ringer is enacted and for temperature sensor a water siphon is actuated. Created information is put away in cloud Server over the Wi-Fi module. Woods authorities are advised when any occasion happens so proper move can be made.

Project Details:
Arduino is used as microcontroller and all components are interfacing with Arduino uno. By using IR sensor we can detect the object and by using temperature sensor we can measure the temperature and humidity and fire sensor is used to detect the fire and whenever fire detection on that time water pump will ON through relay and buzzer will ON.
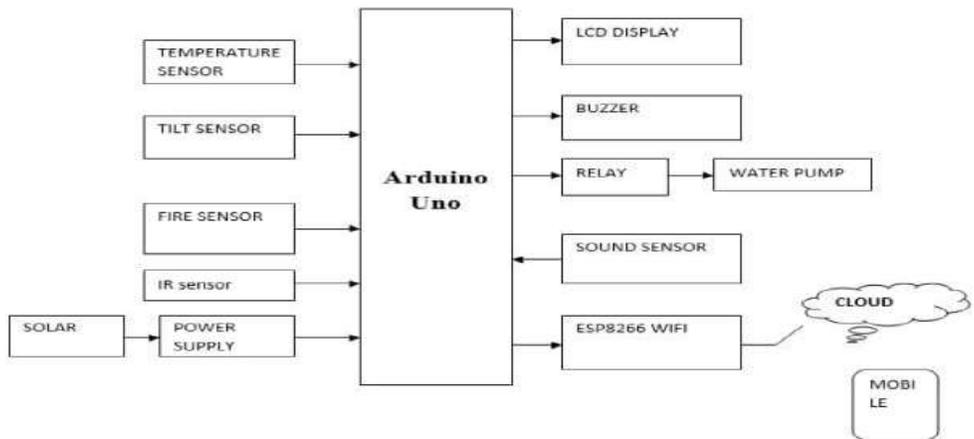
Conclusion: This undertaking presents a Microcontroller, sound sensor and IOT based WSN hub to distinguish robbery/sneaking adding to the insurance of vital and expensive types of tree. Reproductions and trial results have been contrasted with approve the proposed structure. The shared correspondence between the hub and the PC is executed here.

Result: The future extent of work is execution of Multi-hub system and fuse of mouthpiece, movement identifier sensor and temperature sensor to make frameworks increasingly powerful to obtain information such human or creature obstruction, fire location.
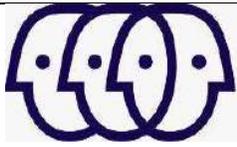
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Department of Information Science and Engineering

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Virgo Nagar, Bengaluru-560049

Title of the Project : LUNG CANCER DETECTION USING MACHINE LEARNING

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Abstract: Automatic defects detection in CT images is very important in many diagnostic and therapeutic applications. Because of high quantity data in CT images and blurred boundaries, tumour segmentation and classification is very hard. This work has introduced one automatic lung cancer detection method to increase the accuracy and yield and decrease the diagnosis time. The goal is classifying the tissues to three classes of normal, benign and malignant. In MR images, the amount of data is too much for manual interpretation and analysis.

Project Details: The method of segmentation is used in the process of medical image processing. The basic role of a picture is to differentiate between components that are beneficial and those that are harmful. As a consequence of this, it separates a picture into distinct pieces based on the degree to which each component is similar to its surrounding components. This effect may be achieved by manipulating the intensity as well as the texture. An area of interest that has been segmented may be utilized as a diagnostic tool to quickly get information that is pertinent to the issue at hand. When it comes to the process of segmenting medical pictures, the technique known as K-means clustering is the one that is used most often. During the clustering process, the picture is divided into a number of different groups, also known as clusters, which do not overlap with one another.
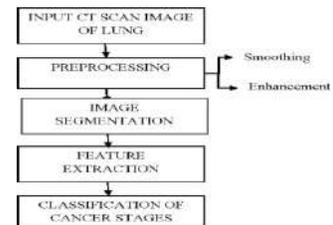
Result:

- **Conclusion:** The study carried out in this project entirely is about predicting the stage of cancer based on anyone of the features extracted. The motivation behind lung cancer identification is to help the radiologist and doctors to take an exact decision regarding the cancer stage instantly and this methodology can be used to prevent wrong predictions.
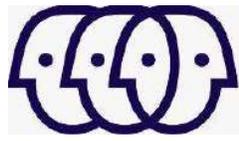
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Title of the Project : SECURE DATA TRANSFER IN CLOUD USING CRYPTOGRAPY

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Abstract: Internet isn't any longer safe to transfer sensitive info. The dependence of the individuals created the hackers to observe the network and attack for sensitive info. the info is firmly saved in our system and won't be safe after we transfer it over the web. Therefore, security is the most important factor for individuals since the evolution of hacking. Cryptography refers to secure info and communication techniques derived from mathematical ideas and a group of rule-based calculations known as algorithms, to rework messages in ways that are exhausting to decipher. Cryptography includes techniques like microdots, merging words with pictures, and alternative ways to cover info in storage or transit.

Project Details: We propose a method that provides high security. The user uploads a file into the cloud which has public and private fragments. The private fragment is supposed to be securely protected. As said before we have proposed to use the Double Encryption Technique.
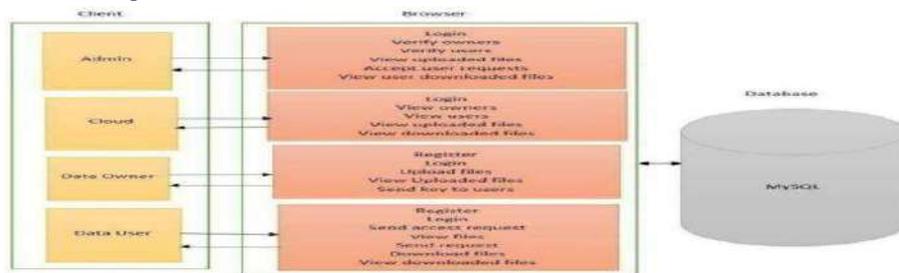
Fig.1: System Architecture

Result:

Conclusion: In this paper, we tend to propose a way to supply high information security whereas using Cloud storage services. We build use of the Double cryptography Technique to extend the protection of the file. Our technique provides high security with resistance against propagation errors.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering
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Title of the Project :"Emotion Based Music Recommendation"

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Abstract: Music plays a very important role in human's daily life. Everyone wants to listen music of their individual taste, mostly based on their mood. Users always face the task of manually browsing the music and to create a playlist based on their current mood. The proposed project is very efficient which generates a music playlist based on the current mood of users. Facial expressions are the best way of expressing ongoing mood of the person. The objective of this project is to suggest songs for users based on their mood by capturing facial expressions. Facial expressions are captured through webcam and such expressions are fed into learning algorithm which gives most probable emotion. Once the emotion is recognized, the system suggests a play-list for that emotion, thus saves a lot of time for a user.

Project Details: The emotion recognition model is trained on FER 2013 dataset. It can detect 7 emotions. The project works by getting live video feed from web cam, pass it through the model to get a prediction of emotion. Then according to the emotion predicted, the app will fetch playlist of songs from Spotify through spotify wrapper and recommend the songs by displaying them on the screen. The data consists of 48x48 pixel grayscale images of faces. The faces have been automatically registered so that the face is more or less centred and occupies about the same amount of space in each image. The task is to categorize each face based on the emotion shown in the facial expression into one of seven categories (0=Angry, 1=Disgust, 2=Fear, 3=Happy, 4=Sad, 5=Surprise, 6=Neutral). The training set consists of 28,709 examples and the public test set consists of 3,589 examples.
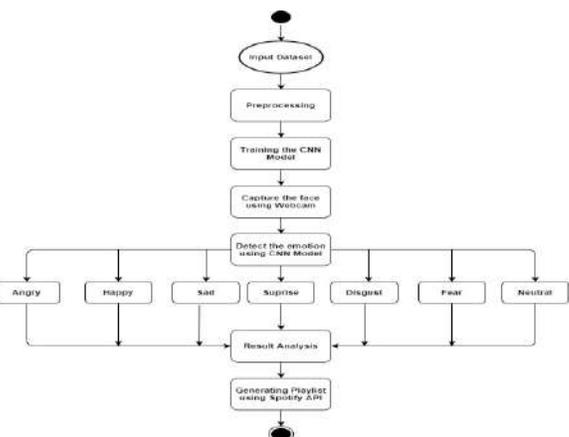
Result:

Conclusion: Emotion based music recommendation is a promising approach for personalized music recommendation.By taking into account a listeners current emotional state, the system can suggest music that is more likely to resonate with them and provide a better listening experience. Overall , an Emotion Based Music Recommendation project Could help provide a more personalized.
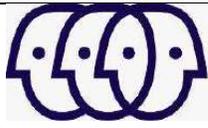
Title of the Project:AN IMAGE BASE APPROACH TO DETECTION OF FAKE COINS

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Abstract: We propose a new approach to detect fake coins using their images in this paper. A coin image is represented in the dissimilarity space, which is a vector space constructed by comparing the image with a set of prototypes. Each dimension measures the dissimilarity between the image under consideration and a prototype. In order to obtain the dissimilarity between two coin images, the local keypoints on each image are detected and described. Based on the characteristics of the coin, the matched keypoints between the two images can be identified in an efficient manner. A postprocessing procedure is further proposed to remove mismatched keypoints. Due to the limited number of fake coins in real life, one-class learning is conducted for fake coin detection, so only genuine coins are needed to train the classifier. Extensive experiments have been carried out to evaluate the proposed approach on different datasets. The impressive results have demonstrated its validity and effectiveness.

Project Details: Matlab
➢ MATLAB is a high-performance language for technical computing.
➢ It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation.

System Architeture:

➢ The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of input data to the system.

➢ A DFD may be used to represent a system at any level of abstraction. DFD may be partitioned into levels that represent increasing information flow and functional detail.

Result:
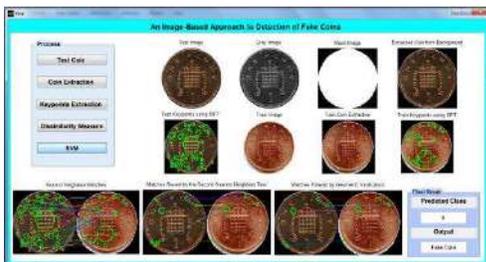
Conclusion:
A fake coin detection method exploiting the characteristicsof coin image is proposed in this paper. The coin imageis represented in the dissimilarity space, whose dimensionis determined by the number of prototypes. Each dimensioncorresponds to the dissimilarity between the coin image underconsideration and a prototype. In order to compute thedissimilarity between two coin images.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Title of the Project :DETECTION OF ACCIDENTS UNDER BAD CCTV IN TUNNELS

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Abstract: Deep learning has achieved success in the field of Computer Vision, Speech and Audio Processing, and Natural Language Processing. It has the strong learning ability that can choose up operation utilization of datasets for the feature extraction compared to usual Machine Learning Algorithm. Perception is the necessary building block for creating a deep Neural Network. The perceptron model is the more general computational model. It analyses the unsupervised data, making it a valuable tool for data analytics. The main task of this project is to develop and analyse machine learning algorithm. It begins with deep learning with perceptron and how to apply it using Tensor Flow to solve various issues in data. The main part of these projects is to make perceptron learning algorithm well behave to supports non-separable training datasets. This type of algorithm is suitable for Machine Learning, Deep Learning.

Project Details: Object detection technology has been successfully applied to find the size and position of target objects appearing on images or videos. Several applications have appeared mainly in self-driving of vehicles, CCTV monitoring and security system, cancer detection, etc. deep learning-based detection system in combination with CNN and Support Vector Machine (SVM) was developed to monitor moving vehicles on urban roads or highways by satellite. This system extracts the feature from the satellite image through CNN using the satellite image as an input value and performs the binary classification with SVM to detect the vehicle BBox.
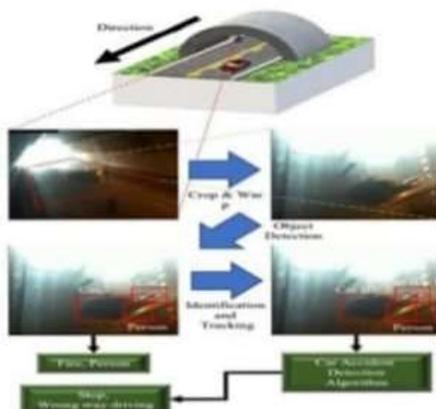
Result and Conclusion: This proposes a new process of ODTS by combining deep learning-based object detection network and tracking algorithm,On the other hand, the object detection performance is important because SORT used in ODTS object tracking uses only information of BBox without using an image.And Tunnel CCTV Accident Detection System based on ODTS was developed. The experiments on training and evaluation of deep learningOn the other hand, training of deep learning secured the object detection performance of a reliable Car object, it is also used to fields that need to monitor.
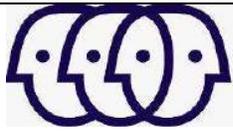
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Title of the Project: CROP YIELD PREDICTION AND EFFICIENT USE OF FERTILIZERS USING MACHINE LEARNING

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HEMANTH N   RAJSHEKHAR K

PRAKASHE   TPRAVEEN

Abstract: India is an Agriculture based economy whose most of the GDP comes from farming. The motivation of this project comes from the increasing suicide rates in farmers which may be due to low harvest in crops. Climate and other environmental changes have become a major threat in the agriculture field.

Machine learning is an essential approach for achieving practical and effective solutions for this problem. Predicting yield of the crop from historical available data like weather, soil, rainfall parameters and historic crop yield. We achieved this using the machine learning algorithm. We did a comparative study of various machine learning algorithms, i.e., ANN, K Nearest Neighbour, Random Forest, SVM and Linear Regression and chose Random Forest Algorithm which gave an accuracy of 95%. In this project a mobile application has been developed which predicts the crop yield in general and also for a particular crop. Along with that, it also suggests the user if it is the right time to use the fertilizer or not.

Project Details:

This Project Predicting the crop yield in advance of its harvest would help the policymakers and farmers for taking appropriate measures for marketing and storage. This project will help farmers to know the yield of their crop before cultivating onto the agricultural field.

ARCHITECTURE
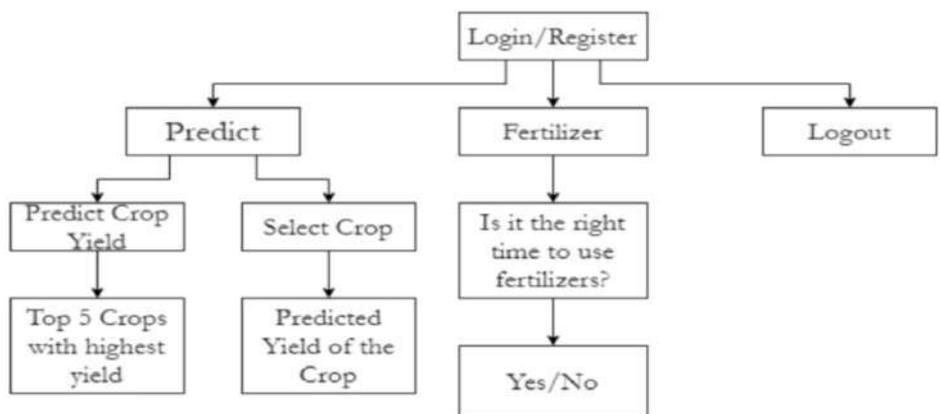
Result: By taking into account several variables, machine learning algorithms can help farmers decide which crop to grow in addition to increase yield

Conclusion: This system is proposed to deal with the increasing rate of farmer suicides and to help them to grow financially stronger. The Crop Recommender system helps the farmers to predict the yield of a given crop and also helps them to decide which crop to grow. Moreover, it also tells the user the right time to use the fertiliser.
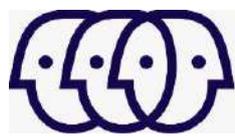
Title of the Project : Deep Learning Based Human Body Detection, 3d Motion Capture, Virtual Gaming with Body Gestures

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Akash K V   Aman Mishra B   Manoj L

Abstract: Human body estimation aims to locate the human body parts and build human body representation (e.g., palm, face, body, skeleton, etc.) from input data such as images and videos. It has drawn increasing attention during the past decade and has been utilized in a wide range of applications including human-computer interaction, motion analysis, augmented reality, and virtual reality. Although the recently developed deep learning-based solutions have achieved high performance in human pose estimation, there still remain challenges due to insufficient training data, depth ambiguities, and occlusion, human pose estimation can be defined as the computer vision techniques that predict the location of various human key points (joints and landmarks) such as elbows, knees, neck, shoulder, chest etc. We've seen in movies or games, 3d graphics character's physical movement is like real humans or animals. By tracking the human pose, the 3d rendered graphics can be animated by the human's movement.

Project Details: For the purpose of detection of human body, the MediaPipe framework is used, and OpenCV library is used for computer vision. The algorithm makes use of the machine learning concepts to track and recognize the body gestures.
We are implementing this project using following modules:
Graphical User Interface, Human Computer Interaction, Motion History Images, Integrated Development Environment, Open-Source Computer Vision, Natural User Interface, Mediapipe
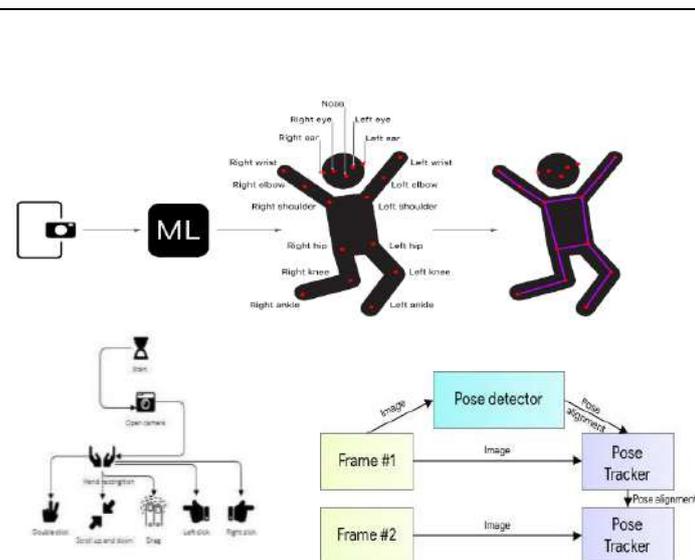
Fig: System Architecture

Result: Human body estimation from video or a real-time full-body gesture control, quantifying physical exercise, and sign language recognition. It finds its major part in augmented reality. Media Pipe Pose is a framework for high-fidelity body pose tracking, which takes input from RGB video frames and infers 33 3D landmarks on the whole human. Current state-of-the-art approach methods rely primarily on powerful desktop environments for inferencing, whereas this method outperforms other methods and achieves very good results in real-time.

Conclusion: With pose estimation, we're able to track humans' motion and activity in real-world space. This opens up a wide range of application possibilities. It is a powerful technology that helps to build complex applications very effectively. Virtual reality (VR) gaming is very popular. In virtual reality gaming, a 3D pose is estimated by one or more cameras, and the game character moves according to the human's action. To train the movement of a robot, human pose estimation can be used. Instead of manually programming a robot to follow a certain path, a human pose skeleton is used to train the robot's joint movement.

Department of Mechanical Engineering

Department of Mechanical Engineering was established in 1999. The Department offers BE program in Mechanical Engineering with an intake of 60 students. It also offers M. Tech. Program in Product Design and Manufacturing with an intake of 18 students. The Department has established a Research Centre recognized by VTU. Twelve Research Scholars have been awarded Ph.D. Degree from VTU through this Research Centre and around 17 scholars are pursuing Ph.D. program at present.

 The Department of Mechanical Engineering has a good team of dynamic, well-qualified, and experienced faculty members. A few faculty members carry significant Industry experience. There are a significant number of technical staff to assist members of faculty and students in their academic activities. The department regularly organizes workshops, seminars, project exhibitions, student paper presentations, etc. apart from organizing the conferences and seminars. Students are encouraged to carry out the project in various companies like ISRO, HAL, ADA, MICO, IISC, etc., the students also participate and get sponsorship from KSCST, VGST, VTU, etc., for their project work. The Department conducts competency and skill development, Life skill development, and Innovation and entrepreneurship development courses for the staff and students on a regular basis.

To rejuvenate the mechanical engineering program, the department is offering newer courses in the areas of Artificial Intelligence, Machine Learning, Data Science, IoT, Virtual Reality and Augmented Reality, 3D printing, electric vehicles, autonomous vehicles, Robotics as applied to mechanical engineering. These courses are being offered as value-added courses as they may not find a place in our regular curriculum. In the Laboratories students are trained on simulation-based courses like FEM, CFD, Matlab Simulations, Kinematic, and Dynamics to keep the students abreast of present-day industrial requirements.

Vision

The Department of Computer Science and Engineering aspires to be a globally acclaimed centre for engineering education and research in Computer Science and fosters academic and career success through holistic development.

Mission
M1. To be committed to innovation, creativity, and excellence in our teaching, learning, and research.
M2: To inspire integrity, teamwork, critical thinking, personal development, and ethics in our students and lay the foundation for lifelong learning.
M3: To serve the technical, scientific, economic, and societal developmental needs of our communities

Title of the Project : **Design and Fabrication of Earth Auger**

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Fibin T Baby   Marc Nitin E

Bharath Kumar   chennaKeashavReddy GV

Abstract: The use of technology in agriculture has improved productivity in India. However, it has also resulted in a surge of traumatic injuries and musculoskeletal disorders among agricultural workers. Agricultural work-related accidents are currently higher than in any other industry in the world.
To mitigate this issue, a low-cost, single-person operated auger has been proposed to provide a safer alternative for farmers during planting and other activities.

Project Details: A motorized earth auger that is easy to transport, and can be easily assembled on the drilling site. an earth auger that can be easily handled by labourers that pose minimal injuries during operation.

Conclusion: Ease in transportation-For easy transportation of developed Earth Auger in field, a wheel pair tyres with axles were provided by considering ground clearance and C.G of the machine. Comfort of operator-Improvements in operators'comfort during operation is done. Stability during operation-For minimizing vibrations supporting frame or trolley and wheel pair of were provided. So that during operation they would support the machine, maintain the stability and minimize vibrations.Safety of operator-Improvements to ensure operators safety are installed themodified Earth auger, such as frame for increased stability during drilling
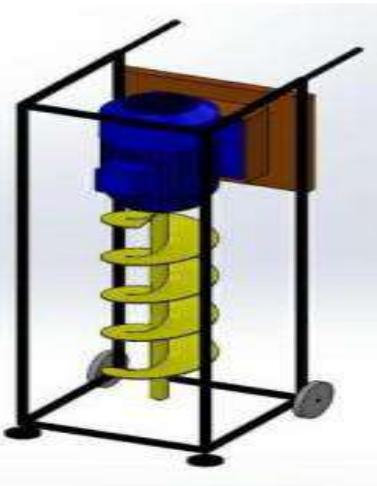
Design of Earth Auger   **Drill Bit**
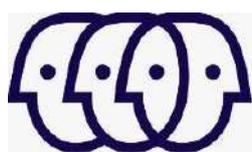
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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

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Virgo Nagar, Bengaluru-560049

Title of the Project : Removal of Fungicide Residues From Surface Water Using Cost Effective Bio-Adsorbents

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Dept. of Mechanical Engineering,
East Point College of Engineering and Technology.

Akash R Hosalli	Basappa C B
Madhu R	Raghavendra S P

Abstract: The bio-adsorbents were synthesized from agricultural waste materials such as rice husks, sugarcane bagasse, and coconut shells, which were treated with alkali to enhance their adsorption capacity. The synthesized bio-adsorbents were characterized using various analytical techniques, including FTIR, SEM, and BET.

The effectiveness of the bio-adsorbents in removing fungicide residues from surface water was evaluated using batch experiments. The results indicated that the bio-adsorbents were highly efficient in removing fungicide residues from water, with removal efficiency ranging from 75-98% depending on the adsorbent used.

Project Details: One way to remove fungicide residues from surface water is by using bio-adsorbents, which are cost-effective and environmentally friendly materials that can adsorb pollutants from water. Bio-adsorbents are natural materials derived from plant or animal sources that have the ability to adsorb contaminants through physical or chemical interactions. The use of bio-adsorbents is a promising technology for removing fungicide residues from surface water because of their low cost, high efficiency, and ease of preparation.

Methodology: The tamarind seed shells will be dried at 80 °C until constant mass. The dried tamarind seed shells will be ground and sieved with 40-60 mesh to obtain the desired particle size. Then the particle was rinsed and soaked in deionized water until the water is colourless and dried at 60 °C until constant mass. The tamarind seed shell powder stored in a desiccator until use.

Fine powder of tamarind seeds shells are modified with didodecyldimethylammonium bromide (DDAB) in Na2SO4 with NaOH solution.

Triazole based fungicide recovered in surface water by modified tamarind seeds shell powder by micro-extraction method.

Expected Outcome: The main outcome the proposal is to save the lives of lakhs of farmers by removing toxic triazole based fungicides in surface water, by using fine powder of modified tamarind shells.

Due to low cost and high absorption capacity of modified tamarind seeds shell powder, absorbs triazole based fungicide more efficiently from surface water.

The traizole based fungicides in surface water removed effectively by micro-extraction method.

Conclusion: Bio-adsorption is an efficient and cost-effective method for the removal of fungicides from surface water. The use of agricultural waste-based adsorbents, chitosan-based adsorbents, microorganisms, and activated carbon-based adsorbents are effective methods for the removal of fungicides from water. However, further research is required to optimize the conditions for the bio-adsorption process and to develop practical applications for the removal of fungicides from water.
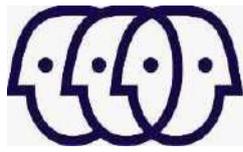
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

Approved by AICTE New Delhi | Affiliated to VTU, Belagavi, Virgo Nagar, Bengaluru - 560049

Title of the Project : "**Optimised Design structuring of boring bar for AM**"

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Mukthananda R   Shivakumar K S

Rakshith G   Harish K M

Abstract:

3D-printing has been used to create prototypes during the development phase for more than 20 years. Now, functional parts can be printed directly in specific metal powders using similar layer-by-layer techniques. The additive method is unlike traditional mass production manufacturing methods in many ways, creating new possibilities for designers to realise new and different design ideas previously impossible to manufacture. When products are mass produced, there is a desire to improve manufacturability. This is traditionally done by a designer with knowledge about certain manufacturing methods altering design choices to make it cheaper to manufacture.

Project Details: Design of EThis project aims to create a tool-holder with AM range of Kennametal tool-holders, which can replicate or or better the r traditionally manufactured one
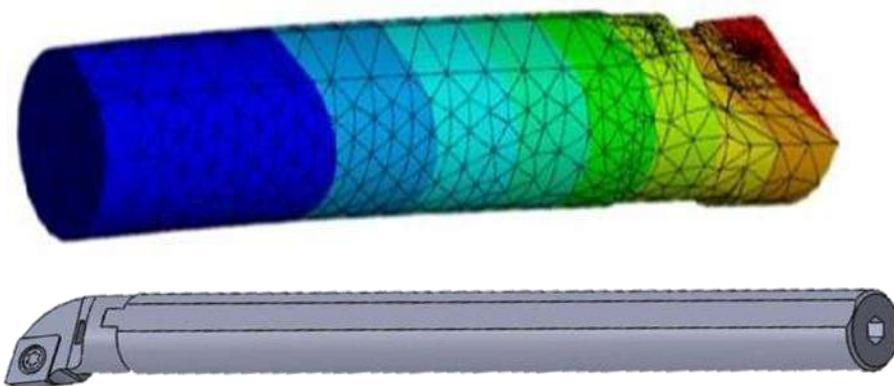
Conclusion: How to design for AM was divided into two classes, process-driven and designer-driven shape. Process-driven shape through analysis-driven, iterative processes create customer value by increased performance. Loads and dimensioning criteria together with analysis knowledge need to be known. A designer-driven design method by lattices in the manufacturing domain may also reduce volume and thus printing time and part cost. However, lattices are not easy to analyse for performance due to geometrical complexity and that the AM domain sometimes uses distorted triangles.
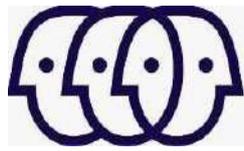
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
Virgo Nagar, Bengaluru - 560049

Title of the Project : "Design and fabrication of Forklift"

Student Names: Hemanth K   (1EP19ME005),
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Rohit N   (1EP18ME024),
Annapureddy Sudharshanreddy (1EP18ME004)

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Guide Name: Dr. S V Prakash
Professor & Head of the Dept,
Dept of Mechanical Engineering, EPCET

Hemanth K   Karthick K
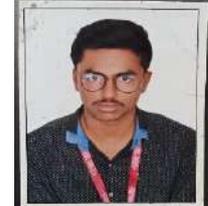
Rohith N   Annapureddy Sudharshanreddy

Abstract: Factories, industries and storage go-downs need forklifts and cranes for storage and moving goods. Also, there are number of goods weighing around 40 – 60 kilograms that are comparatively lighter but cannot be moved around easily by human labour. A forklift is a powered industrial vehicle, which enables the lifting, shifting and movement of materials from one place. The forklifts found applications at warehouses, shops and construction sites, where for the transhipment of goods.

The Fabrication of the Forklift as per the sketch of feasible dimensions, demonstration of easy assemblage and disassemble of forklift parts, demonstration of increase work rate at factory and warehouse premises and demonstration of ease of operation and maintenance of forklift are the main objectives of this present work.

Project Details: In general, the forklift can be defined as a tool capable of lifting hundreds of kilograms. A forklift is a vehicle similar to a small truck that has two metal forks on the front used to lift cargo. The forklift operator drives the forklift forward until the forks push under the cargo, and can then lift the cargo several feet in the air by operating the forks. The forks, also known as blades or tines, are usually made out of steel and can lift up to a few ton.

Result:
- To increase speed of delivery
- Adjustment of vehicle speed
- Flexibility of path
- Avoid collision with other objects
- Reduction in labour cost.
- Ability to detect the path.
- Increase safety at work
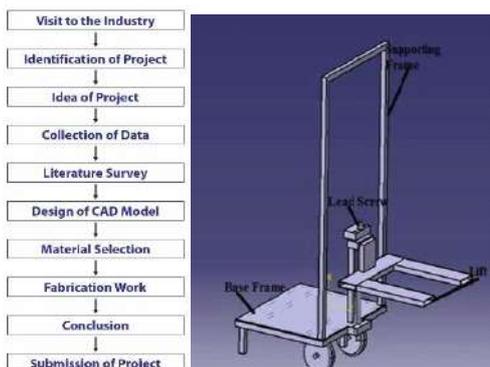
Conclusion: The development of Mechanical forklift assures the ergonomically comfort to the operator or worker and to reduces time required for manual lifting and handling. It lifts the maximum load of 100 Kg. This increases efficiency of productivity & it provide safety of operator while handling of the material. All deliverables set forth in the project proposal were successfully met. The designer initially intended the AGV to be a super-fast vehicle. Even though it could follow lines at high speeds, it occasionally missed intersections. Although the AGV had to be slowed down, it was still much faster than the ASRS, which met specifications. The forklift mechanism was not built when the platform was designed and assembled, and the original concept for the forklift failed. The limited amount of space hindered subsequent ideas for the forklift, and several different designs were prototyped before the final version was built. However, the forklift turned out very well and the wait was well worth it.
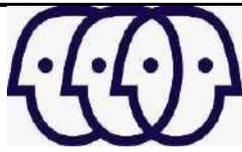
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

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Virgo Nagar, Bengaluru - 560049

Title of the Project : Roles of Additive Manufacturing in Rapid Tooling (Casting Process)

Student Names:
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Syed Himayath (1EP19ME014),
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Guide Name: Dr S V Prakash, Professor
Head of Department,
Dept of Mechanical Engineering
East Point College of Engineering and Technology

Rahul S   Srihari G

Syed Himayath   Md Danish Shariff

Abstract: The aim of this study was to describe systematically the best available evidence of Additive manufacturing (AM) technology for different casting paths and How Rapid Investment casting (RIC) is revolutionizing the field of casting. The objective of this systematic review is to investigate the capabilities and effectiveness of Additive Manufacturing to provide an effective solution for investment casting production. The conventional method of Investment Casting is less effective in terms of cost and time to develop new hard tooling wax patterns for low volume production and prototypes.

Project Details: Additive manufacturing, also known as 3D printing, is a process of creating three-dimensional objects by adding successive layers of material on top of each other. This method differs from traditional manufacturing processes, which usually involve cutting or drilling materials away to create a final shape.
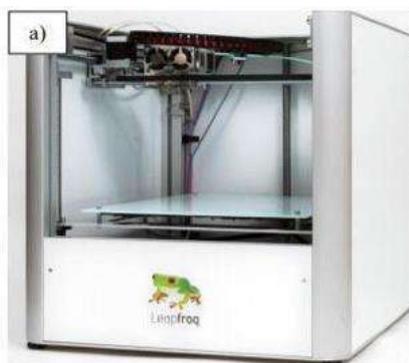
FDM Printer

Prototype

Conclusion: Additive manufacturing is a cost-efficient solution for small-batch manufacturing. 3D printing of resin patterns represents a viable alternative for the traditional manufacturing of wax patterns. It has several advantages over conventional technology, mainly faster production, cost-effective, less time-consuming, and precise, having the potential to replace in a few years the conventional technique completely. Studies have shown that resin moulds can be used to make intricate products as they provide necessary accuracy Additive manufacturing has several potential benefits and may play a significant part in the transition towards a more sustainable industrial system. It has been used successfully in many fields including casting. But the current limitations have restricted usage in specific circumstances. Hence, research in this field might open up new avenues enabling 3D printing to find applications in everyday life.

Dr. S M Venkatpathi
FOUNDER CHAIRMAN
East Point Group of Institutions
18th April 1955 - 6th December 2017

"India should create more wealth to keep the poverty at bay, for that the only answer is education, My life is to work day and night to create a great institution putting all my resources that I have at my disposal."

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EAST POINT GROUP OF INSTITUTIONS
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- East point School of Nursing
- New Royal College of Nursing
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- East Point Pre-University College (Academy Campus)
- East Point School (Academy Campus)

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BENGALURU

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- Orthopaedics
- Urology
- Cardiology
- Nephrology
- Dermatology
- Neurosurgery
- Ophthalmology

Emergency Services

- Ambulance Service
- Blood Bank
- Laboratory
- Pharmacy
- Emergency Medicine

East Point Campus

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East Point Academy

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East Point Hospital

Jnana Prabha
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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

2021 - 2022

VIBRATIONS ~ 2o22
ABSTRACTS OF STUDENTS PROJECTS

East Point College of Engineering & Technology

Jnanaprabha, Virgo Nagar Post, Avalahalli, Bengulru - 560 049

East Point College of Engineering and Technology

East Point College of Engineering and Technology (EPCET) was established in the year 1999 by M. G. Charitable Trust, Bangalore. The College is in the eastern part of Bangalore at Bidarahalli, Virgonagar Post, off old Madras Road. It is at a 5 km distance from K R Puram, Bangalore.

The College is affiliated toVisvesvaraya Technological University (VTU), Belgaum. All the undergraduate and postgraduate programs offered at EPCET have the approval of AICTE. The College at present offers programs in Artificial Intelligence and Data Science, Computer Science and Engineering, Information Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, and Civil Engineering leading to BE degree of VTU. The college is also offering three M. Tech programs- one each in Electronics and Communication, Mechanical Engineering, and Civil Engineering. At EPCET, more than 2000 students studying various programs, and there are more than 110 faculty members with about 25% of them having Ph.D. Qualification. Faculty members, in addition to teaching and routine administrative work, undertake research. A few faculty members work in collaboration with prestigious national laboratories like LRDE- DRDO and publish their research findings in well-known journals. The programs offered by the college were accredited by NBA during 2008-2011, once again the departments have applied for accreditation of their programs with the NBA. Various NEWS Papers including Times of India have ranked EPCET very high.

All the students of the final year undergo internships in reputed industries and more than 70% of the students get one or the other job placement on campus in companies like VMware, Cognizant, Infosys, Accenture, IBM, Covance, and so on. The departments offer various competency and skill development courses to prepare the students for the job market in addition to industry integrated learning programs (IILP) withCISCO, AWS, SalesForce, Google Cloud, ARM, UiPath, Microsoft, Texas Instrument A significant number of Alumni

have assumed important positions in industry and government. A few alumni have set up their own start-ups in and around Bangalore and a considerable number have settled down overseas.

The students actively participate in the intercollegiate sports activities organized by VTU and also in various intercollegiate cultural activities.

The College with a large number of classrooms, seminar halls,well-equipped laboratories, and a library with more than 50000 books is completely Wi-Fi enabled. In the laboratories, industry-standard software is made available for students to learn and practice and the college has subscribed to a large number of technical journals through a consortium approach.

The college encourages faculty members to attend seminars, conferences organized by other Colleges and industries. Also, faculty have been given the freedom to organize seminars, conferences, and faculty development programs annually. Every year at least 5-6 seminars/conferences/FDP is being conducted. A number ofseminar halls are available within the college for organizing seminars and conferences. The College has entered into MoU with a number of industries and foreign Universities.

Since the College is located on a multi-college campus, students have opportunities to interact with students ofmedical, pharmacy nursing, management, commerce, and Science. Students have transport, hostel and sports facilities. There are more than 15 students clubs for students to participate in various activities and experience.

The College has set an ambitious vision and it's working continuously to adapt newer concepts in teaching, learning, and student assessments to realize its vision through working on its mission.The College aims to increase the students' satisfaction level with a holistic approach to education.

Vision, Mission, and Objectives

Vision

The East Point College of Engineering and Technology aspires to be a globally acclaimed institution, recognized for   excellence in engineering education, applied research, and nurturing students for holistic development

Mission

Our purpose is to create engineeringgraduates through quality education. We are committed to innovation, creativity, and excellence in our teaching, learning, and research. We inspire integrity, teamwork, critical thinking, personal development, ethics in our students and lay the foundation for lifelong learning. We serve the scientific, technological, economic, and societal developmental needs of our communities

PRELUDE

East Point College of Engineering Technology is organising its annual students' projects exhibition- **"Vibration-2022"**, on 27th June 2022 at the College Premises. During the exhibition- around 100 students' projects will be exhibited. Each project is conceived and developed by a group of students consisting of 3-4 members. The projects are in the areas of Computer Science and Engineering, Information Science and Engineering, Electronics and Communication Engineering, Mechanical and Civil Engineering. However, most of the projects are multi-disciplinary in nature. Each project has a novelty, innovation and creative endeavour.

As you know, there are six learning domains. The learning domains are: Remember, Understand, apply, analyse, evaluate and create. Student during their 4 years of program would have developed the understanding of various concepts in Engineering and Technology, and working on an independent group project signifies students' ability to identify a problem, develop a solution and demonstrate the solution manifesting the students' problem solving abilities. Thus, project work phase is one of the most significant phase in engineering education.

The Book of Students Projects Abstracts provides the comprehensive summary of all the projects that are executed by our students during the academic year 2021-22.

EPCET and all its faculty express their happiness and satisfaction towards their students for this successful endeavour.

Principal, EPCET

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SL No.	PROJECT TITLE
1	Anomaly Detection system for Prevention of False Data Injection in Agriculture 4.0
2	An Efficacy Identification Of COVID-19 Patients Using Convolutional Neural Networks
3	Cloud Electronic Folio
4	Implementing Blockchain For Optimizing Electronic Health Record
5	Ayurvedic Plant Species Recognition Using Statisctical Parameters On Leaf Images
6	Sentimental Analysis On chat Application Using LSTM
7	Employee Attrition Analysis Using Machine Learning
8	Farm Assist-Analysis and Prediction Of Crop Disease Using Machine Learning
9	A Machine Learning Approach to predict Autism Spectrum Disorder
10	Preventing Phishing Emails Using Machine Learning
11	Data Consistency In Multi-Cloud Storage systems using data Placement
12	Image Classification Of Abnormal red Blood Cells Using Deep Learning
13	Detection Of Fake And Clone Accounts in Twitter
14	BlockChain Based Decentralized Social Media To Prevent False Copyright Infringement
15	Attribute Based Revocating Duplication Data Over Clod Computing In Healthcare System
16	Detecting Cyberbullied Tweets Using Machine Learning Algorithms
17	Sentimental Analysis Of Stock Market
18	Sales Prediction Of Big Mart Using Machine Learning Model
19	Gaze Based Secured Authentication System Based On Morse Code
20	Capsule Forensics: Using Capsule Networks To Detect Forged Images And Videos
21	Real Time Video Based Heart And Respiration Rate Monitoring
22	An Effective Tool For Verification Of Fake News
23	Identifying And Localizing The Trees Using Gaze Matching And Opencv
24	Bone Fracture Detection And Classification Using Deep CNN
25	Deep Learning For The Detection Of Deepfakes
26	Customer Churn Analysis In Telecom Sector Using Machine Learning
27	Typical And Non-Typical Prediction Of Diabetes Using Adaboost Algorithm
28	Detection And Classification Of Alzheimer's Disease Using Deep Learning Approach
29	Network Intrusion Detection Using Ensemble Based Classifier With Feature Selection
30	Gravitational Wave Observation Simulation For Pulsars Identification
31	Clustering Of Credit Card Customers Using Machine Learning
32	Predictive Analysis Of Drugs For COVID-19
33	Fake Currency Detection Using Image Processing
34	A Machine Learning Approach For Human Gender Classification Using Facial Recognition
35	A Machine Learning Approach For Early Detection And Analysis Of Schizophrenia Using fMRI

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SL No.	PROJECT TITLE
36	Smart Digital Clock Display
37	AI Based Smart Door With Face Mask Detection
38	IOT Based System For Mask Detection And Temperature Sensing
39	Design And Development Of Frequency Reconfigurable Multi band Compact Antenna Using Switchable Elements For Wireless And Application
40	Artificial Intellegence Based Autonomous vaccum Cleaner With Disinfection System
41	ESP8266 Based Smart Kitchen With Automatic Monitoring System Using Web Server
42	Design Of a fuzzy Controller for a Hydraulic Transplating Robot
43	Crop Monitoring System Using IOT
44	Charging station For E-Vehicle Using Solar With IOT
45	IOT Based Medicine Recognition System For Elderly
46	IOT Based ATM Monitoring Using Cloud Data And Sensors
47	Secured IOT Based COVID Patient Monitoring
48	Low-Cost Mechanical Ventilator With Patient Monitoring
49	Smart Agriculture System Using Image Processing
50	Safe Cloud Based Face Recognition Attendance System Beneficial During Pandemic(With Temperature And Mask Check)
51	Smart Parking System Using IOT
52	Laser Light Security System Using Arduino
53	Internet Of Things And GSM Based Smart Medicine Box
54	Voice Assisted Smart Vehicle
55	Solar Based Agricultural Robot

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

SL No.	PROJECT TITLE
56	Automated Bus Cloud Management
57	Personal Git Server
58	Automatic Railway Crossing
59	Car Crash Notification And Alerting System
60	Sign Language Detection
61	IOT Based Air Pollution Measuring System
62	Flipkart Clone Using Web Development
63	Employee Retention Analysis Using ML
64	Vehicle Speed Sensing And Smoke Detecting With IOT

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65	Forest Fire Area Prediction Using Machine Learning
66	Suraksha System
67	Smart Attendance System With RFID And Face Recognition
68	Face Mask Detection Using Machine Learning Techniques
69	Churn Analysis In Telecom Sector Using Machine Learning
70	Hand Written Recognition And Language Translation
71	Virtual Doctor Chatbot Using Machine Learning
72	Clustering Of Credit Card Customers Using ML

DEPARTMENT OF CIVIL ENGINEERING

SL No.	PROJECT TITLE
73	An Experimental Study On Multistage And Single Stage Orifice Plates For Performance Improvement
74	Rapid Determination On Moisture Content Of Soil Using Microwave Oven
75	Study On Geo Polymer Tiles Using Industrial waste Materials-An Eco-friendly Approach
76	Study On EPCET as Smart Campus
77	Comparative Study On Reinforced Concrete Beam Using Ansys
78	An Experimental Study On Strength And Durability of Concrete By Partial Replacement Of Fine Aggregate with Sawdust
79	Sustainable Geopolymer Based Previous Concrete For Pavements
80	Utilization Of waste Plastic In Manufacturing Of Bricks
81	Planning, Designing And Detailing Of Multi-Specialty Hospital
82	Design Of Flexible Pavements For Low Volume Rural Roads

DEPARTMENT OF MECHANICAL ENGINEERING

SL No.	PROJECT TITLE
83	Plant Leaf Disease Detection
84	MultiPurpose Agriculture Machine
85	Real Time Object Detection
86	IOT Based Smart Vehicle Parking
87	Fabrication Of Manually Operated Paddy Transplanter
88	Roller Skates
89	Bio Mass Gasifier
90	Artificial Intelligence Healthcare Chatbot System
91	Study On Mechanical Properties Of AI 2014 Reinfored Silicon Metal

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

SL No.	PROJECT TITLE
92	Design Of Battery Integrated PV Charging Station For Electric Vehicles
93	Design And Implementation Of Neural Network Based PV System For Micro grid Applications
94	Grid Interconnection Of High Step-Up DC to AC Convertor With Renewable Source Integration With Resonant Switched Capacitor
95	Detection Of False In Power Transmission Lines Using Fuzzy Logic Techniques
96	Energy Conservation Through Energy Audit
97	Design And Implementation Of Fuzzy PID Controller For Speed Control In BLDC Motor

Department of Computer Science and Engineering

Computer Science and Engineering Department was established in the year 1999 with an intake of 120 students and is affiliated to Visveswaraya Technological University (VTU), Belgavi. The Department is crafted globally competent future workforce for IT industry and also make students ready for further education and seek research opportunities in reputed industry and academia. These twofold objectives are accomplished by optimal mix of fundamental subjects, lab session and online courses from NPTEL & Industry Integrated learning programs. The students will build specialist knowledge in different emerging technologies with the flexibility to follow their interest through the choice of Industry Integrated Learning Programs and get certified from companies through proctored exams. Staff and students of the Department are actively involved in various research activities. These research activities have been successful in attracting funding from university.

Vision

The Department of Computer Science and Engineering aspires to be a globally acclaimed centre for engineering education and research in Computer Science and fosters academic and career success through holistic development.

Mission

Our purpose at the department is to create graduates in computer science and engineering we are committed to innovation, creativity and excellence in our teaching, learning and research. We inspire integrity, teamwork, critical thinking, personal development and ethics in our students and lay the foundation for lifelong learning. We serve the scientific, technological, economic and societal developmental needs of our communities.
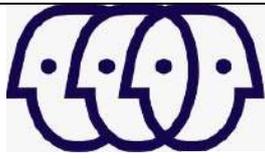
EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
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Title of the Project: "Anomaly Detection System for Prevention of False Data Injection in Agriculture 4.0 "

Student Names:
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Guide Name: Dr. C Emilin Shyni

Adriano Jose   Girish Kumar R

Janvee Dixit   Motati Devnath Reddy

Abstract: Agriculture 4.0 integrates a set of technologies, devices, protocols, and computational paradigms to improve agricultural processes. However, it is still emerging and has a low level of security features. The intent of this project was to develop an Anomaly Detection System in order to prevent the injection of false and inaccurate data coming from malfunctioning sensors. This will help aid in the process of acquiring accurate data from the sensors, as this data is needed to optimize cultivation land and grow crops efficiently. Using this system, the farmer will be alerted about the exact malfunctioning or malicious sensor, allowing the farmer to fix or replace the sensor sending inaccurate data.

Project Details: An loT board, with humidity, temperature and soil moisture sensors connected to it, forms the sensor portion of the system. Data can be retrieved from the sensor using the REST API hosted on the NodeMCU board. GUI of the application was developed using PyQt5, with MySQL database integration, Isolation Forest Algorithm for anomaly detection, and Twilio for sending notifications.
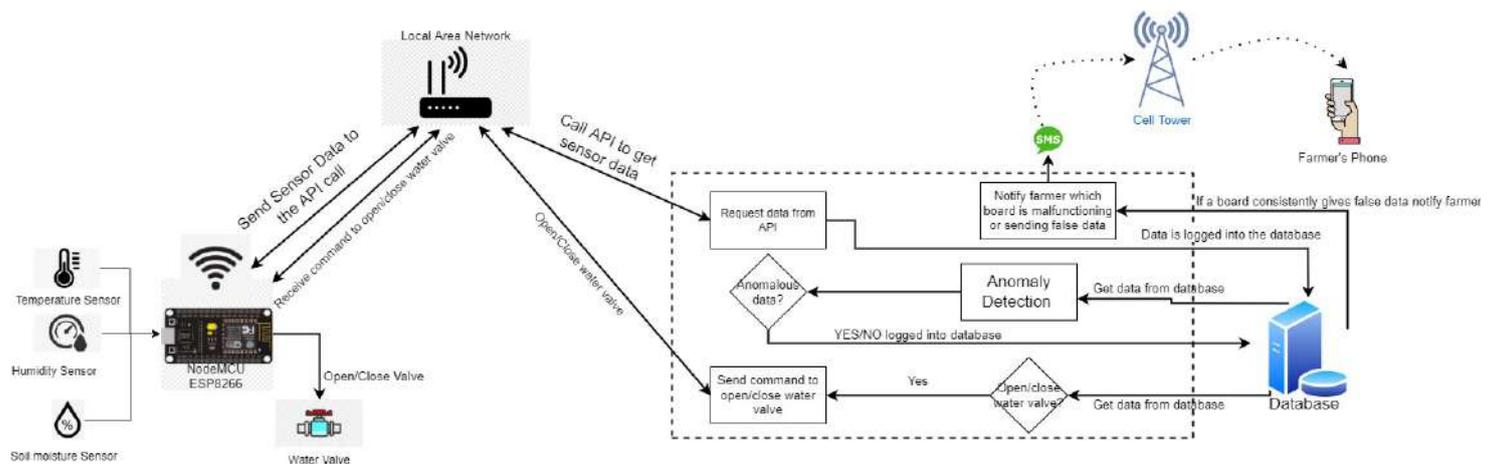
Result and Conclusion: Agriculture 4.0 is focused on making good use of the resources available and getting better yields with the help of sensors, actuators, and farm management systems. With the expansion of the farming system into the digital era, there is the risk of cyber-attacks from malicious parties or malfunctions causing system failures. The system monitors the incoming data, and if it is false data, it flags it. This helps prevent inaccurate data from being used by other application which depends on the farm sensor data. The goal of this system is to contribute to the development of secure and robust systems for Agriculture 4.0, where sensor data integrity is crucial.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering
Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
Virgo Nagar, Bengaluru-560049

Title of the Project: "An Efficacy Identification Of Covid 19 Patients Using Convolutional Neural Networks "

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Guide Name: Dr.I. Manimozhi

Deekshith M   Chandan P A

Amrutha Kumari U   Alfreda Gama

Abstract: The coronavirus disease 2019 (COVID-19) has quickly become a global threat to public health, and it is difficult to predict severe patients and their prognosis. Fast, reliable, and early clinical assessment of the severity of the disease can help in allocating and prioritizing resources to reduce mortality. Here, we intend to develop effective a Nomogram model for the early identification of patients at disease progression and outcome. We first developed a nomogram for disease severity discrimination, then created a prognostic nomogram for severe patients, good performance in estimating the risk of progression. This nomogram model is useful to early identify.

Project Details: The proposed project has been implemented using Spyder, is a free and open source scientific environment written in Python, for Python, and designed by and for scientists, engineers and data analysts. The system architecture is as shown below.
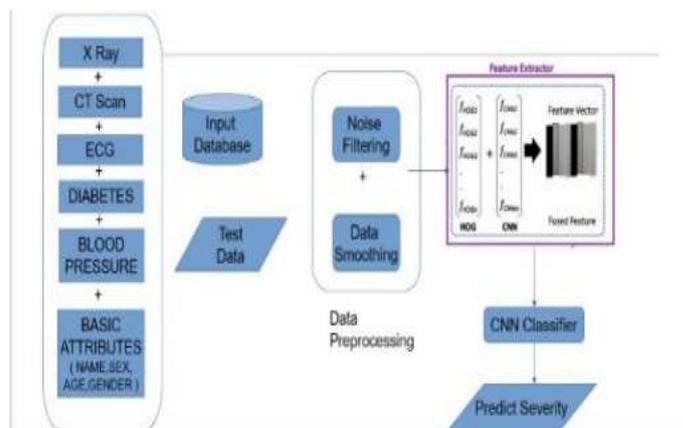
Result and Conclusion: This model can be used, among other considerations, to prioritize testing for COVID-19 when testing resources are limited. The methodology presented in this study may benefit the health system response to future epidemic waves of this disease and of other respiratory viruses in general. This system can be effectively used for diagnosis of Covid-19 Patients and give the best treatment based on their medical factors compared to other systems. This system also saves the time required to diagnose covid-10.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering
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Virgo Nagar, Bengaluru-560049

Title of the Project : " Cloud Electronic Folio"

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Manoj Babu G R

Anusha S

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Abstract : Cloud Electronic Folio" is a cloud-based online self-portrayal application designed to showcase oneself with context to the professional life or career perspective. LinkedIn, Instagram, Pinterest, Facebook pages, etc., are great. But do you know what's even better? A personal website to tell the world who you are and what you do best. A digital portfolio gets your name out there, generates credibility, and – if designed well – it gives you that WOW factor making you stand out from the competition. A web-based portal where users can update their information to showcase all that they can do as in a simple Resume or CV in a more visual and interactive way. Through this portal, a user can update his/her Portfolio online and make it available with just a link.

Project Details:

The software used for the implementation is as listed below:

Frontend Framework: React JS, Next JS
Backend Framework: Node JS
Cloud Services: Azure Cloud
Storage and Other Services: MongoDB, Azure Blobs,
                         Azure Functions,
                         Azure Cognitive Services
Hosted Runtime Services: Netlify, Heroku, Azure
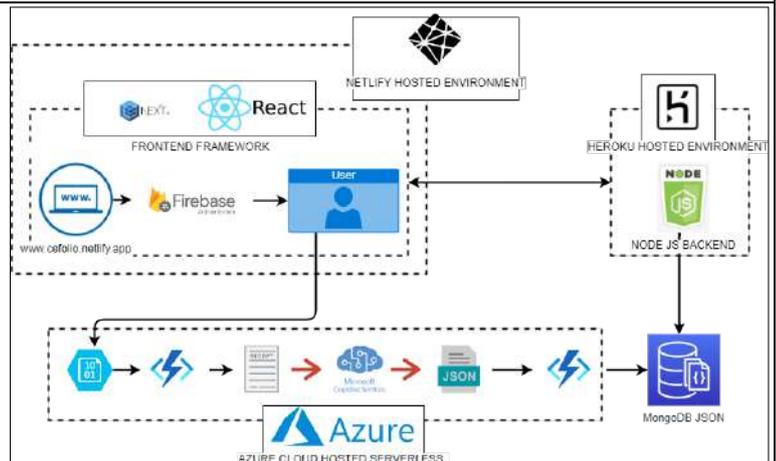
Result and Conclusion:

Online Portfolio is one of the emerging ways to showcase someone's skills in more effective and interactive manner. Here a User will be provided a link which is very simple to remember and carry around. A user does not have to carry around a resume anymore, the ecosystem of viewing the resume in textual formats could be eliminated and a more graphical/visual representation of oneself can be presented to the interviewer.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering
Approved by AICTE New Delhi | Affiliated to VTU, Belagavi,
Virgo Nagar, Bengaluru-560049

Title of the Project : "**Implementing Blockchain for optimizing Electronic Health Record**"

Student Names: Harshitha V R   (1EP18CS0351EP18CS086)
Ramya M R   ()
Shirisha K A   (1EP18CS098)
Sushant Singh   (1EP18CS0106)
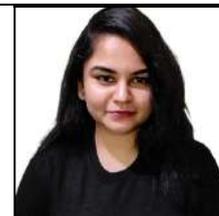
Contact Details: harshithavelloreravikumar@gmail.com (9901575243)
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Guide Name: Dr.C. Emilin Shyni

HARSHITHA V R   RAMYA M R

SHIRISHA K A   SUSHANT SINGH

Abstract: In this project, we show how blockchain technology can be used to transform EHR systems and potentially solve these problems. We present a framework for the use of blockchain technology in the healthcare sector for EHR implementation. The goal of our proposed framework is twofold: first, to implement blockchain technology for EHR, and second, to provide secure storage of electronic records for users of the proposed framework by granting granular access rules. This framework benefits the EHR system by providing a scalable, secure, and integrated blockchain-based solution.

Project Details: We have used flask framework along with python to create our frontend and used solidity to create smart contracts for blockchain. We have used web3 framework to interact with the smart contracts and create transactions in the blockchain.
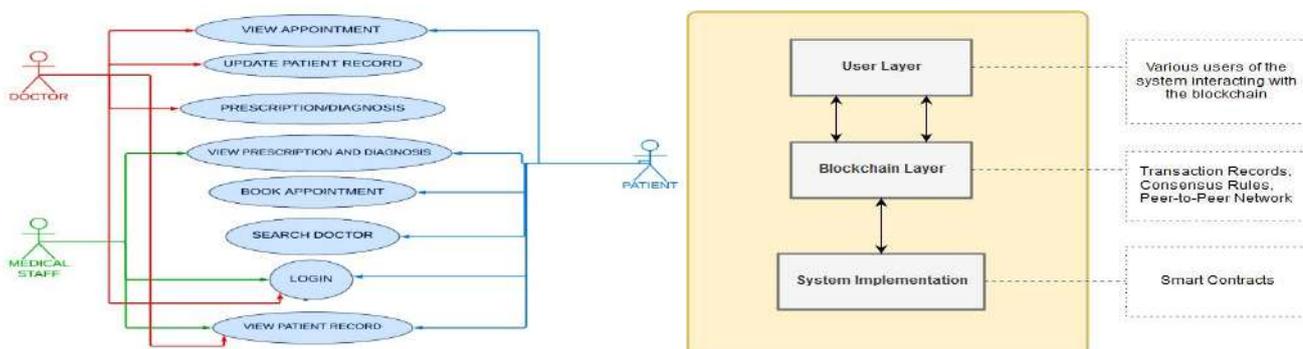
Result and Conclusion: Despite the advancement in the healthcare sector and technological innovation in EHR systems they still faced some issues that were addressed by this novel technology, i.e., blockchain. Our proposed framework is a combination of secure record storage along with the granular access rules for those records. It creates such a system that is easier for the users to use and understand. And the role-based access also benefits the system as the medical records are only available to the trusted and related individuals. This also solves the problem of information asymmetry of the EHR system.

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Title of the Project: "**Ayurvedic Plant Species Recognition Using Statistical Parameters on Leaf Images**"

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Guide Name: Dr. R Senkamalavalli

Kesia Aji

Likhitha R

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Vishnupriya J

Abstract: Automatic recognition of plant species recognition is a challenging problem in pattern recognition and computer vision. An efficient plant recognition system will benefit many sectors of society, including the medical field, botanic research, and plant taxonomy studies. However, the manual identification process requires prior knowledge and is also lengthy. This project implements a simple and efficient methodology for Ayurvedic plant classification using digital image processing and machine vision technology.

Project Details: The three major phases in the proposed method are pre-processing feature extraction and classification.

Software used:MATLAB
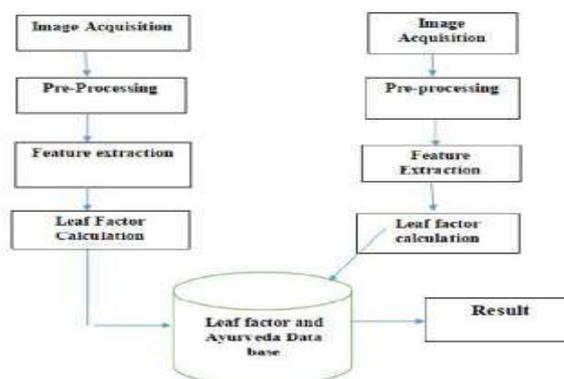
Result and Conclusion: The proposed methodology is put to the test using 20 different leaf photos from six different species. Many plants have medicinal properties and active substances that can be used in medicine. Manual identification of medicinal plants is a time-consuming operation that necessitates the assistance of experts. The amount of manual effort and time necessary to undertake Ayurvedic species recognition can be lowered as a result of this approach. The proposed work can be extended to find the defected leaves to increase the accuracy.
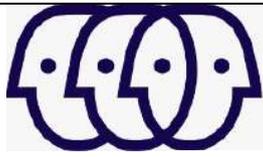
Title of the Project : " **Sentimental Analysis on Chat Application Using LSTM**"

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Guide Name: Mrs. Ammu Bhuvan

Banashankar S   Murali M

Nikhitha G

Abstract: A sentiment isn't always depicted in a clear way in the textual conversation, it is often represented in subtle, complex ways. Everyone has the curiosity to know about what the emotion of other person when they have a textual conversation. Sometimes the end user fails to understand the sentiments of the user from whom the message was received. The main aim of designing is to create a Sentiment analysis which aims to determine the attitude of the users when they are in a conversation. This project classifies the polarity of a given text at the document, sentence, or feature/aspect level whether the expressed opinion in a document, a sentence or an entity feature/aspect is positive, negative, or neutral. The obtained results will help the user to understand the emotion whether the user was happy, sad, angry throughout the conversation. This analysis is done using machine learning technique which helps in providing the accurate results. The proposed sentiment analysis system consists of two phase – Recognition Phase and Distribution Phase. Recognition phase uses as set of features to perform sentiment classification. In the distribution phase, the application server sends out the updated conversation of all other nodes with the latest evaluated sentiment.

Project details:

This project classifies the polarity of a given text at the document, sentence, or feature/aspect level whether the expressed opinion in a document, a sentence or an entity feature/aspect is positive, negative, or neutral. The architecture of the project is as shown here.
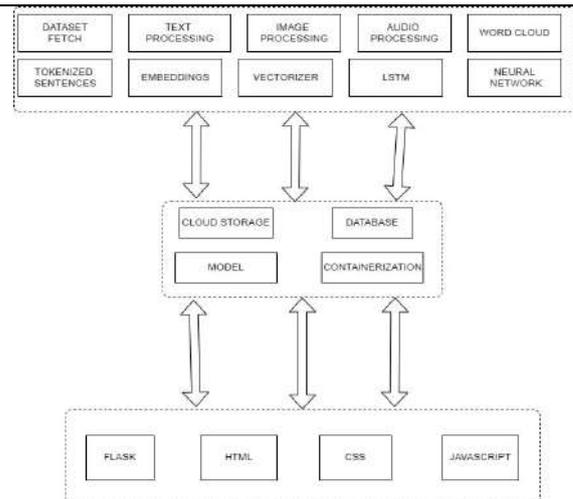
Result and Conclusion: While many of the methods show encouraging results, there are still challenges to overcome when applying them to data gathered from the chat, especially from a conversation, demonstrating that in these circumstances improvements over state of art methods for sentiment recognition in texts are possible. This proposed system helps the user to get to know the emotion of the user which helps in understanding a person a way better.

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Title of the Project: "**Employee Attrition Analysis Using Machine Learning**"

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Guide Name: Prof. Nithyananda C R

Abstract: According to research firm Gartner, the attrition rate rose from 10% in 2020 to 20% in 2021. The main aim of designing this project is to build a system that will analyze employee attrition rate, the main factors leading to attrition, and predict which employees are going to retain by utilizing neural networks and boosting methods to help the firm and their HR managers to reduce attrition. Losing a talented and well-trained employee drastically affects the organization. This results in financial loss to replace a trained employee and creates a deserted space in an organization. It's the keen responsibility of the HR manager to hire well-natured, skillful, trained, and workaholic employees to run a successful firm. The early employee attrition prediction using machine learning can prevent the company loss by predicting the employee's behaviour accurately.

Project Details:

Framework: Flask

Languages Used: Python, HTML, Javascript, CSS, Bootstrap

Software: VS Code, Anaconda, PyCharm
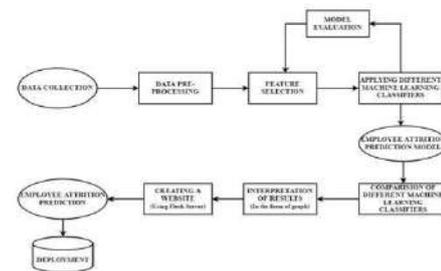
Result and Conclusion: Employee attrition affects financial, time, and effort loss of the organization. The early employee attrition prediction using machine learning can prevent the company loss by predicting the employee's behaviour accurately. As part of this project, a variety of machine learning algorithms is applied to the dataset, the classification was carried out and by Logistic Regression highest accuracy of 85% was observed.

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Title of the Project: **"Farm Assist – Analysis & Prediction Of Crop Disease Using Machine Learning"**

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Guide Name : **Dr. Heena Kousar**

Nirranjan V   Pavan Kalyan Mk

Pramod kumar s sarvi   Puneeth BA

Abstract: Deep learning is a branch of artificial intelligence. In recent years, with the advantages of automatic learning and feature extraction, it has been widely concerned by academic and industrial circles. Transfer learning is a known technique for training small datasets which transfers pre-trained weights learned on a large dataset. However, during transfer learning, negative transfer learning is a common problem. Therefore, a stepwise transfer learning approach is proposed which can help in fast convergence, while reducing overfitting and preventing negative transfer learning during knowledge transfer across domains.

Project Details:
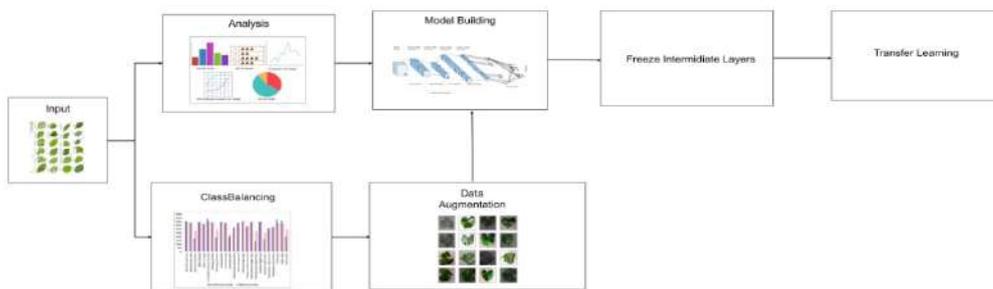
The technologies used in this project are Pytorch and FastAPI. These are python frameworks which helps us in rapid development. Pytorch is open source deeplearning framework by facebook which uses python progamming language.

Result and Conclusion : The proposed classification system is evaluated on the publicly available dataset PlantVillage dataset. This work can be further extended to other crops and diseases as well as more advanced deep learning techniques can be employed for practical applications. CNN-based computer vision tasks have no doubt achieved a milestone in terms of high accuracy. However, there is a need to focus on practical solutions so that industry and consumers both benefit from cutting-edge research. This system, if deployed properly can help mitigate losses to small farms and eventually play an important role in increasing crop yield.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Title of the Project : "A Machine Learning Approach to Predict Autism Spectrum Disorder"

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Shreyas P (1EP18CS099)
Upendra R (1EP18CS118)

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Guide Name: Prof. Jagadevi Bakka

Uday Kumar R   Tejomayi C

Shreyas P   Upendra R

Abstract: In present day Autism Spectrum Disorder (ASD) is gaining its momentum faster than ever. Detecting autism traits through screening tests is very expensive and time consuming. With the advancement of artificial intelligence and machine learning (ML), autism can be predicted at quite early stage. Though number of studies have been carried out using different techniques, these studies didn't provide any definitive conclusion about predicting autism traits in terms of different age groups. The proposed model was evaluated with AQ-10 dataset and 1000 real dataset collected from people with and without autistic traits. The evaluation results showed that the proposed prediction model provide better results in terms of accuracy, specificity, sensitivity, precision and false positive rate (FPR) for both kinds of datasets.

Project Details:
- Operating system : Windows 7 / 8 / 10 / 11
- Coding Language : Python
- Front End : Flask
- Software : Anaconda
- IDE : Spyder
- Libraries : pandas, numpy, sklearn, pickle
- Data Set : AQ-10
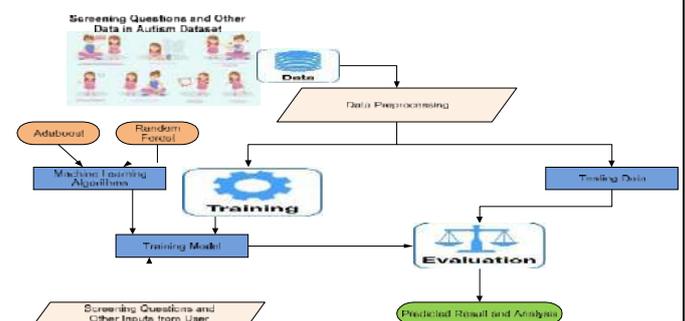
Result and Conclusion: A prediction model was developed to predict autism traits. Using the AQ-10 data set, the proposed model can predict autism in children with more accuracy. This result showed better performance comparing to the other existing approach of screening autism. A user-friendly application has been developed for end users based on the proposed prediction model so that any individual can use the application to predict the autism traits easily. This outcome indicated an extension of many other existing works, since most of the existing works mainly focus on developing and comparing the performance of prediction model or techniques and did not expend to develop any mobile application for end users. In sum, the outcome of this research provides an effective and efficient approach to detect autism traits for small children.

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Title of the Project: "Preventing Phishing Emails Using MachineLearning"

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Bharath Kumar B T   Akash R

Ganesha C

Guide Name: Dr.C Emilin Shyni

Abstract: Emails are widely used as a means of communication through which sensitive and confidential information will be exchanged. This makes them valuable to cyber criminals to obtain sensitive information from people for malicious purposes. A phishing email begins the common form of on-line deception, then sends targets to a phishing website where the attacker tries, goals to share their credentials. Online deception usually leads to spear phishing which has significant consequences. In order to avoid them, we developed a Google Chrome extension to detect phishing emails. We initiated the method by collecting a number of phishing email samples after which we used text mining techniques to find out the words that are important in phishing emails. Using these words we developed a classifier model that theChrome extension could use to detect phishing emails. The extension was tested with the samples collected. On collecting the evaluation metrics, the extension will identify phishing emails and non-phishing emails with a relatively high degree of accuracy.

Project details :

Framework: Flask

Languages Used: Python, JSON, Javascript, HTML

Software: VS Code, Google Collab

System Architecture
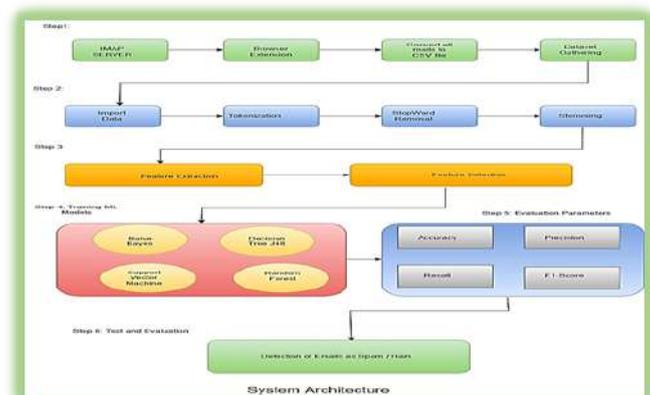
Result and Conclusion: E-Phish is a Chrome extension that will protect the end-users from receiving phishing mail. Cyber threat is increased due to misusing the confidential details of the End-User. The extension provides High security by immediately detecting the phishing mails, keeping the End-User in safer hands. The extension will protect theusers from falling into traps of cyber threats. Moreover, the browser extensions are the tools that are installed in the browser itself consuming very less storage space and very less computing time.
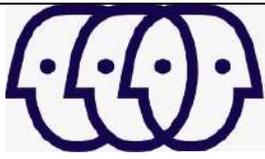
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Department of Computer Science and Engineering

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Title of the Project : "Data Consistency in Multi-Cloud Storage Systems using Data Placement "

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Guide Name: **Prof. Ravi Kumar**

Joys Angel   Lavanya

Vidya   Vismitha

Abstract of the Project: More and more enterprises and organizations are hosting their data in the cloud, in order to reduce the IT maintenance cost and enhance the data reliability. However, facing the numerous cloud vendors as well as their heterogeneous pricing policies, customers may well be perplexed with which cloud(s) are suitable for storing their data and what hosting strategy is cheaper. The general status quo is that customers usually put their data into a single cloud and then simply trust luck. The first is selecting several suitable clouds and an appropriate redundancy strategy to store data with minimized monetary cost and guaranteed availability. The second is triggering a transition process to re-distribute data according to the variations of data access patterns and pricing of clouds. Integrating this method into multi-cloud storage systems will enhance their usability and reliability.

Project Details: Software used JAVA, Jdk 1.6, Netbean IDE and AWS.
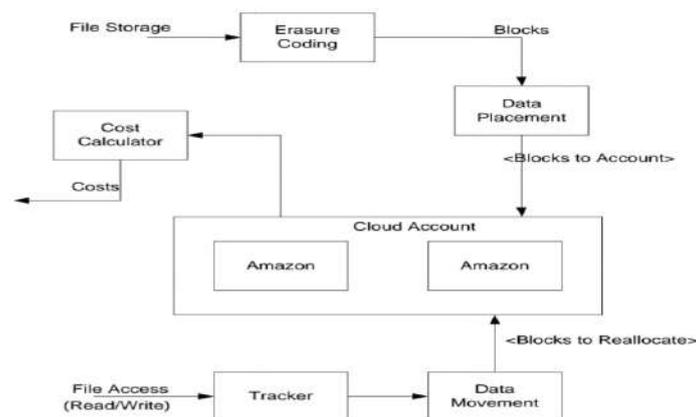
Result and Conclusion: Cloud services are experiencing rapid development and the services based on multi-cloud also become prevailing. One of the most concerns, when moving services into clouds, is capital expenditure. So, in this paper, we design a novel storage scheme "Cost-efficient data hosting scheme and Data Consistency in Multi-Cloud Storage Systems", which guides customers to distribute data among clouds cost-effectively. "Cost-efficient data hosting scheme and Data Consistency in Multi-Cloud Storage Systems" make fine-grained decisions about which storage mode to use and which clouds to place data in. The evaluation proves the efficiency of "Cost-efficient data hosting scheme and Data Consistency in Multi-Cloud Storage Systems"

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Title of the Project : "Image Classification of Abnormal Red Blood Cells using Deep Learning"

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R Mayur Varshan   Prashanth H

Rinil R   Vinay Kumar D

Guide Name: Dr. Heena Kousar

Abstract: The most common and dangerous defect of red blood cells (RBCS) is shape abnormality, The primary detection and confirmation of anaemic stage(shape abnormality) is based on haemoglobin level or manual microscopic examination of peripheral blood smears. This paper proposed a method to classify Rbc's abnormalities based on deformed shaped RBCs image by using SVM and Deep learning in comparison on the RBCs cell Classification. This lead to comparison of the two classifiers in order to predict the one that will best perform on RBCs in order to achieved maximum accuracy for the classification. This study shows that SVM classifier can classify the cells in all condition either small or large dataset while deep learning performs mainly on large and very large dataset which RBCs dataset will be generated in large amount in order to work successfully with the state of the earth on RBCs deformity.

Project Details:

Programming Language	:	Python
Front End	:	Python IDE
Back End	:	Python 3.7

Flow chart:
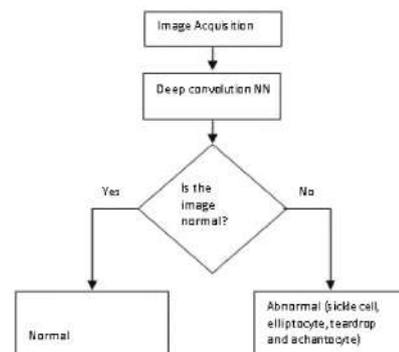
Result and Conclusion: The paper compared the performance of Support Vector machine classification and deep neural network classification on RBCs using 105 and 250 images in, for the experiment and the procedure was done on MATLAB 2017b. This shows that when considering SVM in RBCs images the model performance of these approach depends heavily on the underlying predefined features and it support less dataset while deep learning approach unperformed on less data set these conclude there is a need to generate many RBCs dataset to overcome the deficiency of deep learning on RBCs in future in order to detect RBC'S disease using the state of the art.

Title of the Project : "Detection of Fake and Clone Accounts in Twitter"

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Guide Name: Dr. Chandramouli H

Brundha J   Charitha Shree N

Krishna   Jasmine Vijetha S

Abstract: Online Social Network (OSN) is a network hub where people with similar interests or real-world relationships interact. As the popularity of OSN is increasing, the security and privacy issues related to it are also rising. Fake and Clone profiles are creating dangerous security problems for social network users. Cloning of user profiles is one serious threat, where already existing user's details are stolen to create duplicate profiles and then it is misused for damaging the identity of the original profile owner. Fake profile is the creation of a profile in the name of a person or a company which does not really exist in social media, to carry out malicious activities. In this paper, a detection method has been proposed which can detect Fake and Clone profiles in Twitter. Fake profiles are detected based on a set of rules that can effectively classify fake and genuine profiles. For Profile Cloning detection two methods are used. One using Similarity Measures and the other using the C4.5 decision tree algorithm. In Similarity Measures, two types of similarities are considered – Similarity of Attributes and Similarity of Network relationships. C4.5 detects clones by building a decision tree by taking information gain into consideration. A comparison is made to check how well these two methods help in detecting clone profiles.

Project Details:

Software used for implementation is Spyder is an open-source ,
cross-platform integrated development environment for scientific
 programming in the Python language**.**

Architecture
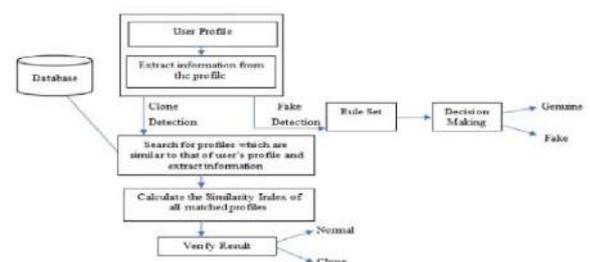
Result and Conclusion: Fake and clone profiles have become a very serious problem in online social networks. So, a detection method has been proposed which can find both fake and clone Twitter profiles. For fake detection, a set of rules were used which when applied can classify fake and genuine profiles. Clone detection was carried out using Similarity Measures and C4.5 algorithm and a comparison was made to check the performance. Clone detection using Similarity Measures worked better than C4.5 and was able to detect most of the clones which were fed into the system. In this work we have considered only the profile attributes for fake and clone detection.

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Title : **"Blockchain Based Decentralized Social Media to prevent False Copyright Infringement "**

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Maithri R   Manjula S

Abstract: Social Media is the data currency of the twenty-first century. Social Media is a powerful tool which can change the state of mind or thought process of a person if utilized efficiently. Most of the popular social media platforms are Centralized which are controlled by the owner or a group of stakeholders. These giants have a power to make a path for a people's opinion or make people follow the path intended by the company. Copyright infringement is another major problem faced by the content creators in various platforms due to the higher influential channels. Social Media Monetization is the core problem of this Copyright issue. Company which runs a Social Media needs to maintain the content in reliable servers which costs them a lot of money. The only way to monetise other than ads is to provide good support and environment to high quality and wide reachable content creators. Content creators take this as an advantage and try to steal others' content which is blindly backed by these companies. We made a step forward to solve this issue using principles of Blockchain.

Project details :

Framework : Django

Languages : Python, HTML, CSS, Bootstrap, JavaScript, jQuery.

Django follows the MVT design pattern (Model View Template).

- Model - The data you want to present, usually data from a database.
- View - A request handler that returns the relevant template and content - based on the request from the user.
- Template - A text file (like an HTML file) containing the layout of the web page, with logic on how to display the data.
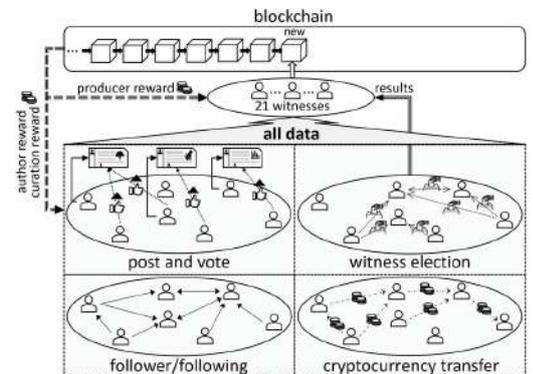
Result and Conclusion: Copyright issues are increasing with the development of technology and usage of social media. We provide a solution to this issue with a blockchain based approach. This idea can be successful if a large number of people start using decentralized social media because we need a large number of legitimate users to nullify the effect of malicious users. Since social media itself is integrated with cryptocurrency, platform users can earn rewards for their everyday posts.

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Title: "Attribute Based Revocating Deduplication Data Over Cloud Computing in Healthcare System "

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Guide Name: Dr.Chandramouli H

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Raghavendra K   Seshadri M V

Abstract: The deduplication based on attribute-based encryption can be well used in eHealth systems to save storage space and share medical records. However, the excessive computation costs of existing schemes lead to inefficient deduplication. In addition, the frequent changes of clients' attribute weaken the forward secrecy of data, and thus, how to achieve the attribute revocation in deduplication is a problem that remains to be solved. In this paper, we propose a variant of the attribute-based encryption scheme that supports efficient deduplication and attributes revocation for eHealth systems. Specifically, an efficient deduplication protocol based on the nature of prime number is used to alleviate the computation burden on the private cloud, and attribute revocation is realized by updating the attribute agent key and the ciphertext. Moreover, outsourcing decryption is introduced to reduce the computation overhead of clients. The security analysis argues that the proposed scheme can reach the desired security requirements, and the visual experiment result indicates the excellent performance of the proposed scheme while realizing deduplication and attribute revocation.

Project Details: Software - CP-ABE (Ciphertext-Policy Attribute-Based Encryption) scheme that deduplicates data in healthcare system on cloud.
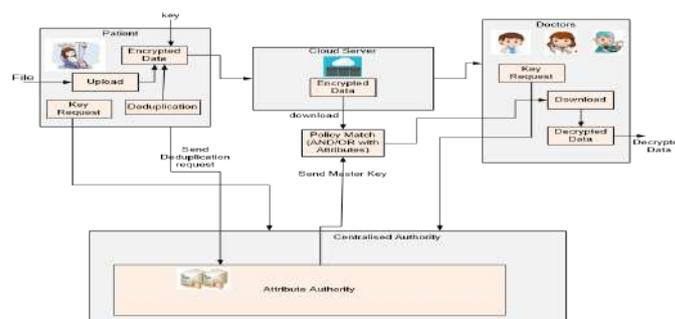
Result and Conclusion: The proposed work allows patients to share their medical records with other parties who possess the access right, and promises the private cloud to delete the redundant copy of the identical medical records to save the storage overheads. Besides, our scheme realizes the attribute revocation to ensure the privacy of patients, and introduces the outsourcing decryption to reduce the computation burden on doctors. Finally, we conduct security and performance analysis to assess the availability of our scheme. The corresponding results reflect that the proposed scheme can realize efficient deduplication while ensuring the privacy of patients in eHealth systems.

Title of the Project: "Detecting Cyberbullied Tweets Using Machine Learning Algorithms"

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Abstract of the Project: Social media is a platform where many young people are getting bullied. As social networking sites are increasing, cyberbullying is increasing day by day. To identify word similarities in the tweets made by bullies and make use of machine learning and can develop an ML model automatically detect social media bullying actions. However, many social media bullying detection techniques have been implemented, but many of them were textual based. The goal of this paper is to show the implementation of software that will detect bullied tweets, posts, etc.We used nine supervised machine learning algorithms to form a comparison and determine which among gives out the highest accuracy in order for us to decide how to detect cyberbullying activity on the Internet and be alert of threats in both the real and virtual world.

Project Details: In our project we are using 9 Machine Learning models to detect and prevent bullying on Twitter.And train the Model using the Pre-processed Datasets and Detect whether the tweet is bullied or not. The Architecture of our Projectis as shown below:
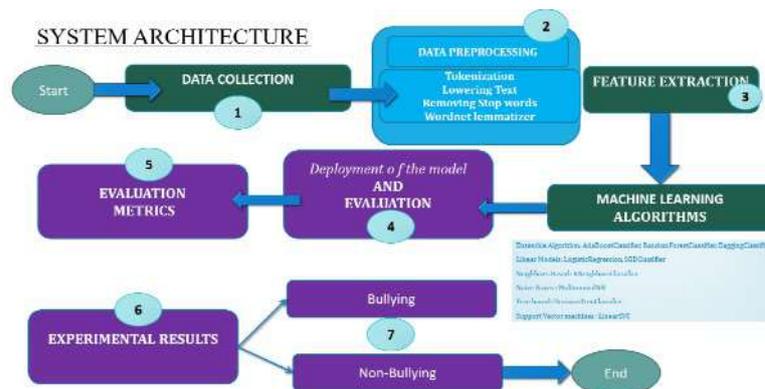
Result and Conclusion:
Cyber-bullying in Twitter platform using Machine Learning. Experiments were carried out with both supervised and unsupervised machine learning techniques. It was observed that identifying the right set of keywords is an essential step for getting better results during sentiment analysis Results indicate that our model achieves reasonable performance and could be usefully applied to build concrete monitoring applications to mitigate the heavy social problem of cyber bullying

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Title of the Project : "Sentimental Analysis of Stock Market"

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Abstract: In multiple scenarios, artificial intelligence and machine learning methods in combination with data mining are used in multiple scenarios to solve many problems. These machine learning methods and techniques have already proved to be effective and highly accurate, and they save a lot of time. In recent days, people have started investing in stocks and shares as it is a profitable option in order to increase one's income. If there is proper planning and good guidance, there are chances of doubling the annual revenue from the returns we get from the stock market. Even today, however, many people believe that stock investments are a risky proposition. Investment experts have a very high income, along with the ignorance of the general public with respect to the financial problems. Some issues like these behave as barriers for many people to invest in stocks.

Project Details: Software Requirements : Sqlite3/flask, Python **.**The tweets will be stored in the form of .csv files
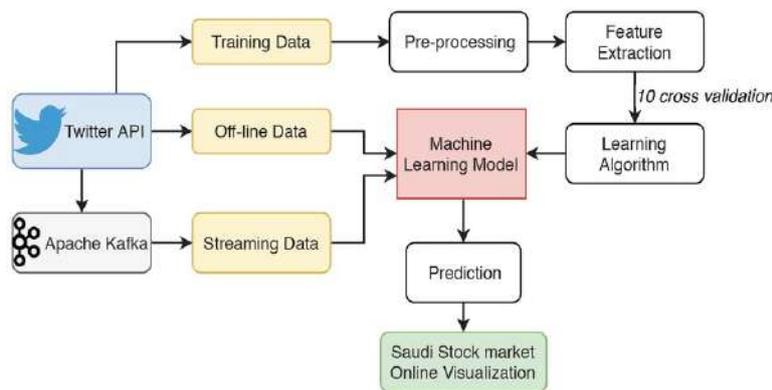
Result and Conclusion: This project proposed a machine learning model using Random Forest for stock price prediction using Twitter reviews. These reviews include emotions, i.e., polarity, and comments about the product. The PSO is employed iteratively as a global optimization algorithm to optimise Random Forest for stock price prediction. Also, plot all the data related to the results and the training part. Based on the surveys and comparisons done with all the other machine learning models for stock price prediction using Twitter, in order to analyse and predict based on the public mood using sentimental analysis, Random Forest is the most inexpensive model. In order to get an overview of the public mood, the tweets are classified into positive, neutral, and negative.

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Title of the Project : "Sales prediction of Big Mart using Machine Learning Model"

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Abstract: Nowadays shopping malls and Big Marts keep track of the sales data of each and every individual for predicting the future demands of the customers and updating the inventory management as well. Data warehouses basically contain a large number of customer details as well as attributes of individual items. Analyzing data warehouses can often reveal anomalies and trends. Retailers like Big-Mart can use the resultant data to predict future sales using machine learning techniques. Here a predictive model using Xgboost, Decision Tree, Linear regression, and Random Forest techniques is developed to forecast the sales of a business such as Big-Mart and it was discovered that the model outperforms existing models.

Project Details: We have used Jupyter Notebook and flask framework for our project implementation. Flask is a lightweight Python web framework that provides useful tools and features for building web applications.

Architecture:
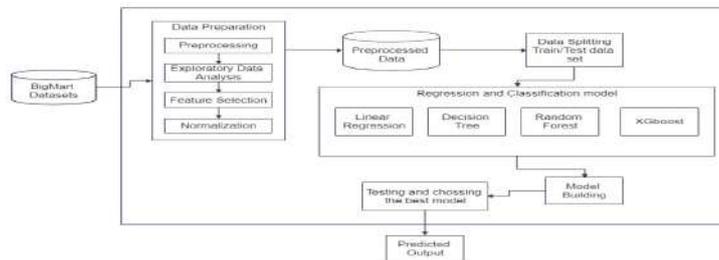
Result and Conclusion: A company's future performance can be forecasted through sales prediction, which is an integral part of strategic planning. Experts have also shown that a smart sales forecasting program is required to manage vast volumes of data for business organizations. The Machine Learning Methods presented here should provide an effective method for data shaping and decision-making. For predicting sales of Big-Mart we applied several machine learning algorithms (Xgboost, Decision tree Linear regression, Random Forest,) and we can conclude that Xgboost and Decision tree give the better prediction concerning Accuracy, MAE, and RMSE. With forecasting sales and a sales plan, future cash flow can be avoided and production, staff, and financing needs can be better managed.

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Title of the Project : "Gaze-Based Secured Authentication System Based On Morse Code "

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Abstract: Gaze-based authentication refers to finding the eye location across sequential image frames, and tracking eye center over time. Personal Identification Numbers (PIN) are widely used for user authentication and safety for security reasons. Users must enter a physical PIN to use PIN-based password authentication, which can be susceptible to password cracking or hacking. In this system Password authentication will be done using Morse code, where numbers will be represented in dots and dashes. This model presents a real-time application for gaze-based PIN entry, and eye detection and tracking for PIN identification using a smart camera. Enhancing the conventional PIN entry by adding eye-blink based PIN entry with Morse code to provide an additional level of security is the motivation behind this work. The main goal of this project is to go through the general ideas and structures of recognition, important issues and factors of human faces and algorithms, where the individual have to get their details registered and later during login if the information gets satisfied with the previously registered details it moves on to the next step of Morse code.

Project Details: Software used**:** Python, Framework used: OpenCV (It is a computer vision framework that helps to do all sorts of processing on images and video), Tkinter and PyQt5 (used for designing acceptable GUI's)
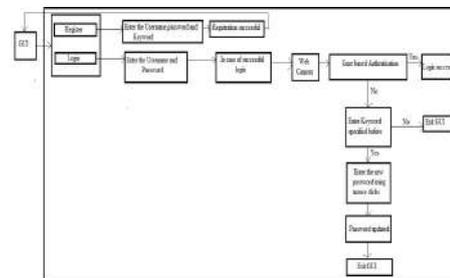
Result and Conclusion: Gaze-based authentication basically provides two factor authentication. Two factor authentication is providing two layers of security to protect an account or system. Here gaze-based authentication and mouse click is used in order to convert numbers or alphabets into source code thereby increasing the security. This project is also helpful for disabled people in order to authenticate themselves. It also provides a user friendly environment and helps in overcoming the disadvantages of the existing authentication systems thereby providing better security to the system.

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Title of the Project: " **Capsule Forensics: Using Capsule Networks To Detect Forged Images And Videos**"

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Amrutha TS

Anusha V

Sushma C

Tejashwini U

Abstract: Recent advances in media generation techniques have made it easier for attackers to create forged images and videos. State of- the-art methods enable the real-time creation of a forged version of a single video obtained from a social network. Although numerous methods have been developed for detecting forged images and videos, they are generally targeted at certain domains and quickly become obsolete as new kinds of attacks appear. The method introduced in this paper uses a capsule network to detect various kinds of spoofs, from replay attacks using printed images or recorded videos to computer generated videos using deep convolutional neural networks. It extends the application of capsule networks beyond their original intention to the solving of inverse graphics problems.

Project details:

For developing the application, we are using Python and Django framework. Django is a high-level python web framework that encourages rapid development and clean, pragmatic design.

Result and Conclusion:

Our comprehensive experiments demonstrated the feasibility of building a general detection method that is effective for a wide range of forged image and video attacks. They also demonstrated that capsule networks can be used in domains other than computer vision. The proposed use of random noise in the training phase proved beneficial in most cases. Future work will mainly focus on evaluating the ability of the proposed method to resist adversarial machine attacks, especially on the proposed random noise at test time, and enhancing its ability. It will also focus on making the proposed method robust against mixed attacks, on detecting anomalies, and on raising this critical issue in the research community.

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Title of the Project: "Real Time Video Based Heart And Respiration Rate Monitoring"

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Guide Name: Mrs. Hamsalatha J

Abstract: In recent years, research about monitoring vital signs by smartphones grows significantly. There are some special sensors like ECG and Photoplethysmographic (PPG) to detect heart rate (HR) and respiration rate (RR). Smartphone cameras also can measure HR by detecting and processing iPPG signals from the video of a user's face. Indeed, the variation in the intensity of the green channel can be measured by the iPPG signals of the video. This study aimed to provide a method to extract heart rate and respiration rate using the video of individuals' faces. The proposed method is based on measuring fluctuations in the Hue, and can therefore extract both HR and RR from the video of a user's face. The proposed method is evaluated by performing on 25 healthy individuals. For each subject, 20 seconds video of his/her face is recorded. Results show that the proposed approach of measuring iPPG using Hue gives more accurate rates than the Green channel.

Project Details:

Spyder is an open source cross-platform integrated development environment (IDE) for scientific programming in the python language.

OpenCV is an open source computer vision and machine learning software library.
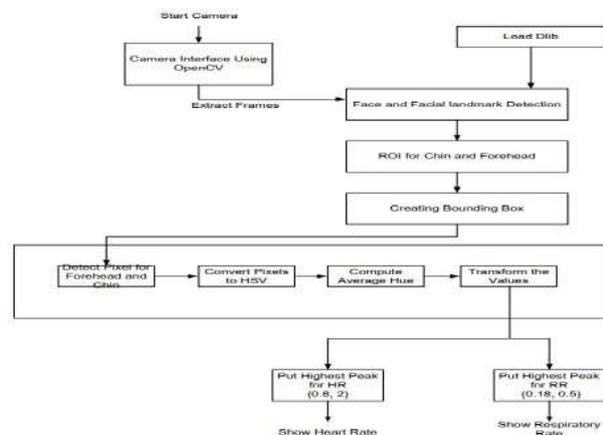
Result and Conclusion: A real time non-contact based HR and RR extraction method is described using facial video which is easy to implement, low cost and comfortable for real time applications. Here, the main idea is to extract HR from the color variation in the facial skin due to cardiac pulse and RR from thermal areas whose implementation will be done using a simple webcam in indoor environment with constant ambient light. This non-contact technology is promising for medical care and others indoor applications due to widespread availability of camera specially webcams.

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Title of the Project : "An Effective Tool For Verification of Fake News"

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Guide Name: Prof. Ravi Kumar

Sriram P   Shalom P

Sanjay KB   Md Moonraj

Abstract: Fake news is a major issue for us as a society and it also shapes our society in a wrong way if it continues to grow at this rate. To fight fake news there are a lot of methods and tools, to add to this a new way of detecting fake news is our method. Here we take the news that people want to know is fake or not and we compare it to what the journalists think in real time and draw a conclusion if the sentence is fake or not. There are advanced methods and techniques that allow us to determine the authenticity of a news article. For example, Topic-Agnostic Approach, Language approach and Machine Learning Approach. Most of the techniques analyze the intent and content of the news article. These existing techniques rely a lot on what the machine has understood from previous articles and doesn't account for the change in perspective or the way humans use their language. To address this issue, we have come up with this method of determining fake news which completely depends on the human perspective on the news article. Our method uses the real time data used by journalists to determine if the news is fake or not.

Project Details: We have used python3 and BERT for our project implementation under VS code integrated development environment. (BERT is an open-source transformers-based ML framework used for natural language processing). The architecture of our project is as shown here.
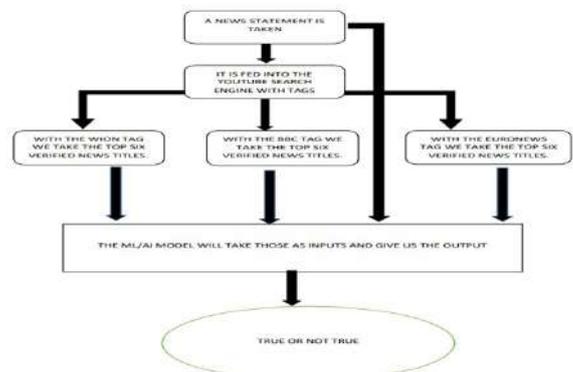
Result and Conclusion: Fake news is a very important security risk to our social life as an individual and as a community. This new method will detect fake news by using real time data reported by journalists and this will be the core decider on whether the news is fake or not. The aim is to make this project open and available to all so that it is explored and improved by the community. The objective will be to make sure that whenever a news statement is given as true that statement should be true with a probability of 98 percent. If the news statement is given as false, the user must be informed that this result maybe because the data was insufficient.

Title of the Project : **"Identifying And Localizing The Trees Using Gaze Matching And Opencv "**

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Guide Name: Mrs. Manimegalai

Pranavi V   Pruthvi D V

Sahana S   Yakshita V

Abstract: Differentiating and finding similar patterns of images from a video frame source emerges as the basic elemental task in image processing. In this project, various algorithms on object identification, shape identification, color identification, object counting are analyzed and compared to obtain new unsupervised method. These methods find applications in the field of defense, security check, healthcare and Traffic monitoring. Various challenging features and applications of object Detection, identification and counting methods are elaborated with new algorithm with least set of dataset. In addition, the different steps involved in object detection and results for several steps are discussed. Moreover, the proposed algorithmic method is able to process the unstructured and structured images in multiple visual concepts. Further, these algorithms can be applied in wide area and crowded scenes with high precision identification.

Project Details: Different object counting, identifying and detecting techniques considered. The algebra used is capable of differentiating the different visual aspects in an image with a minimum concentration by the user. The different object detecting and counting techniques are discussed and combined for this new algorithm.

Load Images(Tree)

Feature Selection Techniques
SIFT

Extract Element Features

Gauge Matching
Compute Image Similarity

Object Detection(Tree)

Show Object (Tree) Detected with counts
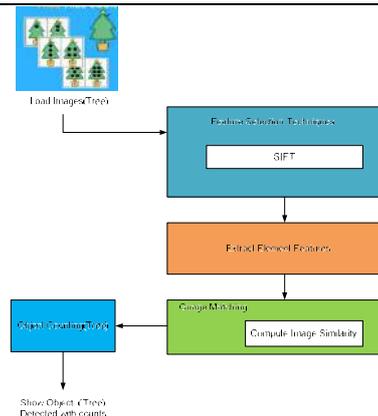
Result and Conclusion: Proper recognition of the object size, shape and feature is important for object counting. The template matching processing for a given sample is found out in this method. A source image is given as input and a sample patch image is given with the input source image. The sample image is identified from the group image and found the patch image. All the similar sample patches are found from the original image from the entire procedure. In feature extraction process an image is given as input and a sample stride is given to take the block features.

Title of the Project : "Bone Fracture Detection And Classification Using Deep CNN "

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Guide Name: Mrs. Divya U H

Harshitha C   Raksha S

Sahana S   Sushma B P

Abstract: Bone provides the ability to move the body. The bone fractures are common in the human body. The doctors use the X-ray image to diagnose the fractured bone. The manual fracture detection technique is time consuming and also error probability chance is high. In the present study, a Deep Neural Network model has been developed to classify the fracture and healthy bone by comparing to medical imaging techniques such as X-Ray. Preprocessing, segmentation, feature selection and extraction is done. The extracted images are classified using CNN classifier and stored, based on classification need to identify the bone is normal or fractured which is useful for the physician to give therapeutical suggestions.

Project Details: The project has been implemented using deep CNN framework with Python programming.
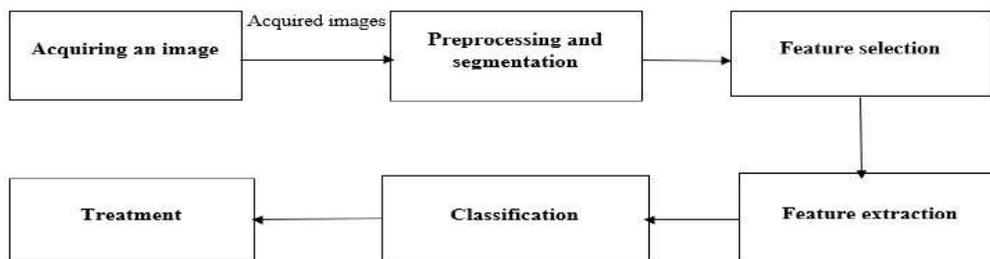
Result and Conclusion: In this approach we developed the system that detects and classifies whether the bone is normal or miniature fractured using deep CNN model and OpenCV library for image processing. This system provides human error free, less expensive and accurate results. The result of this system shows the improved rate of early detection of miniature bone fracture. The classification accuracy of the model is 92.44% for the healthy and the fractured bone.

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Title of the Project : **"Deep Learning For The Detection of Deepfakes "**

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Guide Name: **Prof. Nithyananda C R**

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Caleb Joshua M

Mahendran D

Shanthraj BK

Abstract: In recent months, free deep learning-based software tools has facilitated the creation of credible face exchanges in videos that leave few traces of manipulation, in what they are known as "DeepFake"(DF) videos. Manipulations of digital videos have been demonstrated for several decades through the good use of visual effects, recent advances in deep learning have led to a drastic increase in the realism of fake content and the accessibility in which it can be created. These so-called AI-synthesized media (popularly referred to as DF).Creating the DF using the Artificially intelligent tools are simple task. But, when it comes to detection of these DF, it is major challenge. Because training the algorithm to spot the DF is not simple. Here, the proposed system detects the DF using Convolutional Neural Network and Recurrent neural Network. System uses a convolutional Neural network (CNN) to extract features at the frame level. These features are used to train a recurrent neural network (RNN) which learns to classify if a video has been subject to manipulation or not and able to detect the temporal inconsistencies between frames introduced by the DF creation tools.

Project Details: In pre-processing phase all datasets are split into frames and the face is cropped by face recognition library and again face cropped frames are merged to form a video. In model and training phase by using those face cropped videos, the model is trained and the confusion matrix is plotted. In test model by using the confusion matrix, the video is real or fake is found.
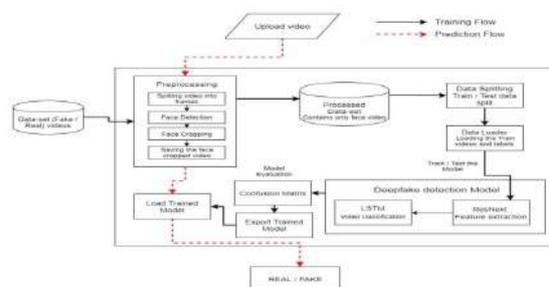
Result and Conclusion: The proposed method is inspired by the way the deep fakes are created by the GANs with the help of Auto encoders. This method does the frame level detection using ResNext CNN and video classification using RNN along with LSTM. The proposed method is capable of detecting the video as a deep fake or real based on the listed parameters in paper. It is estimated that, it will provide a very high accuracy on real time data.

Title of the Project : "Customer Churn Analaysis in Telecom Sector using machine learning"

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Poojitha.H   Dasiripalli Joshna

T.Chandana Reddy

Guide Name: Mrs. Neha Gopal N

Abstract: Over the years, the telecommunications industry has emerged as one of the world's most rapidly growing industries, having its impact on about 90% of global population. The main aim of designing this project is to build a system that will analyze customer churn rate, the main factors leading to churn and predict which customers are going to churn by utilizing neural networks and boosting methods to help the firm and the telecom sector to reduce churn rate. Customer churn is a major issue for the companies especially in telecomn sector. Losing a customer affects the organization. This is recognized as customer churn rate. Customer churn is a classification problem as this is to be predicted whether customer will stopover using services or not.

Project Details: The architecture of the project is as shown below,
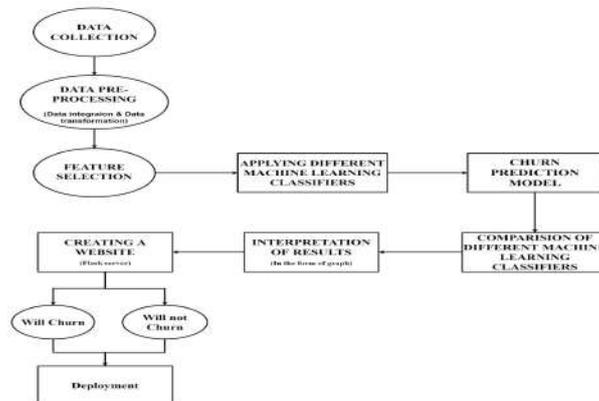
Result and Conclusion: In the current digital world, the usages of the mobile phones are very much essential for every human life. Due to this, many service providers would like to give, values added services to retain their customers. Many telecom industries are facing difficult to predict the customers who are likely to leave the services. So, at this point of time, customer churn analysis plays a vital role which will help the service providers to retain their customers and meet their satisfaction. The early churn prediction using machine learning can prevent the company loss by predicting the customer behaviour accurately.

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Title of the Project : "Typical and Non-Typical Prediction of Diabetes using Adaboost Algorithm "

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Shubham Dhiman

Tejeshwini N

Abstract: Diabetes is a major metabolic disorder which can affect entire body system adversely. Early detection of cancer is very important to maintain a healthy life Machine learning (ML) is a computational method for automatic learning from experience and improves the performance to make more accurate predictions of cancer. In this analysis, 340 instances have been collected with 26 features of patients who have already been affected by diabetes with various symptoms categorized by two types namely Typical symptoms and Non-typical symptoms. The purpose of this study is to identify the Diabetes Mellitus type accurately using Adaboost algorithm which is a Machine Learning technique and we obtained more accuracy.

Project Details: The architecture of the proposed system is,
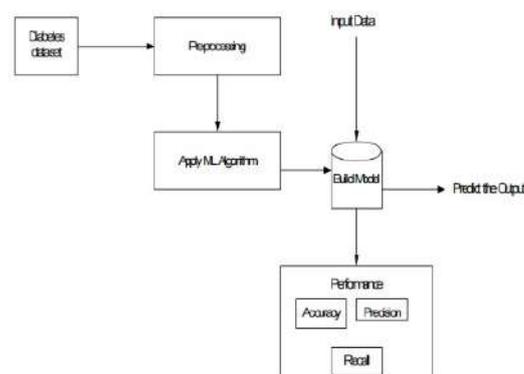
Fig. 4.1 Proposed System Architecture

Result and Conclusion: There are several missing information in the dataset. Although we have faced these issues, we overcome and performed the analysis successfully using Machine Learning techniques. Finally, we have used Random Forest and Adaboost algorithm which has given 98.24% accuracy. Shortly, we would like to develop an intellect system to predict DM accurately using our proposed model.
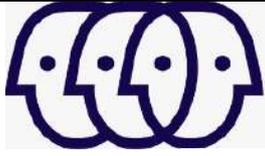
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Department of Computer Science and Engineering

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Virgo Nagar, Bengaluru-560049

Title of the Project : "Detection And Classification Of Alzheimer's Disease Using Deep Learning Approach"

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Priyadharshini A   Mahalakshmi K

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Guide Name: Prof . Kesavan M V

Abstract: Alzheimer's disease (AD) is a progressive and irreversible brain degenerative disorder. Worldwide around 50 million people have dementia and there are nearly 10 million new cases every year. There is no treatment currently available to cure dementia, but it can be treated only if it is identified in the early stages. Thus, the need for a computer aided system for early diagnosis of AD. Here in our project we are trying to identify and classify the stage of AD by using deep learning techniques. We are using OASIS dataset to train our model. Initially we use data augmentation to increase the amount of data to increase the size of the dataset and increase variability in the dataset. The MRI images are pre-processed to remove noise and enhance the quality of image. Furthermore it is subjected to segmentation and feature extraction by using relevant algorithms and techniques for better results.

Project Details: Software - Google Colab (It is a free jupyter notebook environment which entirely runs on cloud).
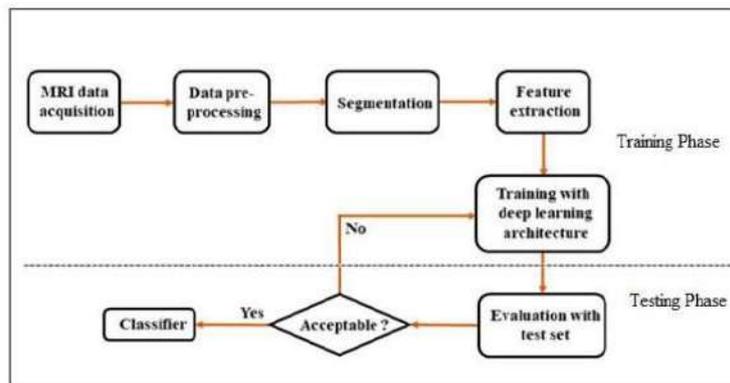
Result and Conclusion: The data was subjected to transfer learning on five different CNN models.The obtained results are tabulated. Then the same dataset was subjected to the designed CNN model. The model has obtained testing accuracy of 91.17%. The early diagnosis of AD is crucial to improve the quality of patients' lives and the development of improved treatment and targeted drugs. The present study was conducted to explore the effectiveness of the resting-state functional magnetic resonance imaging and advanced deep learning techniques to perform multi-class classification and diagnosis of AD and its progressive stages including CN, SMC, EMCI, MCI, LMCI, and AD. The study proposed to use deep residual neural networks combined with transfer learning approach for performing the classification of 6 AD stages.

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Title : "Network Intrusion Detection Using Ensemble Based Classifier With Feature Selection"

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Guide Name: Prof. Jagadevi Bakka

Mahantesh B   Nagashree

Nishan   Thejas karkera

Abstract: Anomaly based Intrusion Detection Systems (IDS) learn normal and anomalous behaviour by analysing network traffic in various benchmark datasets. Common challenges for IDSs are large amounts of data to process, low detection rates and high rates of false alarms. Considering anomaly pattern detection as detecting a point in time where the behaviour of the system is unusual and significantly different from past behaviour. Based on the experimental results achieved, we conclude that the proposed technique is an efficient method for network intrusion detection. Comparative study shows that the proposed model is efficient than other existing models with respect to intrusion detection success rate.

Project Details:

The project is centered to NIDS of network and cybersecurity and that is implemented using machine learning algorithms viz naïve base and MLR and tools used over here are NetBeans, packet raiser and JPCAP.
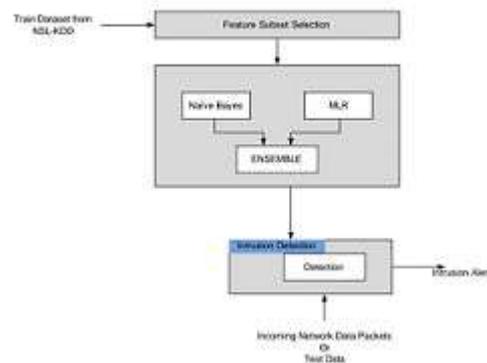
Result and Conclusion: In this project, we introduced an adaptive ensemble model for classification and novel class detection in concept drifting data streams. More specifically, novel class instances in data streams can be automatically detected in our approach. Our work addresses challenging issues in data stream classifications such as infinite length, limited labelled data. In this project, we have presented different machine learning models using different machine learning algorithms and different feature selection methods to find a best model. The experimental results proved that this ensemble classifier efficiently detects the arrival of novel class instances and also greatly improves the classification accuracy rates under different circumstances.

Title of the Project: "Gravitational Wave Observation Simulation for Pulsars Identification "

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Guide Name: Mrs. Shammi L

Abstract : As the importance of Gravitational Wave Astrophysics increases rapidly, astronomers in different fields and with different backgrounds can have the need to get a quick idea of which GW source populations can be detected by which detectors and with what measurement uncertainties. The GW-Toolbox is an easy-to-use, flexible tool to simulate observations on the GW universe with different detectors, including ground-based interferometers space borne interferometers, pulsar timing arrays mimicking the current working ones and future ones. We include a broad range of sources such as mergers of stellar mass compact objects, namely black holes, neutron stars and black hole-neutron stars; and supermassive black hole binaries mergers and inspirals, Galactic double white dwarfs in ultra-compact orbit, extreme mass ratio inspirals and Stochastic GW backgrounds. We collect methods to simulate source populations and determine their detectability with the various detectors.

Project Details: The proposed project has been implemented using PyCharm, it is a free and open-source scientific environment written in Python.
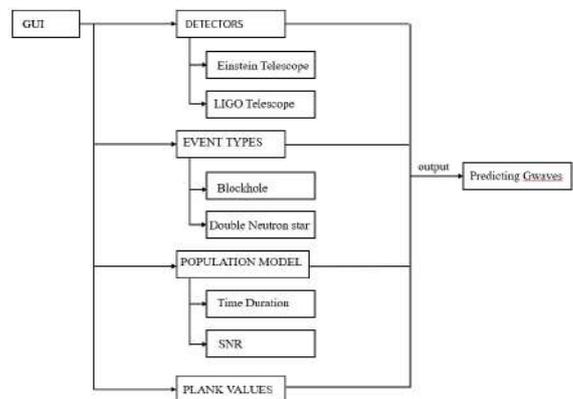
Result and Conclusion: In just a few years of using instruments capable of recording the waveforms of signals, ground-based GW observatories have made seminal contributions to the fields of GR, fundamental physics and astrophysics. The multi-messenger characterization of the first observable BNS coalescence dramatically enhanced our understanding of extreme states of nuclear matter and the astrophysics of kilo novae.

Title of the Project : "Clustering of Credit Card Customers Using Machine Learning "

Student Names: Chendrayudugari Sruthi (1EP18CS025)
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Guide Name: Mrs. Vishnupriya K

C Sruthi   Ramya M

V Jyothi   Suhana Khan

Abstract: Customers are the most basic foundation of any business to achieve success. It's essential to keep the customer satisfied throughout the service they provide for which identifying the customer needs and analysing their behaviour plays a vital role. Customer segmentation is a method of dividing broad consumer or business market into subgroups or clusters on the basis of shared characteristics. In the financial year 2021, nearly 62 million credit cards were in use in India. The cumulative number of cards increased constantly in recent years. Therefore, to understand customer's behaviours accurately machine learning plays a vital role. In this project we have made use of K-Means algorithm for clustering and decision tree algorithm for prediction. The proposed model includes a dataset with 8950 rows and 18 columns. Better visualization will be seen by using different kinds of plots and prediction will be done based on the inputs given in the frontend.

Project Details: We made use of Jupyter notebook for the backend purpose and Streamlit framework for designing the frontend.
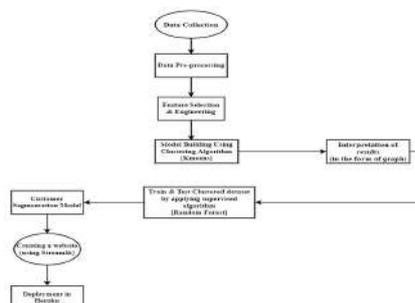
Result and Conclusion: In this study, K-Means clustering algorithm is used for grouping customers into different groups. As per analysis 4 cluster groups are formed and a supervised algorithm named, decision tree classifier is used for predicting which customer belongs to which cluster. An application has been designed where by entering customer details we can know which customer belongs to which of the cluster and we have deployed our model in Heroku platform so that anyone can access our application from any location.
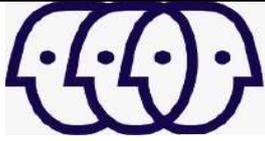
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Department of Computer Science and Engineering
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Virgo Nagar, Bengaluru-560049

Title of the Project: "Predictive Analysis of Drugs for Covid-19"

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Guide Name: Dr. I. Manimozhi

A Harshith   Jashwanth R
Kishan Gowda   Suprith SV

Abstract: The Outbreak of the Covid-19 led to a huge Mortality which was a severe & urgent global concern, Earlier stage of this pandemic was declared a sort of Pneumonia where an individual gets affected with Cold, fever & headache, etc. Here we aim to develop employed supervised ML algorithms to identify the drug analysis features. Predicting Covid-19 disease diagnosis with high accuracy based on the medical history of the patient to treat & analyze the drugs to be provided. As there are cases reported for the inappropriate drug analysis, which led to a many deaths we aim to develop a drug analyzing ML model which helps in treating Covid patients with proper drugs, based on their medical history such as BP, diabetes, Shortness of breath, etc.

Project Details: We have used Ada Boost Algorithm and Random Forest Algorithm In order to train the Model using the Pre-processed Datasets and Predict Drugs Accordingly. The Architecture of our Project is as shown below:
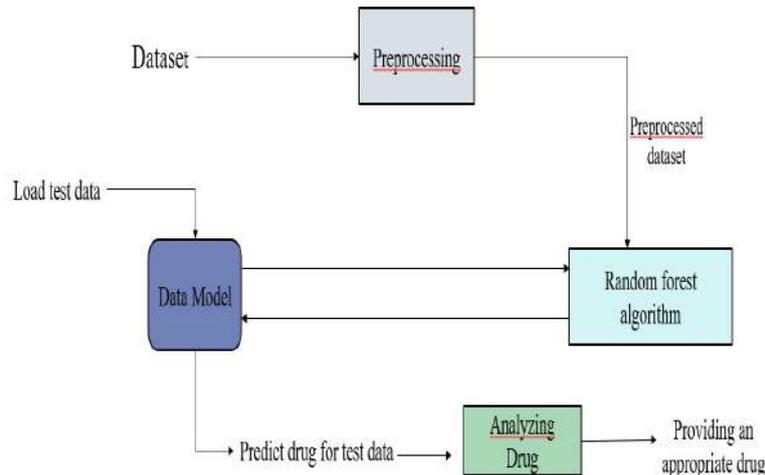
Result and Conclusion: In this study of deaths from inappropriate drug analysis occurring during the first 8 months of 2019 and 2020 in Rhode Island, the rate of deaths from overdose increased in 2020 compared with the same period in 2019, and we identified several evolving characteristics of deaths from a drug overdose, These characteristics appear to correspond with environmental changes that occurred during the COVID-19 pandemic, including increased isolation, mental health stressors, economic insecurity, and drug supply lethality, These findings suggest that targeted opportunities exist to adapt service delivery and state policies in response to the increase in the rate of deaths from overdose, Hence we aim to develop an appropriate drug analyzing model with the help of ML algorithms

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Title of the Project : " Fake Currency Detection Using Image Processing "

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Yamini D   (1EP18CS125)

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Monisha M   Vidhya Shree A
Harika B   Yamini D

Guide Name: Mrs. Megha Menon K

Abstract: Fake currency is the money produced without the approval of the government, creation of it is considered as a great offence. The elevation of color printing technology has increased the rate of fake currency note printing on a very large scale. Years before, the printing could be done in a print house, but now anyone can print a currency note with maximum accuracy using a simple laser printer. This results in the issue of fake notes instead of the genuine ones has been increased very largely. It is the biggest problem faced by many countries including India. Though banks and other large organizations have installed automatic machines to detect fake currency notes, it is difficult for an average person to distinguish between the two. This has led to the increase of corruption in our country hindering the country's growth. Some of the methods to detect fake currency are watermarking, optically variable ink, security thread, latent image, techniques like counterfeit detection pens. We hereby propose an application system for detecting fake currency where image processing is used to detect fake notes. We are going to detect the variation in barcode among the real and fake one and, we will find out dissimilarities between the image under consideration and the prototype. CNN classifiers will be used to detect fake currency. The proposed app for fake currency detection will be simple, accurate and easy to use.

Project Details : This project is implemented using MAT LAB. The architecture of the system is,
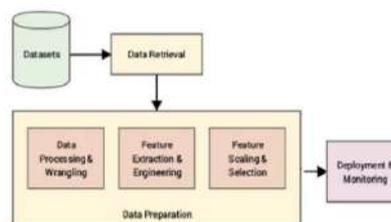
Result and Conclusion: The authentication of Indian banknote currency is done by applying some image processing methods. The conferred approach offers an economical technique of faux currency detection. 3 necessary security measures explored for faux currency detection are the protection thread, run brand, and identification mark. Image process algorithms are applied to extract these options. The effectiveness of the conferred approach is 100% recognition of faux currency. The future perspective of the approach is to do the same with different national currencies and to infuse the conferred technique into a mobile application, so it will have the benefit of larger use. The appliance areas which will be helpful through the conferred approach embody faux currency detection whereas electronic currency exchange and cash deposit victimization ATM.
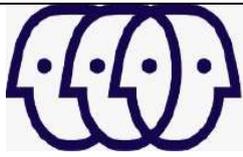
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Department of Computer Science and Engineering
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Virgo Nagar, Bengaluru-560049

Title of the Project : "A Machine Learning Approach for Human Gender Classification Using Facial Recognition "

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Guide Name: Mrs. Megha Menon K.

Preethi H   Sagiraju Pavan Kumar

Satyam Shah

Abstract: Human Gender classification is one of the most interested and critical area of research. Research contains interactions between computers and human which includes vast information concerning difference in characteristics of males and females. In several kind of pattern recognition, machine learning gives a relation between gender and face. Face is a unique biometric feature of the individual. Facial images with different combinations including frontal, aligned, smiling, non-smiling as well as expression images make the system complicated. For human gender classification, SVM provides better accuracy as compared with existing methods.

Project Details:
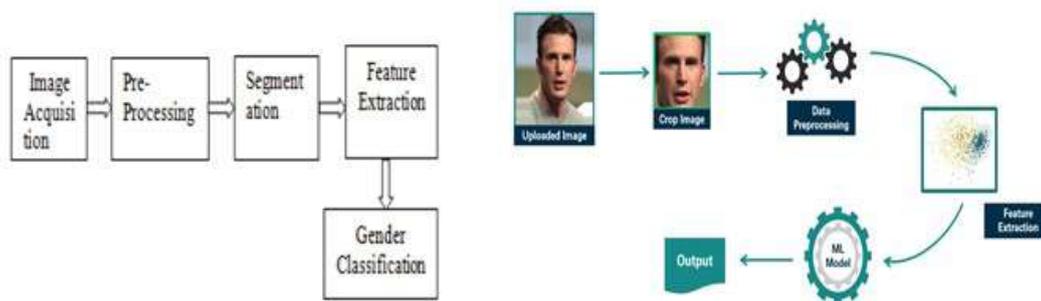
The System is built using Jupyter Notebook (A web-based interactive computing platform) for training model and used Flask for building frontend application. For classification and training model we are using Support Vector Machine (SVM).

Result and Conclusion: In a real-world, human gender classification using facial images is broadly accepted. This project provides detailed review of a system for human gender classification using machine learning. This system tested with not only different standard databases but also videos. The system has successfully recognized classification with good accuracy and found less accurate in some algorithms. The misclassification of the similar features can be improved using system parameters with high recognition rate.

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Department of Computer Science and Engineering

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Title of the Project : **"A Machine Learning Approach For Early Detection And Analysis of Schizophrenia Using fMRI"**

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Guide Name: Mrs. Neha Gopal N

Aswin M S   Janardhan P C

Saidarshan Nayak

Abstract: Schizophrenia is one of the most discussed psychiatric disorders which is approximately found in 1 of every 300 human beings in which the disorder is characterised by symptoms such as delusions, hallucinations, disorganised speech, disconnection from reality, etc. By using resting state fMRI we can evaluate and diagnose a person to get into the conclusion whether he is schizophrenic or not. Applying a bagging ensemble model we can analyse how different algorithms will perform with different approaches to the training model. A SVC kernel with tuned hyper-parameters resulted in a very good performing model which can easily segregate schizophrenic and non-schizophrenic human beings. The model can efficiently classify all the input values into a very robust interactive framework.

Project Details:
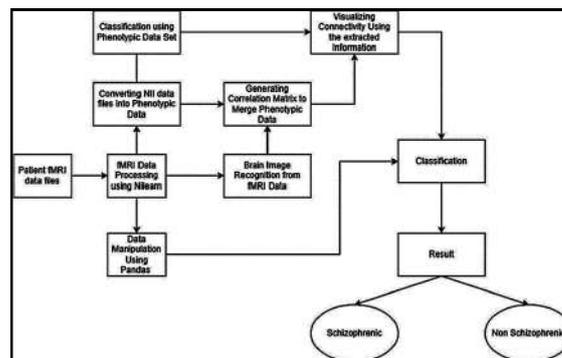
The software framework used for the deployment of this project is Jupyter notebook with Python version 3.10 which uses various libraries like nilearn, dash,numpy, pandas,matplotlib and various other libraries for easy visualization in a web port.

Result and Conclusion: The real time analysis and early stage detection of Schizophrenia will help to start the diagnosis of the disorder at an early stage. The main idea is to predict Schizophrenia with the highest accuracy possible. The method will enable the detection without consulting a psychiatric doctor.The implementation will be done using analysing Resting State fMRI. This new approach is promising as well as application and availability for future research on the same domain also can be accelerated as the data sets can be used in any fashion as needed.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

About The Department:

The Department of Electronics and Communication Engineering (ECE) started in the year 1999 with the idea of endowing young people with the necessary technical knowledge and professional skills needed to address the challenges in the rapidly growing field of Electronics and Communication Engineering and promoting research in this area. ECE department is a vital and pulsating department with highly competent, experienced and dedicated faculty members. The department meets the growing requirement of practical design engineers in the country and abroad. The curriculum in Electronics and Communication Engineering, framed by Visvesvaraya Technological University, lays greater emphasis on design principles and development of communication models, signal processing, image processing, VLSI and Embedded systems.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY
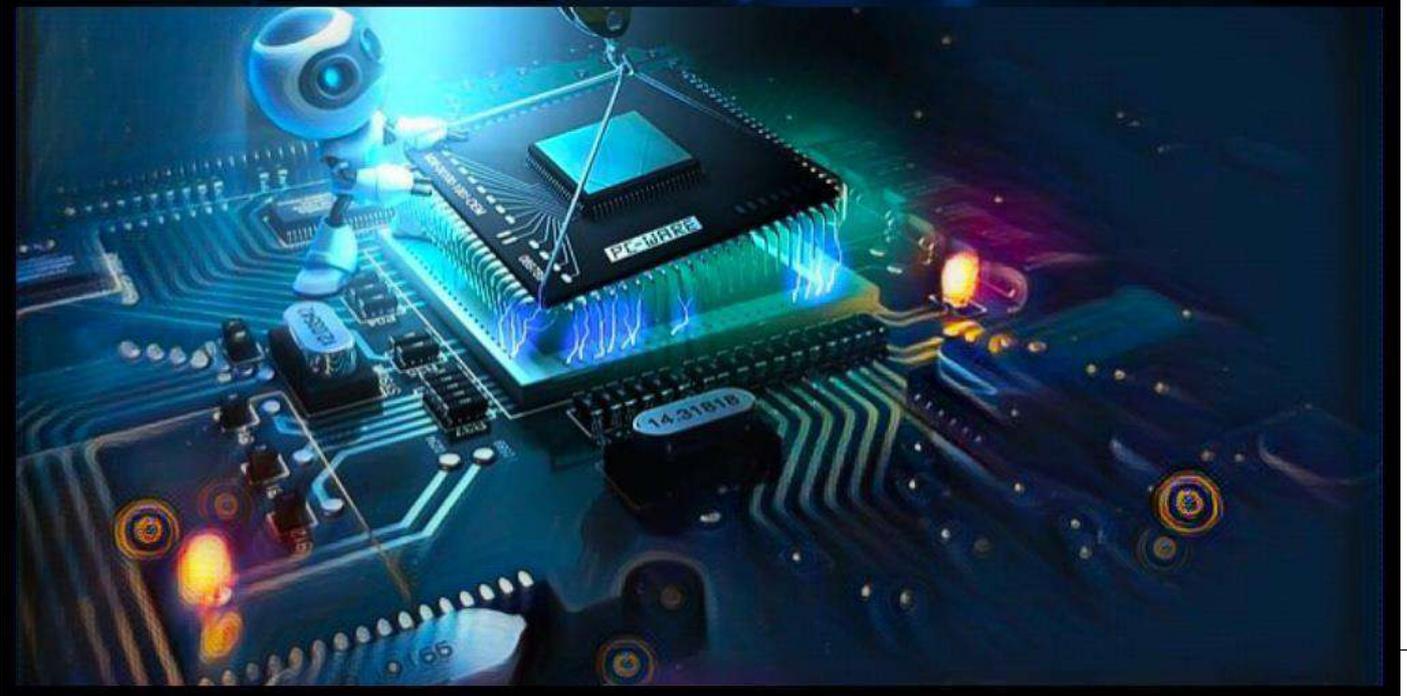
CONGRATULATIONS TO THE KSCST ACHIEVERS

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

45TH SERIES OF STUDENT PROPOSAL PROGRAMME KSCST FORTHE ACADEMIC YEAR 2021-2022

PROJECT TITLE: - ARTIFICIAL INTELLIGENCE BASED AUTONOMUS VACUUM CLEANER WITH DISINFECTION SYSTEM

GUIDED BY: - Dr. YOGESH G S

Amith Kumar K S
1EP18EC004

Mohammed
Umar
1EP18EC058

Nagarathna S Hiremath
1EP18EC030

Arjun C S
1EP17EC008

Project Title: Smart Digital Clock Display

Students Name: Akash V(1EP18EC003), N Bhargav Prasad(1EP18EC029), Ritvik Mishra(1EP18EC040), Samuel Raj S(1EP18EC044)

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Project Guide: Dr. Jayanthi Kumari T R

Project Abstract: In this modern world, nowadays everyone needs a comfort living life. Man has researched different technology for his need. In today's world of full of connectedness, people are becominghabitual to easy access to information. Now a day's people like and prefer wireless connection rather than wired connection because wireless connection can interact with people easily and it require less time. The goal of this project is to develop the Smart Clock Display to display the Status of classroom like which period is going on, and entire Time Table of the class. And also will act as Smart Alarm System for the maintenance of class and also during Exams, bydeveloping the Smart mobile Application to set the Alarm by communicating with the System using Wireless Connection.

Project Details: The Smart Clock will be useful for   students to check time and upcoming lecture. This will keep them updated about the lectures without having them check time table repeatedly. It will consist of an LED display which will show the time and the lecture. Node MCU is the heart of this device and it runs on a Embedded Code controlling the hardware.

Figure: The Proposed Architecture of the System
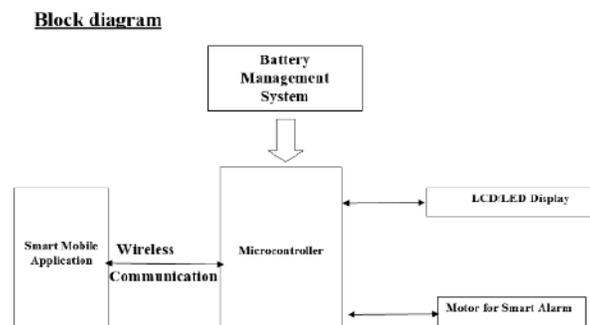
Result & Conclusion: Again some digital clocks loss their data whenever the power supply shuts down. But our designed multipurpose digital clock is accurate because of its Real Time Clock module that keeps track of the system time and update. The DS1307 has a built-in power sense circuit that detects power failures and automatically switches to the 3V Li Cell battery supply which is incorporated with the RTC. However, the Temperature displaying is an additional feature of our smart digital clock. It is possible to develop this system with only USD 7. So this version of digital clock.

Project Title: AI Based Smart Door With Face Mask Detection

Students Name: Abhishek M(1EP18EC001), Bharath C(1EP18EC009), Chaithra R(1EP18EC014), Kiran N(1EP18EC019)

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Project Guide: Dr. Sachin Sharma S

Project Abstract: In the pandemic situation, health plays an important role in everyone's life. Mostof the people are not aware of preventing themselves and their surroundings from this pandemic.Face mask is essential to prevent ourselves and others. So, people are in need to wear face maskregularly. People who visit home won't wear mask due to their unawareness which may affect people. People may not know if someone visits their home when they are not there. AI based smart device (Raspberry pi with AI model with camera) is proposed in this project which identifies whether a person is wearing face mask and gives us an alert message This device is integrated with a mobile app. This smart device automatically opens the door only if people wearface mask.

Project Details: The existing technology is available for detecting the face mask but our idea differs from the existing method is that the smart device will be inserted in the door and the mobile is designed so that owner will get notification and it also acts as a smart door and if the person wore face mask, the door will open automatically and if not then the door won't open. The proposed system detects whether a individual is wearing of a face mask and follows the safety measures or not using a detector which employs SSD for face detection and a neural network to detect presence of a face mask. If that detects a person with face mask the door will open and close and there will be an alert from the mobile app if people enter without mask.
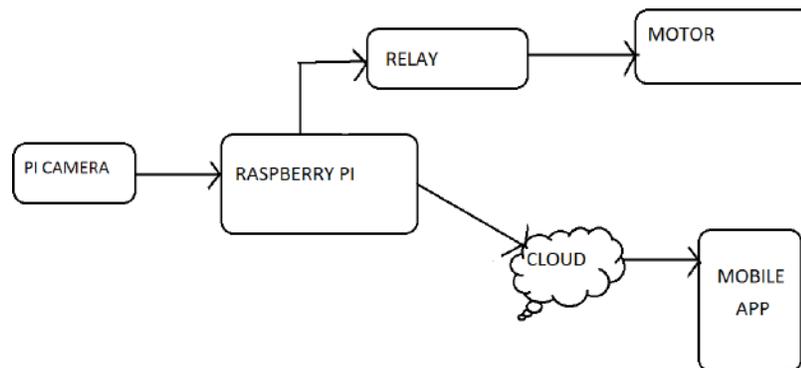
Figure: The Proposed Architecture of the System

Result & Conclusion: This smart device automatically opens the door only if people wear face mask. This device works both day and night. It can be used in multiple places like malls, shops, hospitals, temples and other public places. In this work, a deep learning-based approach for detecting masks over faces in public places to curtail the community spread of Coronavirus is presented. The proposed technique efficiently handles occlusions in dense situations by making use of an ensemble of single and two-stage detectors at the pre-processing level.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: IOT-BASED SYSTEM FOR MASK DETECTION AND TEMPERATURE SENSING

Students Name: Sinchana H N(1EP18EC053), Sowrabha K P(1EP18EC054), Supritha R(1EP18EC055), Veena V M(1EP18EC060)

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Project Guide: Dr. Anita R

Project Abstract: Effective strategies to restrain COVID-19 pandemic need high attention to mitigate negatively impacted communal health and global economy, with the brim-full horizon yet to unfold. In the absence of effective antiviral and limited medical resources, many measures are recommended by WHO to control the infection rate and avoid exhausting the limited medical resources. Wearing a mask is among the non-pharmaceutical intervention measures that can be used to cut the primary source of SARS-CoV2 droplets expelled by an infected individual. Regardless of discourse on medical resources and diversities in masks, all countries are mandating coverings over the nose and mouth in public. To contribute towards communal health, this paper aims to devise a highly accurate and real-time technique that can efficiently detect non-mask faces in public and thus, enforcing to wear mask.

Project Details: Face mask detection refers to detect whether a person is wearing a mask or not. The Raspberry pi receives its input via the Camera. Camera captures a picture of a person and determine whether the person is wearing mask or not, Uses a temperature sensor to determine the person's temperature. The Temperature readings and mask on or off results will be shown
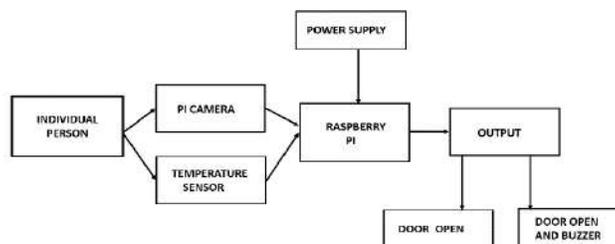
Figure: The Proposed Architecture of the System

Result & Conclusion: A Deep learning-based approach for detecting masks over faces in public places to curtail the community spread of Coronavirus is presented. The proposed technique efficiently handles occlusions in dense situations by making use of an ensemble of single and two-stage detectors at the pre-processing level. The ensemble approach not only helps in achieving high accuracy but also improves detection speed considerably. Furthermore, the application of transfer learning on pre-trained models with extensive experimentation over an unbiased dataset resulted in a highly robust and low-cost system. The identity detection of faces, violating the mask norms further, increases the utility of the system for public benefits.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: DESIGN AND DEVELOPMENT OF FRQUENCY RECOUNFIGURABLE MULTI BAND COMPACT ANTENNA USING SWITCHABLE ELEMENTS FOR WIRELESS AND APPLICATIONS

Students Name: Muskan A(1EP18EC028), Pranav B S(1EP18EC008),Vinay R(1EP18EC062), Wajahath ali khan R(1EP18EC063)

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Project Guide: Dr. Chandrappa D N

Project Abstract: we present a simple reconfigurable multiband antenna with two PIN diode switches for WiMAX/WLAN applications. The antenna permits reconfigurable switching in up to ten frequency bands between 2.2 GHz and 6 GHz, with relative impedance bandwidths of around 2.5% and 8%. The proposed antenna has been simulated using CST microwave studio software and fabricated on an FR-4 substrate. It is compact, with an area of 50×45 mm^2, and has a slotted ground substrate. Both measured and simulated return loss characteristics of the optimized antenna show that it satisfies the requirement of 2.4/5.8 GHz WLAN and 3.5 GHz WiMAX antenna applications. Moreover, there is good agreement between the measured and simulated result in terms of radiation pattern and gain.

Project Details: Selection of frequency: Selection of Frequency: Particular frequency should be selected for designing antenna. Here we are selecting the frequency between L5 and S band.Determination of length and width of the: To determine the length, width and other parameters of microstrip patch antenna using available standard formulas.By using HFSS Software design patch antenna: HFSS (high frequency structure simulator) software is used to design the antenna where simulation is done. Determination of required parameters: by using different parameters we can build and simulate antenna. Finalizing the optimised results: Once the optimum result is obtained from simulation, we can go for the fabrication process.
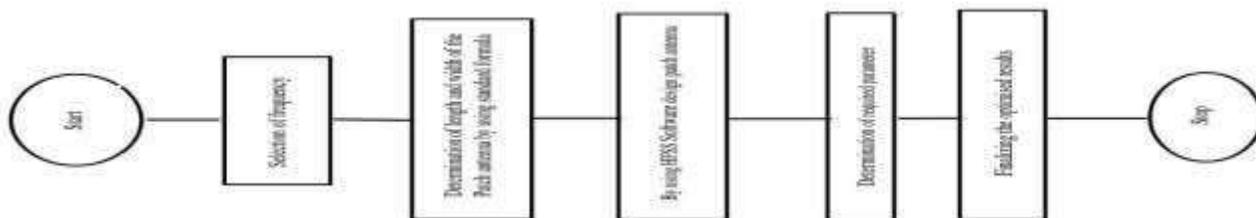
Figure: The Methodology to be followed

Result & Conclusion: The simulated results of prototype antenna are discussed. the simulated values are obtained respectively via HFSS. the frequency is radiating in l band (1-2ghz) and s band(2-4ghz). the different antenna parameters for the proposed antenna's two switching states are listed below.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Artificial Intelligence Based Autonomous Vacuum Cleaner with Disinfection System

Students Name: Amith Kumar K S (1EP18EC004), Uravakonda Mohammed Umar (1EP18EC058), Arjun C S (1EP17EC008), Nagaratna S Hiremath (1EP18EC030)

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Project Guide: Dr. Yogesh G S

Project Abstract: "Maid in India is more important than Made in India in modern society". However, in the hustle and bustle of today's world, cleanliness has been neglected. To make life of mankind more comfortable, with help of machines and technologies a smart floor cleaner with voice recognition feature is introduced. This smart floor cleaner is both an autonomous and manual controlled cleaning machine with UV disinfection system used to simplify and achieve the task of cleaning by means of its dry and wet modes. All round cleanliness and hence good health can be achieved. This is made budget friendly keeping in mind the different economical classes in society. With the additional features of artificial intelligence and voice recognition module, it will be made cost-effective. The cleaning purpose is specially carried out by continuous relative motion between a scrubber and the floor surface, and bacteria cleaning by UV LED strip.

Project Details: The robot is designed to move autonomously throughout the room. Infrared obstacle sensors that are interfaced to the Raspberry Pi 3 serves the role for obstacle detection. Moreover, a manual control of the robot is established by using the keypad to control the robotic movements. In one sweep simultaneous sweeping and mopping is facilitated. The water pump allows the flow of water to mop an area. A vacuum cleaner is used to suck out the dust and dirt encountered by the robot. The app allows the user to control the accessories on the robot thus enabling a judicious use of power and water.
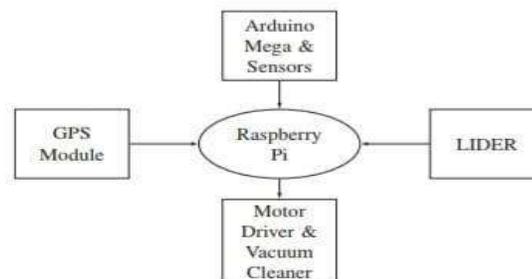
Figure: Block diagram of the system

Result & Conclusion: This robot includes both cleaning and mopping. With this work, we tried to reduce the cost of the robot and make it more compatible with the Indian users and the industries. To further enhance the navigation performance of the robot, feedback sensors such as optical encoders can be integrated. Cleaner brushes can be added to vacuum cleaning mechanism to increase the efficiency of dust collecting.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: ESP8266 based smart kitchen with automatic monitoring System using webserver

Students Name: Raksha P S(1EP18EC038), Shilpa P(1EP18EC050), Swetha P(1EP18EC056), Tanuja C M(1EP18EC057)

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Project Guide: Dr. Rajesh L

Project Abstract: With passage of time, technology is rapidly growing. People and daily life processes are highly dependent on internet. The Internet of Things (IoT) is an area of magnificent impact, growth and potential with the advent and rapid growth of smart homes, smart agriculture, smart cities and smart everything. Internet of Things (IoT) construct an environment in which everything is integrated and digitalized. In our every day's life, safety and time is a major issue.

Project Details: Smart Kitchen is the application based on web server. The code written by the user in Embedded C language is bumped on the Arduino UNO board. The gas sensor is used to detect the leakage in the LPG gas, if there is a leakage value greater than threshold it automatically turns on the exhaust fan. LRD sensor is used to detect the intensity of light where it's low or high, if the intensity of light is low it automatically turns on the LED lights to make the intensity normal. It provides a state of the art method of home automation with ThingSpeak platform.
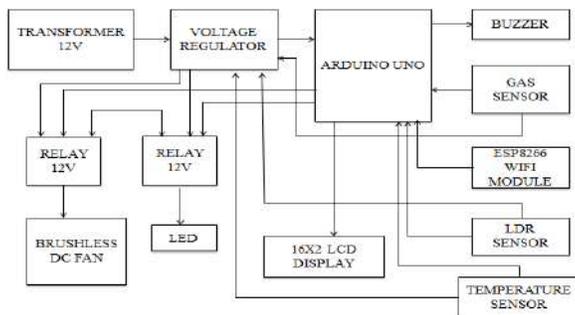
Fig: Block Diagram of Smart kitchen Model

Fig: Block Diagram of ESP8266

Result & Conclusion: The layout of each sensor is adjusted to the actual system condition. All data sent by the sensor can be accepted by Arduino to determine an action for the output device. Gas leakage leads to severe accidents resulting in material losses and human injuries. Gas leakage occurs mainly due to poor maintenance of equipments and inadequate awareness of the people. Hence, LPG leakage detection is essential to prevent accidents and to save human lives. This monitoring and detection system is proposed mainly to meet the safety standards and to avoid fire accidents because of leakage. ThingSpeak provides improved security, data management and data visualization. Wiring and switching cost is reduced by utilizing wireless networks.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Design of a Fuzzy Controller for a Hydraulic Transplating Robot.

Students Name: Pavan Kumar(1EP16EC063), Uma Shankar R(1EP17EC063), Manjunatha N(1EP17EC036), Sanjay B R(1EP18EC045)

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Project Guide: Dr. Harshavardhana Reddy K

Project Abstract: At present, there is a problem that the output accuracy of the transplanting manipulator is low due to interference from external factors. To solve the problem of low output accuracy of the transplanting manipulator caused by the interference of external factors to the displacement tracking of the hydraulic seedling picking-up system, a control method of the transplanting manipulator based on the fuzzy PID control strategy is proposed. First of all, the hydraulic seedling taking system was modeled and analyzed, and the total output displacement of hydraulic cylinder piston when the valve core input displacement and external load force were acted on simultaneously was given. Then the PID control method of the hydraulic seedling picking-up system was designed, and by combining the fuzzy control theory with PID control theory, a fuzzy PID controller was designed, which was capable of on-line adjusting the PID parameters. MATLAB/Simulink was used to simulate the control system, and the control effects of conventional PID control and fuzzy PID control on the hydraulic seedling picking-up system were compared.

Project Details: In this work the fuzzy control system designed for controlling the position deviation of the piston. The fuzzy PID controller took the position deviation e and its change rate as the input language variables and Kp,Ki and Kd as the output language variables of the fuzzy.
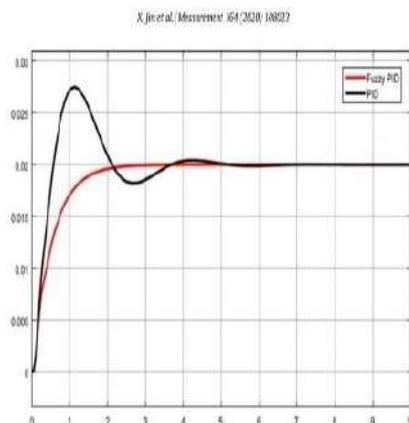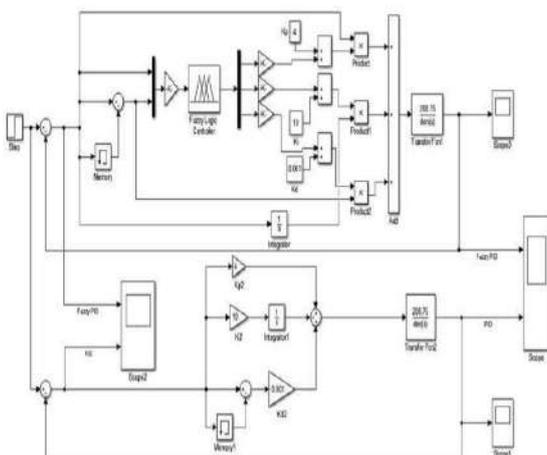
Controller	Setting Time	ISE
PID Controller	7 sec	95.85
Fuzzy Logic Controller	5 sec	85.02

Fig1. Simulation Circuit Diagram   **Fig.2 Simulation Results**

Result & Conclusion: In this work, authors designed the fuzzy logic based PID controller using MATLAB simulation for Robotic Manipulator. The Transfer Function is derived for the manipulator with physical parameters. The PID and Fuzzy based PID controller is applied to the derived transfer function with the setpoint as step response. The Setting time of the PID controller is 7 sec and for Fuzzy PID is 5 sec. IAE error also less for proposed Fuzzy PID method.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Crop monitoring system using IOT

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Project Guide: Prof. Avinash B V

Project Abstract: In order to empower the growth of sustainable agriculture, it is important to monitor the environmental conditions in and around the field. The parameters that have to be monitored are soil moisture, humidity, temperature, weather conditions, pest population etc. Online crop monitoring helps farmers to stay connected to his field, from anywhere and anytime. Various sensors are used to monitor and collect information about the field. Prototype for the same is proposed and that information will be sent to the farmer through a SMS to his phone.

Project Details: Monitoring is the regular and careful inspection of crops throughout the growing season. When monitoring crops, a farmer walks through crops to look for crop problems. Crop monitoring is designed to make easy farming activities, while at the same time ensuring the best user experience and get a good yield. Once you have added your fields to the system and you will have all of the data on one screen and can manage them all remotely. Though, you will get weather risk alerts and notification about changes in the values you have selected in the custom settings. This technology helps farmers to manage multiple fields, cut costs on resources and also take reliable decisions. The performance of the agriculture sector mainly crop production, is largely dependent on dynamic weather changes. The decision-making procedure for the management of national food security thus needs current
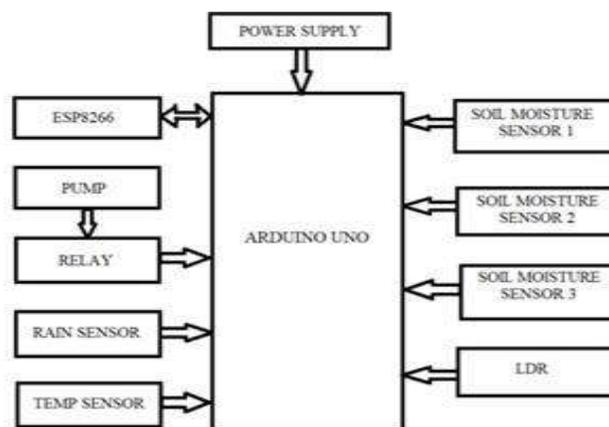
Figure: The Proposed Architecture of the System

Result & Conclusion: In the proposed project Different crops have been monitored with high accuracy for good yield. Water spraying also was successfully done by taking the results of soil moisture level. other parameters such as soil pH and other features like temp, humidity, day/dusk all these results will be updated in the application successfully. By these parameters and by using IoT we can easily know what is the status of that particular land, sitting in any part of the world.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Charging Station for E-Vehicle using Solar with IOT

Students Name: Sanjeev A Upadhyaya(1EP18EC046), Aruna D(1EP18EC008), Sharif Sab(1EP18EC048), Shashanth Pavan S N(1EP18EC049)

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Project Guide: Dr. Rajesh L

Project Abstract: As population increases there is also an increase in usage of automobile vehicles. Current vehicles mostly are dependent on fossil fuels such petrol, diesel, LPG etc. Fossil fuels are non-renewable resource which is one time use. To find an alternative energy resource which is renewable and easily available for daily use different types of vehicle engine development has been conducted, one such energy source is electrical energy. After successful development across years vehicles powered by electric energy are becoming the general trend worldwide because of its many advantages. As such charging stations for electric vehicles are in need. To accommodate an easy access, we have designed a solar powered charging station. Solar energy is not only a renewable energy resource but also easy to obtain from Sun.

Project Details: A solar PV array plays a vital role in a project the model simply uses torches with LDR sensor to track the position for generating power from the source which helps the continuous flow of energy. Since the tilting angle of the sun varies from 0° to 180°, two sensors should be built for either direction i.e., one in the left and other in the right. Then, the collected electric source from the PV cell is transferred to the converter together with the buck regulator which stabilizes the power.
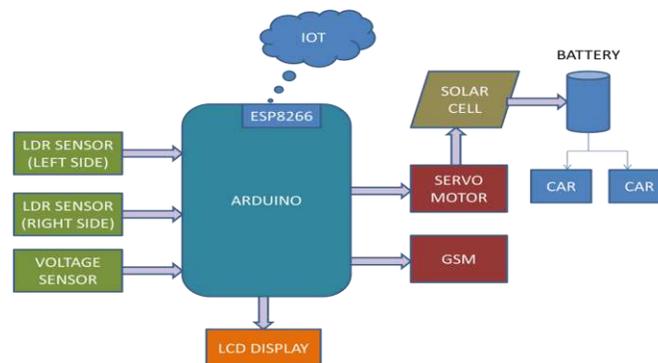
Figure: The Proposed Architecture of the System

Result & Conclusion: The vehicle user can easily check to the destination to reach the charging station and might view the withdrawal of battery voltage from the system the data stored within the Arduino can withstand until battery fails to charge. For the long-term use, multiple users for the e- vehicle who settles the station are stored and upgraded within the database so as that the distribution to the assorted user are often monitored. Striving for a greener and eco-friendly future depends on what quantity actions we put in so on reduce and while not stop those humane behaviors supported car usage that increases the number on environmental pollution.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: IOT Based Medicine Recognition System for elderly

Students Name: Sahana N(1EP18EC042), Samanvitha S(1EP18EC043), Sanju Kumari R(1EP18EC047), Saniya Zahera(1EP16EC084)

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Project Guide: Prof. Hemavathi N V

Project Abstract: The proposed method is an intelligent medicine recognition system based on deep learning techniques. The proposed system can assist chronic patients in taking multiple medications correctly and avoiding in taking the wrong medications, which may cause drug interactions, and can provide other medication-related functionalities such as reminders to take medications on time, medication information, and chronic patient information management.

Project Details: Input from the camera is taken as input to the Raspberry Pi where the image is deleted and the data is shared to the Android. • As shown the fig no. 2, the camera captures the picture of the medicine by the information in the QR Code present on the medicine prescribed by doctor. • The camera and push button are connected to the Raspberry Pi OS. The python runs on Raspberry Pi OS, which decodes all the information. • The cloud is AWS. At the output we have buzzer, which beets if the medicine not prescribed by the doctor is given. • Also a warning message are mail is send to the us.

Figure. Block diagram

Result & Conclusion: As a result, when using the proposed system, chronic patients do not need to worry about forgetting to take their medicine. They need only download the proposed Android-based mobile device app and scan the QR codes on their medicine packages to store the corresponding medication information. Then, they can access related services, such as medication reminders and records. To solve the problem of taking the wrong medicine, in this paper, we have successfully developed an intelligent medicine recognition system named STMed-Box based on deep learning technology.

East Point College of Engineering & Technology

Department of Electronics & Communication Engineering

Project Title: IOT BASED ATM MONITORING USING CLOUD DATA AND SENSORS

Students Name: Chandrakala M(1EP18EC015), Monika A L(1EP18EC025), Monisha C(1EP18EC026), R Mounika(1EP18EC036)

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Project Guide: K Rajesh

Project Abstract: In this system, we are using sensors like IR sensor, LDR sensor, Temperature sensor, Smoke sensor, and the vibration sensor. The IR Sensor is used to monitoring the person IN/OUT in the ATM room. If more than 2 persons enter the ATM, then it gives an alert to the user. LDR sensor is used to monitor the light intensity inside the ATM room. If the LDR output values are lower than the threshold value, then the ATM room light will automatically switch ON. Temperature Sensor is used if the temperature inside the ATM room goes below the specified limit, then the AC can be switched off, thus we can have a power saving. Smoke Sensor is to monitor the smoke level in the ATM room. If the smoke sensor value crosses the threshold value, the buzzer will get ON automatically. The Vibrator Sensors used to monitor the ATM when someone tries to break. This will lock the door and send the message to the police station. The whole system relates to the IOT. So the user can monitor the ATM (like temperature level, Smoke) from anywhere and also can control the loads (Like AC, light, door) from the long distance.

Project Details: The attacks on ATM's are steadily rising and this is a serious problem for law enforcement and banking sectors. So there has to be a system developed and put into place that will make sure the ATM is safeguarded and also gives customers the confidence when using the ATM. Currently, to provide protection to the ATM and to the customers using it, there are CCTV security cameras and emergency sirens.
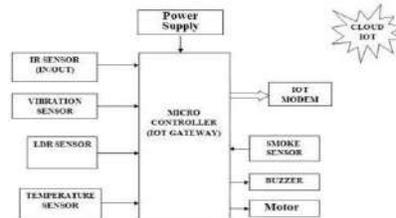
Figure: The proposed ATM system architecture

Result & Conclusion: The proposed system has been designed to support the principle of multi-layer security. With the proposed system internal security has been stressed and it stops the entry of a person within the ATM or perhaps if theft person gains entry, so immediate action is taken. Security officers will take up immediate actions whenever it happens within the ATM.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Secured IOT Based Covid Patient Monitoring

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Project Guide: Prof. Vijaya Madhavi C M

Project Abstract: Health monitoring system using IOT describes the collection and interoperation of patient data collected from the sensors from the patients through IOT Technology. A watch band has been designed to collect sensor data from the patient will support the doctor in the emergency situation for the better and improvement of patient health.

Project Details: When a person is tested as covid positive CT chest image of the person is taken to find out if the person has severe infection or mild symptoms. Patient is hospitalized if the symptoms is severe else the patient is home isolated. Watch band is provided to the patient which consists of temperature sensor, pulse sensor, touch sensor, GPS and an camera to lively monitor the patient. If the sensor value exceeds the threshold data then an alert will be sent to the doctor doctor in the emergency situation for the better and improvement of patient health.
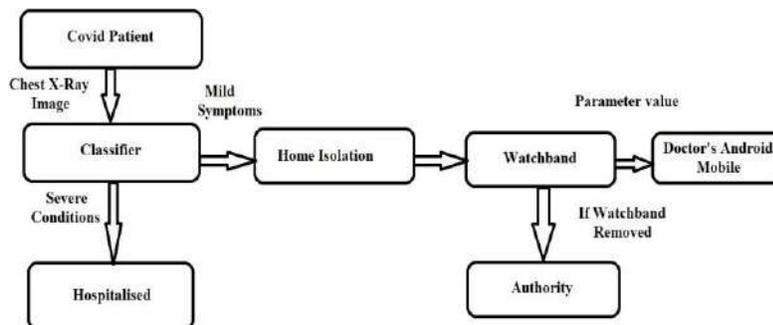
Figure: The Proposed Architecture of the System

Result & Conclusion: Classification of x-ray images of severe and mild symptoms helps to recognize whether a patient should be home quarantined or hospitalized based on the predicted output. App development that helps doctor to monitor the patient health. Monitoring of patient's health using IOT technique for better improvement of patient.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Low-cost Mechanical Ventilator With Patient Monitoring

Students Name: Bhargavi N(1EP18EC010), Brilya E V(1EP18EC011), Caroline Kasper(1EP18EC013), Vidhya R(1EP18EC061)

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Project Guide: Mr. Praveen Kumar KC

Project Abstract: The last few years have seen an increased demand for ventilators in the treatment of patients with COVID- 19, a fact that led to a ventilator shortage world wide . The consequence of this shortage is calamitous, especially in deprived areas. Even well-equipped hospitals have developed protocols for sharing the same ventilator between two patients. As an attempt to face the worldwide problem of ventilator shortage, researchers have started an initiative of producing low-cost, open-source ventilator. This project contributes to this initiative. This project's main contribution is to describe the construction of a low-cost, open-source mechanical ventilator for patients with COVID-19. To help a person breathe when they find it difficult or are unable to breathe on their own.

Project Details: There will be a frame, where a motor is fixed for the inflation and deflation of the balloon of the ventilator. when the motor runs the oxygen will get compressed and the oxygen is supplied to the patients when it comes back to its original shape the air is again filled in it. The motor is driven by the battery for the power supply. The Mechanical model is shown below and The Embedded model consist of Arduino uno Microcontroller, Temperature sensor is connected to controller to measure the Patient body temperature, Pulse sensor to measure the pulse rate of the Patient and oxygen sensor to measure the oxygen rate.
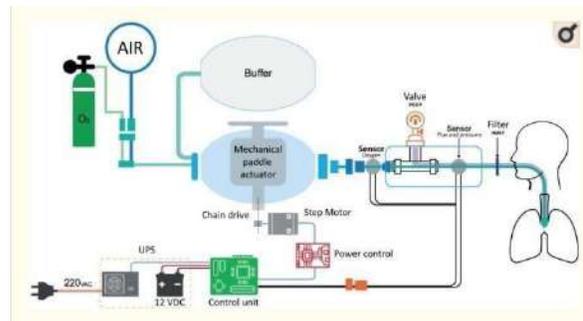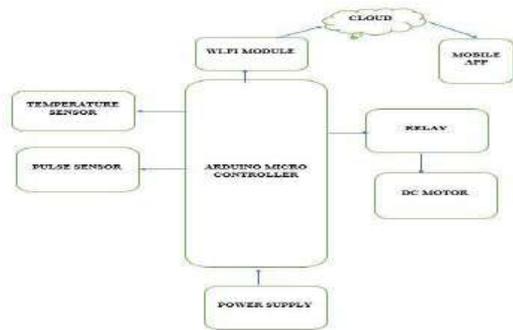
Figure: The Proposed Architecture of the System

Result & Conclusion:. Since the start of the COVID-19 pandemic, researchers have been striving to help society face many problems caused by this pandemic. Among the recent initiatives, one has drawn the authors' attention: producing low-cost, open-source mechanical ventilators. The motivation comes from the worldwide shortage of mechanical ventilators in the treatment of COVID-19 patients—mechanical ventilators keep severely ill patients alive. This project has detailed the construction of a functional, low-cost, and open-source mechanical ventilator.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Smart Agriculture System Using Image Processing

Students Name: Ananya S(1EP18EC006), Divya S(1EP18EC016), Pooja M(1EP18EC033), Priyanka S U(1EP18EC035)

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Project Guide: Mrs.Radhamani R

Project Abstract: Agriculture is the pillar of Indian economy and more than 50% of Indian population are dependent on agriculture for their survival. Biologically, temperature and humidity plays important role in healthy crop growth and development. In this project an automated agriculture system is developed which monitors the environment using sensors. An IoT based prototype is developed using the NodeMCU controller to implement a real time agriculture with use of image processing and AI to capture infected plants and take necessary actions.

Project Details: This project is to implement a smart environment monitoring system with internet of things. The plant growth is significantly affected with its surrounding environment and its maintenance is almost necessary to have proper plant growth. This project implements and iot cloud based architecture for the said monitoring. With this implementation the users are able to analyse the temperature humidity and moisture for the plant growth to be smooth and conventional. Although it is very hard to determine the exact parameters and controlling the environment in an exact way can be combursome, essential changes and adjustments can be made upon knowing the actual parameters at any given time. Monitoring of the environmental characteristics allows the user to achieve a smooth environment for the plant growth. Further, plant health is one of the key feature and an essential element in a farm as it can have a negative impact on neighbouring plants as well if not monitored carefully. Users are now able to capture the image and identify if any plant is infected through the interface and treat them accordingly.
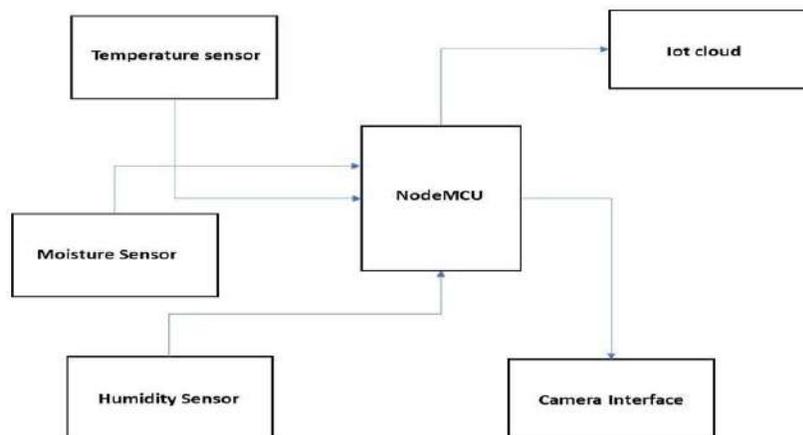
Figure: Block Diagram of Smart Agriculture System

Result & Conclusion: Project provides a survey of various techniques for plant disease detection. Main characteristics of disease detection are speed and accuracy. Operating on the development of automatic, is used for detection disease on the unhealthy leaf. In future it can be extended for development of hybrid algorithms & neural networks in order to increase the recognition rate of final classification process.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Safe Cloud Based Face Recognition Attendance System Beneficial During Pandemic (With Temperature And Mask Check)

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Project Guide: Dr. Leena Kunath

Project Abstract: The much recent global pandemic, COVID-19 has brought drastic changes to the livelihood of people from all avenues of life across the nation. As normalcy is being slowly restored, it is also essentially crucial that the health and wellness of members are ensured. Instead of the manual biometric system, facial recognition can be deployed to mark the presence of the members. A non-contact infrared sensor can be utilized to check for the body temperature of the individuals. If the body temperature exceeds the threshold value, an intimation will be sent to the higher authorities concerning the wellness of the individual. The attendance checking feature has been clubbed with health verification so that every employee will mandatorily report before the system. The data generated by the static portal setup is recorded by the device daily which will then be uploaded into a database and stored on the Cloud.

Project Details: The setup to mark the attendance while checking the health condition of an individual will be propped up in a fixed location. When the individual checks into the organization /institution every day, it will be mandatory for him/her to report before the machine. Only after the welfare of the individual is ascertained, the presence of the individual will be noted. In instances if the individual is unwell, the notification will be automatically sent to the designated higher authorities.
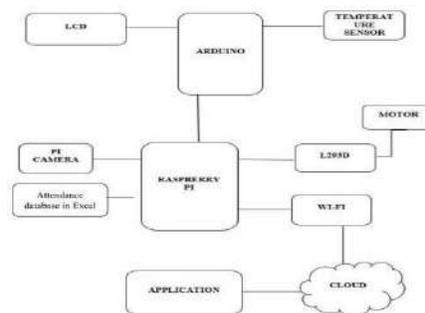
Figure: The Proposed Architecture of the System

Result & Conclusion: The proposed device prototype described in this paper can help in two ways – via automatic evaluation of bodily temperature at various checkpoints and by enforcing proper hygiene standards related to face masks. Additional integration with RTLS systems can help gain valuable insight into personal interaction and, in case of confirmed health risk, help pinpoint persons which were in close contact with the suspected individual (smart quarantining).

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Smart Parking System using IOT

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Project Guide: Prof. Asha S

Project Abstract: Smart parking system using IoT is a project which is based on solving the issues of parking in metro cities . The rapid increase in adoption of vehicles as daily life commute has led to issues in parking spaces. The proposed project of Smart Parking System using IoT consists of onsite deployment of sensors which detect the avaliability of slots and update it in the server for the access of the clients . The proposed project helps in reducing carbon emissions and save time of people in search of parking space.

Project Details: The day to day industrialization of the developing countries has led to the increase in the need for vehicles. This results in the emerging of new vehicles into the market. There is increase in the number of vehicles but not increase in the parking space. Most time is wasted in search of the vacant parking place. This is the main reason for the parking problemin busy areas. In order to solve the problem, the need of automatically parking system, online (using internet) parking slot booking, multi-story parking garage etc., are increased.
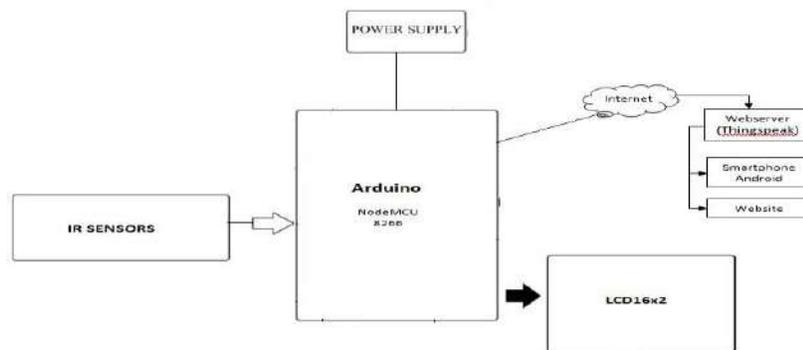
Figure: The Proposed Architecture of the System

Result & Conclusion: The present time brings us a constant increase in the intensity of road traffic. This problem brings strong negative externalities of urban transport, such as environmental pollution, noise, congestion, and traffic accidents resulting from high traffic density. Solutions for this problem are always time-consuming and expensive. There is no more space, so there is only one more option. We should improve the efficiency of parking.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Laser light security system using Arduino

Students Name: Gagan R(1EP17EC022), Diwakar P(1EP17EC021), Kenny Anthony(1EP17EC030), Jeevan H V(1EP17EC028)

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Project Guide: Kiran Kumar K

Project Abstract: Technology is developing day by day in the world. Now days the crime gang also improves their technology to carry out their operation. As human's cannot do a work continuously for a long time as their they get exhausted, get sick, need rest and much more. So with the help of the technology you won't have to worry about protecting your house far enough out because that laser beam is going to travel further than you might think. It's also able to reflect and bounce around several times in that distance, meaning a single beam can cover more distance than you might think. This project can be implemented anywhere, Many people secure their home, office, shops, warehouses, etc with the LASER beam security system

Project Details: Any person or object crossover the laser light, automatically the buzzer starts ringing. Laser beam goes through long distance without scattering effect and the ray is almost invisible. This project involves the use of Arduino UNO, Laser light, Buzzer, LDR and a simple program. The LDR is sensitive to light. The LDR is connected to the Arduino UNO. When the laser bean is interrupted and can't reach the LDR, its voltage output changes, and the circuit senses the change and puts out a warning signal and then the buzzer starts alert signals .

Figure: The Proposed Architecture of the System

Result & Conclusion: The Laser Security System has been successfully designed and developed. The buzzer is turned on as the laser beam falling on the LDR is interrupted . The laser and LDR System are highly sensitive with a great range of working. The LDR has to be placed in dark place or inside a case so that the other source of light except the laser beam doesn't affect the LDR. This helps the circuit to work faster and properly. This highly reactive approach has low computational requirement, therefore it is well suited to surveillance, industrial application and smart environments.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electronics & Communication Engineering

Project Title: Internet Of Things (Iot) And Gsm Based Smart Medicine Box

Students Name: Manojkumar M(1EP16EC042), Soorya V(1EP16EC094), Bharath R(1EP16EC110),Keshava G (1EP17EC031)

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Project Guide: Prof. Kanchana

Project Abstract: Though the health care society is slow in adopting IoT (Internet of Things) than other fields, IoT in the field of medicine is destined to keep the people(Covid19) safe and healthy where the main purpose is to decrease the cost of health care in the coming years. A smart IoT based healthcare system has been proposed here, which contains an intelligence medicine box associated with sensors and server for regular health monitoring. This smart medicine box with wireless internet Connectivity helps the patients to get regular health care and create easy communication between doctor and patient without meeting physically.

Project Details: This smart medicine box with wireless internet Connectivity helps the patients to get regular health care and create easy communication between doctor and patient without meeting physically. The proposed medicine box helps the patient to take the right medicine at the right time along with an Sms which will help the patient to take the medicine. Doctors will get health parameters of the person as Sms alerts and IoT plotting using Thingspeak cloud platform.
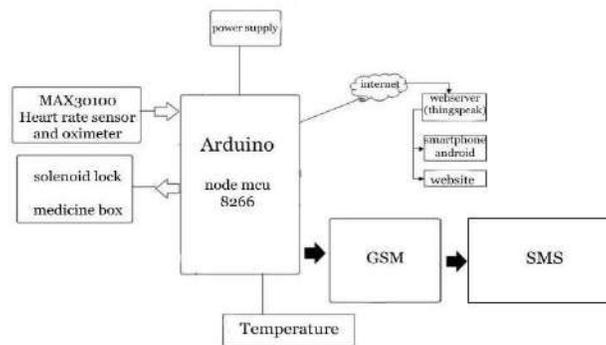
Figure: The Proposed Architecture of the System

Result & Conclusion: Doctors will get health parameters of the person as SMS alerts and IOT plotting using Thingspeak cloud platform, using the health parameter like temperature and Heart rate and oxygen saturation rate individual Medicine compartment will be opened, Even there is timely based medicine reminder for the person with automatic unlock feature.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Title: Voice Assisted Smart Vehicle

Student Names: Ashwini K P(1EP17EC010), Dhanushree S Kumar(1EP17EC018), Jannifer Roy(1EP17EC027)

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Guide Name: Prof. Gayathri V

Abstract of Project: This project assembles a voice-controlled automobile that may be controlled by voice commands which responds in accordance with the corresponding voice control. Controlling of machineries using speech was not possible earlier. This investigation will help us in executing this technology for the handicapped individuals who cannot drive the vehicle on their own. However, sound and space handling require prospective development. Simple voice commands like left, right, forward, back, stop is used to conduct the car. A Bluetooth module (HC-05) can be used to set a communication link between the car and human voice commands via Android Application. The RF transmitter of the Bluetooth may take human voice commands which are converted into encoded digital information for the benefit of an adequate range (up to 100 meters) from the car. The receiver decodes the data before feeding it into microcontroller (ATMEGA16U2) to induce DC motors via motor driver L293D for necessary work. Moreover, the car will have the ability to detect the barrier and informs the user to prevent the barrier by picking different route with the assistance of Ultrasonic detector. Considering this attribute for the future extent might prove a milestone in vehicle automation. Further the project can be developed using IoT technology where a user can control the car from any part of the planet.
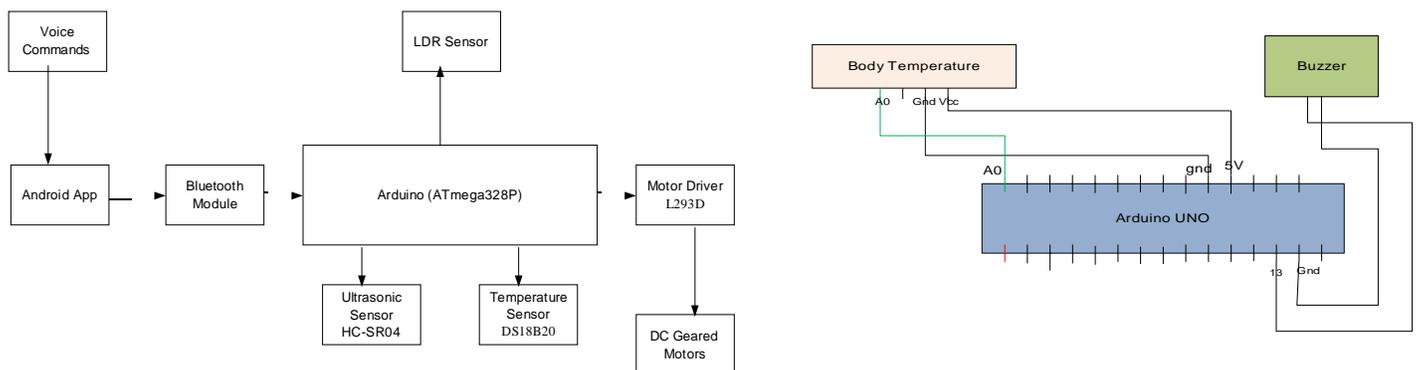
Fig : Block diagrams of voice assisted smart vehicle

Conclusion: A low-cost Autonomous vehicle is developed based on voice commands in this project. The user may be located at some remote location, but as long as he/she is connected to the Internet, the vehicle will follow voice instructions. The idea is implemented through android voices transfer through Bluetooth, Arduino. The instructions are fed to the vehicle. Also, we can add the features like obstacle detection for avoiding accidents through ultrasonic sensor, automatic vehicle head light based on the presence of lightness to save the battery, and checking the human body temperature of driver for covid control mechanism by giving alert.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Title: SOLAR BASED AGRICULTURAL ROBOT

Student Names: Anubhav(1EP15EC008), Abu Bakr(1EP15EC048),
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Guide Name: Prof. Vijaya Madhavi C M

Abstract of Project: With the advancement of science and up-to-date technologies, the eye of scientists is getting directed towards two fields – Farming and Robotics systems. But the mix of those two technologies can serve efficiently for several problems by overcoming the limitation of previous technologies. These operations are controlled via a Bluetooth module. Voltage sensor used to read the usage of voltage and to be displayed on LCD and a trolley will be added to transport the field goods to the warehouse and a 360-degree camera will be installed on the robot body for surveillance purposes. The main feature of our project is solely dependent on the Arduino UNO and the Robot. As we know that entire system is automation and automatically connected through the mobile app and it controls to power throughout the system.
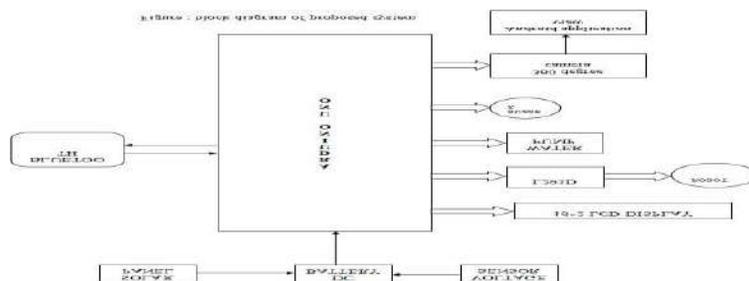
Fig : Block diagrams of voice assisted smart vehicle

Conclusion: An agricultural robot with humidity sensor and irrigation system is designed and presented. The proposed robot efficiently handles irrigation and goods carrying in agricultural area by making use of solar light for charging its battery and two configured motor to move the vehicle. The ensemble approach not only helps in irrigation but also in humidity sensing and automatic irrigation with the help of sensed humidity. Furthermore, the application of solar based agricultural robot on pre-trained models with extensive experimentation over an unbiased dataset resulted in a highly robust and low-cost system.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Abstract - 2022

Achievements

Awarded KSCST Grant for Student Project

1: AutomatedBus Crowd Management

2: Personal Git Server

Department of Information Science and Engineering functioning since 2001 with an intake of 120 and offering BE degree in Information Science and Engineering with a vision to mould the students with basic engineering knowledge, necessary IT skills to provide young dynamic engineers with high caliber and commitment towards the development of information and knowledge based solutions for the real-world paradigms.

Dept of ISE motivates students through Project Based Learning (PBL) that inculcates Creative Thinking, Critical Thinking, Teamwork, Problem Solving and Effective Communication among students.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Title: Automated Bus Crowd Management

Student Names: Jerrin Joy [1EP18IS032], Kruthik Gandhi H A [1EP18IS038], Manish G [1EP18IS043]

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Project Guide: Dr. Udayabalan Balasingam

Abstract of Project:
The aim of this project is to design an automatic railway gate controller using micro-controller. This mainly aims at preventing accidents at unmanned level crossing where large many accidents take place every day. The automatic railway gate controller make use of two sensors placed at both sides of the gate placed at a particular distance. The sensor detects the arrival of train and sends signal to the micro-controller to close the gate and similarly the sensor at the other end detects the departure of the train and sends signal to the micro-controller to open the gate again for public use. The usage of this automatic railway gate controller using micro-controller will largely reduce the accidents at unmanned level crossings and provide immense safety.

System Architecture:
The model includes Keypad and switches, Node MCU, IR Sensor , RFID Reader , RFID Tags , LCD Unit , Arduino Microcontroller
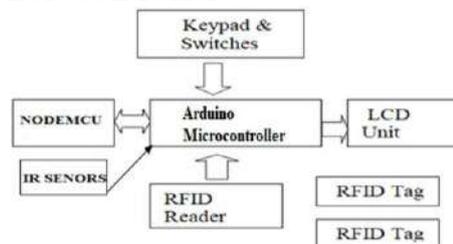
Conclusion:
By implementing this project proposal, we greatly reduce the manpower, saves time and operates efficiently. This project puts forth the first step in achieving the desired target. This project is helpful in managing the crowd in the bus, if the bus is full, it will send a message, Deduct the amount from their smart card according to the How much KM they Travel and Message sending to the after completion of the journey. These are the major facilities which are included the project so it will be helpful to avoid the spreading of the corona virus from one person to other persons.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Project Title: Personal Git Server

Students Name: Aashik J Krishnan(1EP19IS400), Twinkle Reddy B.R(1EP18IS088),V Mohan(1EP18IS089),Praveen Kanth P(1EP18IS064).

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Project Guide: Prof.Netra S.N

Abstract of Project: This Project Titled "Personal Git Server" has been designed keeping in the mind the difficulties and the Privacy concerns of an Individual Computer Engineer or a Small Team of Developers, The Privacy Issues of having to store ad use the Version Control Needs of his/her on a Cloud. The Product we designed solves the issues, The Product we developed is an affordable device with enough capabilities to serve the Git and Version Control Needs of an individual or small teams. The Product is Portable which you can carry it around in your Pocket and takes less electricity, 3% of what the Traditional Personal Computers takes for the Same Purpose, The Project was built using the Raspberry Pi 4B and is powered by the GitLab. The Important feature of this project is this device it produces little to Nil Carbon footprint the device is Green Computing Compliance, Since the Security is a Plus Point in our Project. The tools needed for the Version Control Needs that are mostly paid in 3rd Party Cloud Based services are free in this Device and is also a One Time Affordable Investment.

About the Project: On a Survey Conducted by Victory Computers it was Found that 59% of 459 People wanted a Personal for their Version Control Purposes This server as the Objective for this project. The Sever will be designed and Deployed using Raspberry Pi and will be Powered by Git Lab
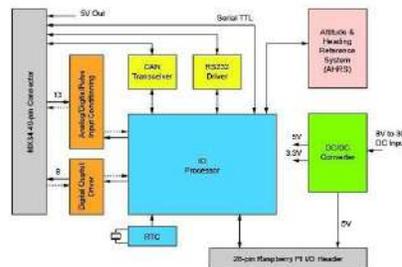
Conclusion: We Built This Product Making Use of The Open-Source Technologies and Powerful Hardware Device, Well Known as Raspberry-Pi, From Our Study and Research Done with Help of Victory Computers, It Was Found That 58% Individuals Preferred Having a Private Git Server Instead of Cloud Based Git.Around 90% Of Freelancers Love the Idea of Having a Personal Git Server That They Can Carry Along with Them. The Device Built and Deployed Is Affordable and Energy Efficient for Individual and Small Team Needs While Comparing It with The Traditional Servers, There Is Always a Scope for The Further Development and Enhancement of This Project

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Title: Automatic Railway Crossing

Student Names: Mohammed Muzammil Anwar [1EP18IS048], Akash Kumar [1EP18IS003], Rohith V [1EP18IS072], Sirisha S [1EP18IS073]

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Project Guide: Dr. Nanda Ashwin

Abstract of Project:
The aim of this project is to design an automatic railway gate controller using micro-controller. This mainly aims at preventing accidents at unmanned level crossing where large many accidents take place every day. The automatic railway gate controller make use of two sensors placed at both sides of the gate placed at a particular distance. The sensor detects the arrival of train and sends signal to the micro-controller to close the gate and similarly the sensor at the other end detects the departure of the train and sends signal to the micro-controller to open the gate again for public use. The usage of this automatic railway gate controller using micro-controller will largely reduce the accidents at unmanned level crossings and provide immense safety.

System Architecture:
The model includes Arduino, infrared sensors, servo motors, LED lights and buzzer. The Arduino component controls and coordinates all the other components. The Arduino sends the train status to NodeMcu by suing serial communication and the NodeMcu will update the train status to the IoT cloud platform.
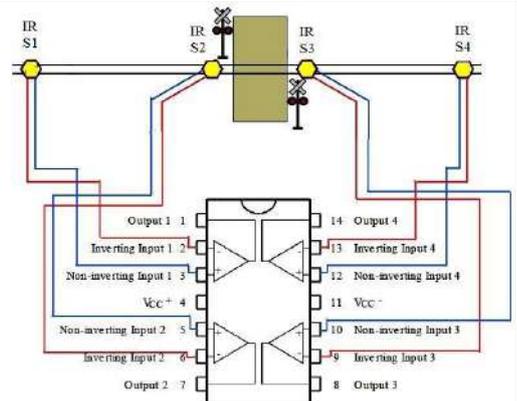
Conclusion:
The proposed work has many major advantages it will reduce the accidents occurring at the railway level crossing, it will increase the accuracy mated, it avoids manual errors and thus provides ultimate safety to road users. By this mechanism, presence of a gatekeeper is not necessary and automatic operation of the gate through the motor action is achieved. LCD screens have been used to display real time messages about the arrival and departure of the train to the people present at the crossing platform. A means of revenue for the government has been provisioned using an LCD screen at the railway crossing which can be used as a source of endorsement for many companies. Real-time notifications are also sent to the Railway Administrators Office for regulation of the status of the railway crossing.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Title: Car Crash Notification and Alerting System

Students Name: Divya B V (1EP18IS020), K Manoj (1EP18IS033), Simran T (1EP18IS078), Suha P (1EP18IS083)

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Project Guide: Dr. Nanda Ashwin

Project Abstract: With the growing population the use of vehicles has become superfluous. and this has led to the accidents increasing at an alarming rate resulting in a large loss of property and human life. This project aims at finding the occurrence of any accident and reporting the location of accident to the previously coded numbers so that immediate help can be provided by ambulance or the relatives concerned. GSM technology is used to intimate the vehicle position in the form of latitude and longitude coordinates through SMS. The location spot is retrieved using Global Positioning System which is a navigational system using a network of satellites orbiting the earth. Sensors such as Accelerometer (ADXL-345), Gyroscope (GY-521), Ultrasonic and fire detectors detect signal in case of an accident Occurrence and send a signal to the connected microcontroller. Many lives could have been saved if emergency service could get accident information and reach in time. Nowadays, GPS has become an integral part of a vehicle system. Whenever the sensor receives the input, it will assume that an accident has occurred. The system will then send the accident location acquired from the GPS along with the time by utilizing the GSM network. This will help to reach the rescue service in time and save the valuable human life.

Project Details: The advent of technology has also increased the traffic hazards and the road accidents. Due to the lack of best emergency facilities available in our country the lives of the people are under high risk. An automatic alarm device for vehicles is introduced in this paper which sends the basic information to the medical rescue team within a few seconds of an accident. This device can detect accidents and sends an alert message to rescue teams in significantly less time which will help in saving the lives of the people. The alert message contains the geographical coordinates, time and angle in which the accident has occurred. In cases where there is no casualty the message can be terminated with the help of a switch in order to avoid wasting the valuable time of the rescue team.
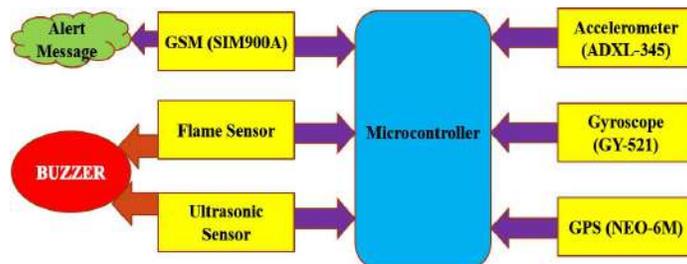
Figure: The Proposed Architecture of the System

Result & Conclusion: This project presents vehicle accident detection and alert system with SMS to the user defined mobile numbers. The GPS tracking and GSM alert-based algorithm is designed and implemented. The proposed vehicle accident detection system can track geographical information automatically and sends an alert SMS regarding accident. The system is successfully implemented and tested. After the detailed experiment, it is observed that this system is efficient and reliable.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Title: SIGN LANGUAGE DETECTION

Student Names: Bharath B(1EP18IS012) , Harish Reddy A(1EP18IS025), Mahendra Reddy Y(1EP18IS041), Shiva Prasad NV(1EP18IS076)

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Guide Name: Vaishali

Abstract of Project:

sign language recognition have a rising trend in model performance relying on deep learning capabilities in computer vision and NLP, there is still much room for performance improvement in this area. Considering the attention mechanism, using multiple input modalities to benefit from multi-channel information, learning structured spatio-temporal patterns (such as Graph Neural Networks models), and employing the prior knowledge on sign language are only some of the possible future directions in this area.

Conclusion:

Our project objective is to bridge the gap by introducing an economical computer application in the communication path so that the sign language can be automatically captured, recognized and translated to text for the benefit of deaf people. The image obtained must be analyzed, processed and converted to either sign or textual display on the screen for the benefit of the hearing impaired. We have learned and demonstrated that CNN can learn how to identify and predict the text. We have created a model that pre-process the image to the required nature for it to be fed into the model. The system is an approach to ease the difficulty in communicating with those having speech disabilities. The amount of training and validation loss observed with the proposed CNN architecture was less.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Title: IoT Based Air Pollution Measuring System

Students Name: Bhavya R(1EP18IS013), Chandana G(1EP18IS016), Chandana Priya K(1EP18IS017), Clement Justus S(1EP18IS019)

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Project Guide: Mrs. Neelima Sahu

Project Abstract: Air pollution is a major factor in global heating and an increasing focus is centred on solving this problem. The aim is to mitigate health threatening risks and to raise awareness in relation to the effects of air pollution exposure. This paper investigates the key issues of a real-time pollution monitoring system, including the sensors, Internet of Things (IoT) communication protocols, and acquisition and transmission of data through communication channels, as well as data security and consistency.

Project Details: IoT Platform for Monitoring Smart Cities Pollution (IoTP4mSCp Solution) Architecture, Implementation, Material, and Methods. The Internet of Things platform for monitoring smart cities' pollution (IoTP4mSCp) contains the following components: Wired and wireless sensors for various metrics measurements; IoT gateway(s)/node(s) for data collection—for the moment, development boards are used for the proof of the concept; IoT communication middleware with security features for sending data to IoT clouds. IoT cloud solution for mathematical, statistics, and artificial intelligence (AI) models for data analytics and data science techniques;

Figure: The Proposed Architecture of the System

Result & Conclusion: Air monitoring systems based on the advancement of IoT framework has the rapid development and becoming an emerging research topic. Majority of the countries used various computational tools and techniques to establish a Air pollution monitoring system. The proposed system measures the air quality of a particular area with the help of the hardware module fixed at certain locations like lamp posts. The proposed system collected real time pollution statistics using various sensors which monitored percentage of gases like ammonia, oxygen and carbon monoxide. The additional benefit of the proposed system is people can understand and be aware of the pollution status of localities. This awareness can also lead to people making a contribution directly to reduce pollution levels.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Title: Flip kart clone using web development

Student Name's: Priyanka B(1EP18IS066), Sahana D(1EP18IS074),SnehaR(1EP18IS080), TejaswiniC(1EP18IS087).

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Guide Name: Vandana NS

Abstract of Project:

A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products. UN like traditional commerce that is carried out physically with effort of a person to go & get products, ecommerce has made it easier for human to reduce physical work and to save time. E-Commerce which was started in early1990's has taken a great leap in the world of computers, but the fact that has hindered the growth of e-commerce is security. Security is the challenge facing e-commerce today & there is still a lot of advancement made in the field of security.

Project Details:

A Flip kart Clone is a portal which allows merchants in developing counters to advertise and sell their goods. This would permit rural communities to make their wares available to the world.

Figure: Flip kart clone overview

Conclusion:

In general, today's businesses must always strive to create the next best thing that consumers will want because consumers continue to desire their products, services etc. to continuously be better, faster, and cheaper. In this world of new technology, businesses need to accommodate to the new types of consumer needs and trends because It will prove to be vital to their business' success and survival. Bharatha Nari is continuously progressing and is becoming more and more important to businesses as technology continues to advance and is something that should be taken advantage of and implemented.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science Engineering

Project Title: Employee Retention Analysis using ML

Students Name: Latha JA(1EP18IS039), Likitha M B(1EP18IS040),Prerana Hiremath(1EP18IS065), Vaishnavi Ram J(1EP18IS090)

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Project Guide: Prof. Kemparaju N

Project Abstract: The main aim of designing this project is to build a system which will analyze employee retention, attrition rate, necessary factors for retention, main factors leading to attrition and predict which employees are going to retain by utilizing neural networks and boosting methods in order to help firms and their HR managers to reduce attrition. Employee attrition is a major issue for the companies especially when experienced, technical and key employees depart from companies for a better opportunity. Losing an talented and well trained employee drastically effects the organization. This results in financial loss to replace a trained employee and creates a deserted space in an organization. It's keen responsibility of the HR manager to hire a well natured, skillful, and trained and workaholic employees to run a successful firm. This leaves a burden and difficulty tothe HR manager to choose a correct talented person that particularly fits the work so they can upgrade thecompany in higher level. The main goal is to design a system which can help the HR managers to detect as soonas possible an employee's intention to leave using predictive analysis methods and so fight this attrition. The earlyemployee attrition prediction using machine learning can prevent the company loss by predicting the employee's behavior accurately

Project Details: Machine Learning is a process of automating and improving the learning process of computers based on their experiences without being actually programmed i.e., without any human assistance. In today's competitive business environment, the impact of attrition on a business can be detrimental to both the bottom line and morale. Attrition can involve the loss of employees or the loss of customers. Both employee turnover and failure to retain customers over time can challenge managers. While attrition is not usually due to dissatisfaction with wages or benefits, an increase or additional benefit can encourage employees to stay. If you value an employee's skills, consider offering them an incentive.

Result & Conclusion: The main goal is to help the HR managers to detect as soon as possible an employee's intention to leave using predictive analytics methods and so to fight this attrition. Employee attrition effects infinancial, time and effort loss of organization. Identifying features importance should support Human Resourcemanagement on retention and development for employee's who are about to resign. The main objective is to usemachine learning models to predict employee attrition based on their features. The early employee attritionprediction using machine learning can prevent the company loss by predicting the employee's behavior accurately.

Figure: The Proposed Architecture of the System

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY
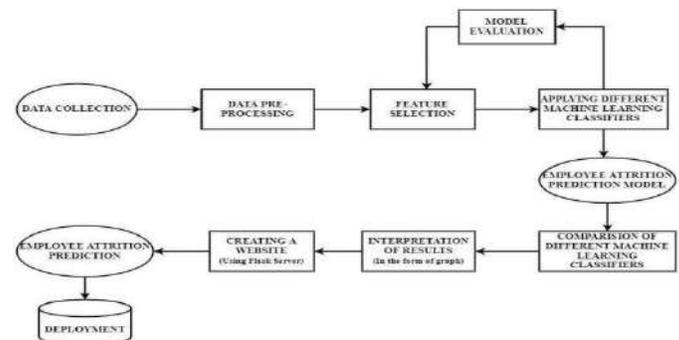
Department of Information Science & Engineering

Project Title: Vehicle Speed Sensing and Smoke Detecting with IOT

Students Name: Mahesh V(1EP18IS042), Pavithra Ashvitha N(1EP18IS056), Prajwal R(1EP18IS060), Vishwas N(1EP18IS094)

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Project Guide: Mr. Pavan Mulgund

Project Abstract: : In recent years, automatic vehicle monitoring has become a very important situation, and it may be achieved by using the following technologies. The necessity of environmental awareness was emphasized during the start of the twenty-first century. A global positioning system, an Internet of Things module, and a GSM board make up the system. The received alerts will be saved, and if the warnings are received more than three times or the pollution level rises significantly, the car will automatically navigate to a nearby safe zone.

Project Details: The principal pollutants emitted by cars are carbon and nitrogen oxides, which can now be easily detected using semiconductor gas sensors. Several accidents have occurred throughout the years as a result of excessive speed, negligent driving, intoxicated driving, and other factors in regions where numerous people cross roadways often, such as school zones..
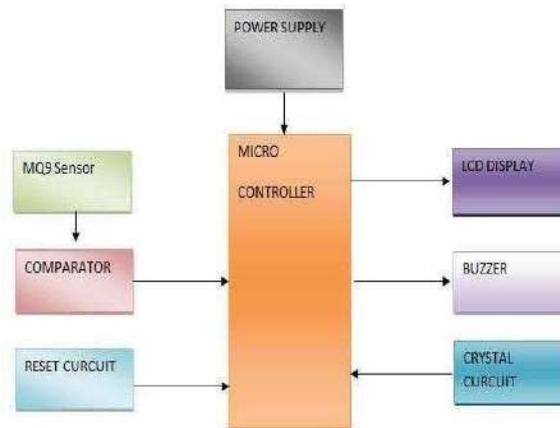
Figure: The Proposed Architecture of the System

Result & Conclusion: It has the immense potential to detect the over polluting vehicles at a rate comparably faster than any other. As it is an automized technology accuracy rates are high. Our present scenario is a situation where global warming is occurring very rapidly due to industrialization and over usage of vehicles and as a result the ozone layer, which is a protective shield from the harmful ultra-violet rays has been depleted. Hence it is mandatory to reduce the emission which causes global warming. The main motive of this project is to detect the over polluting vehicles at a rate faster than any other.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Title: Forest Fire Area Prediction Using Machine Learning

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Project Guide: Mrs. Nandini Gowda P

Project Abstract: Forest fires have become one of the most frequently occurring disasters in recent years. The effects of forest fires have a lasting impact on the environment as it leads to deforestation and global warming, which is also one of its major causes of occurrence. Forest fires details collected by the satellite images of forest and if there is any emergency caused by the fires then the authorities notified to mitigate its effects. By the time, the authorities get to know about it, the fires would have already caused a lot of damage. Fast detection and accurate estimation of forest fire burned areas can help us to solve effectively control damage.

Project Details: Forest fires are an integral part of many terrestrial ecosystems such as boreal forests, temperate forests, Mediterranean ecosystems, savannas and grasslands, among others. Fires in the Mediterranean basin account for a significant percentage of total fires occurring worldwide. Forest fire prediction, prevention and management measures have become increasingly important. Systems for forest fire danger prediction represent an essential tool to predict forest fire risks, back up the forest fire monitoring and extinction phase, and to assist in the fire control planning and resource allocation.
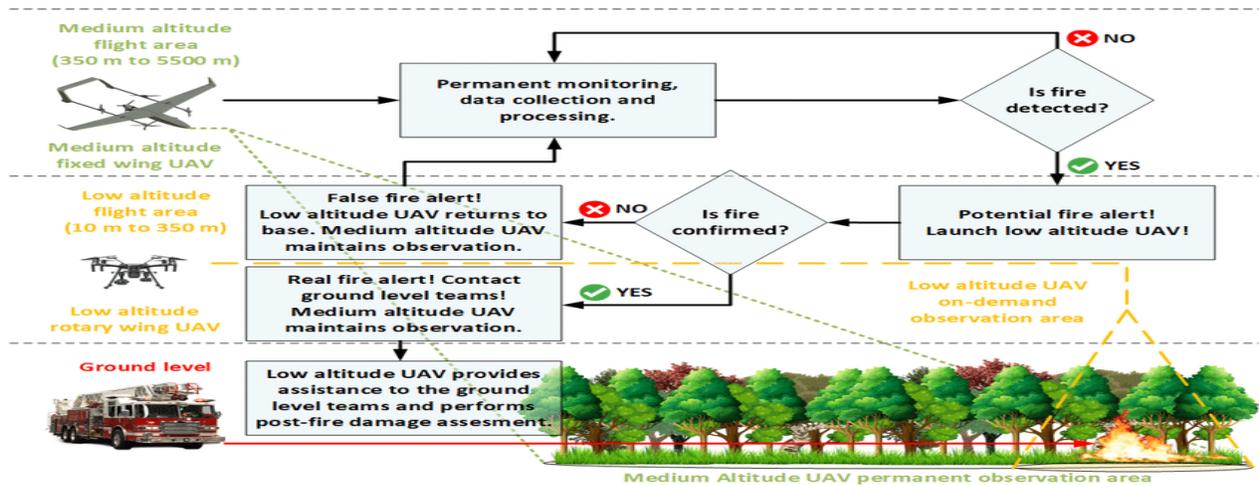
Figure: The Proposed Architecture of the System

Result & Conclusion: After finding the best suitable regression algorithm then converting the target values to binary classes and finding accuracy among them, Decision tree is best-suited algorithm to predict the burn area of forest fire. Thus trained and tested on Decision tree, Service Vector Machines, K-Nearest Neighbor, Extra tree Regression, Linear Regression, Random Forest algorithms. Decision tree and Extra tree Regression gave accurate results with less error rates.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Title: SURAKSHA SYSTEM – The Laxman-Rekha

Students Name: Shirisha KM (1EP17IS042), Priyanka S(1EP18IS067), Sindhu CS (1EP18IS079), Swathi S (1EP18IS084)

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Project Guide: Prof. Hanumant Pujar

Project Abstract: The implementation of the Suraksha System is basically split into two sections the first part ensures to track the location, the device get automatically triggered when there is a suspected motion , the device send the current location to the police station and the concerned person. The second section deals with defence application as we tend concentrate more on providing self-defence for the women in danger. By making self-defence as the first priority we make sure that occurrence of the critical situations are eliminated. The fingerprint module is used for the authentication process to check whether the user is authorized or not.

Project Details: The users need to register themselves by creating their own account. The GPS monitoring shall be locally distributed among the police and their mobile patrolling units i.e., they will be monitoring only over a certain area which is within their reach depending upon their standing location. The fingerprint module is used for the authentication process to check whether the user is authorized or not. It contains details of the registered users in its memory
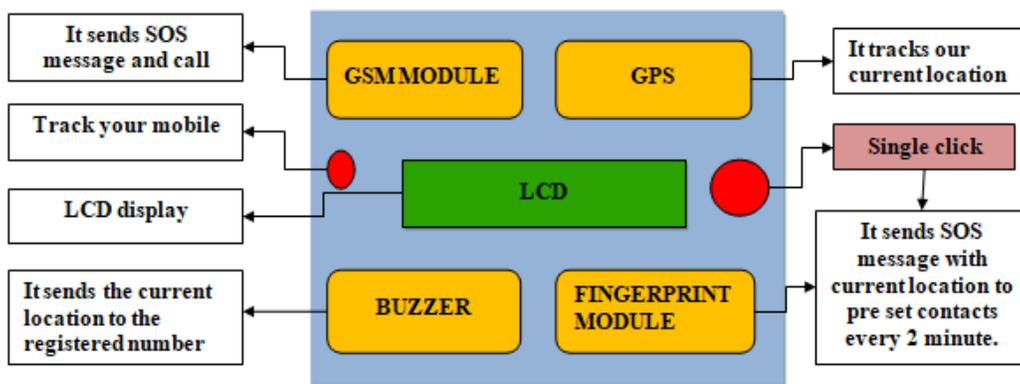
Figure: The Proposed Architecture of the System

Result & Conclusion: The proposed design will deal with critical issues faced by women and will help to solve them with technological sound equipment and ideas. The proposed system involves Arduino UNO, GSM, GPS and various sensors. The GSM and GPS helps to send the message and location of the victim to the authorized network at the time of critical situation. The fingerprint module is used for the authentication process to check whether the user is authorized or not. It contains details (fingerprint ID) of the registered users in its memory. The system will search the whole finger print library. Hence it becomes easy to find the appropriate location and major draw backs of this system is it may get failed in a closed or dumped area. To overcome this issue, we need to work with real time GPS location for a future scope.

Department of Information Science and Engineering

Project Title: Smart Attendance System with RFID and Face Recognition

Students Name: Gujjula Raja Reddy(1EP18IS024), Kaushik K V(1EP18IS035), Purushotham Kumar(1EP18IS068), Sai Vikas U P(1EP18IS075).

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Project Guide: Mrs Swetha R

Project Abstract: Proper attendance management is crucial for the academic institutions to disseminate and ensure quality education to every student. This paper presents a model of an automated attendance system to alleviate the manual effort of recording data eliminating the chances of fraudulency. The model focuses on how face recognition incorporated with Radio Frequency Identification (RFID) detect the authorized students and counts as they get in and get out form the class room.. By recognizing the face of the individual and verified by RFID simultaneously in our project, the limitations in the existing manual attendance system are mostly eliminated.

Project Details: A compact and reliable attendance system is proposed using RFID and Face recognition technology which supports student's identification and verification. The system is computationally faster. The system is secure from proxy attendance. The system can be implemented easily using Webcam, RFID reader and Computer of the already existing system.
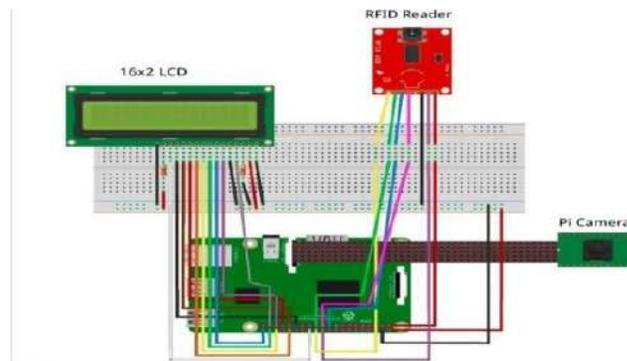
Figure: The Proposed Architecture of the System

Result & Conclusion: The design and implementation of the Attendance System based on Face Recognition and Verification by RFID which was our aim and objective of the paper at the beginning ends with a success as both part works as desired. There it goes without any saying that our proposed model has the potential to overcome the manual attendance system because it's efficient and convenient. Our model is more user friendly and it provides the most accurate and organized data. And with just some few modification we can use our system in any secured facilities.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Title : **Facemask detection using machine learning Techniques**

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Project Abstract : The continuous spread of virus has led to sustained increase in the mortality rate of many countries across the globe from the day it started. At this moment, when there is no medicine or vaccine, the World Health Organization has suggested the use of surgical/medical masks to mitigate the spread of Virus. As per WHO, use of masks is made mandatory in communities, largely crowded areas, during home care and in health care settings in areas which have reported cases. Wearing of masks during, as well as post- pandemic would be of paramount importance until a vaccine is invented. Such a measure during the pandemic has received varying recommendations from different public health agencies and governments.

Project Details: Airborne disease can spread when people with certain infections like cough, sneeze, or talk, spewing nasal and throat secretions into the air, WHO (World Health Organization) has suggested many steps to prevent the spread. One of which is wearing medical mask covering mouth and nose which is highly desirable over the globe until a vaccine/medicine is invented. In current scenario detecting face mask is not having good accuracy rate and this leads to an erroneous result without giving any alertness to the people.

Figure: Alert message sent to admin with a beep sound

Result & Conclusion : Pandemic has come with various challenges to the world and the spread of this virus should be controlled as this virus has affected more than one crore peoples all over the world and the counting is still going.

EAST POINT | COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Title: Customer Churn Analysis In Telecom Sector Using Machine Learning

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Guide Name: Prof Indumathi S

Abstract of Project: The main aim of designing this project is to build a system that will analyze customer churn rate, and main factors leading to churn and predict which customers are going to churn by utilizing neural networks and ensemble methods to retain customers and maximize the firm's profit margin. Over the years, the telecommunications industry has emerged as one of the world's most rapidly growing industries, having an impact on about 90% of the global population. It is one of the sectors where the customer is of utmost importance and customer satisfaction plays a huge role in the success of organizations in such an industry. Attracting new customers to a company is moa re tedious, time-consuming, and costly affair. So a company should aim at the existing customer rather than looking for new customer acquisitions. Hence there is an increasing need to predict the potential churners before they leave a provider so that the retention strategies could be targeted upon them and the organization may burgeon by overall revenue maximization. In the current digital world, the usages of mobile phones are very much essential for every human life. Due to this, many service providers would like to give, values added services to retain their customers. Many telecom industries are facing difficult to predict the customers who are likely to leave the services. So, at this point, customer churn analysis plays a vital role which will help the service providers to retain their customers and meet their satisfaction. The early churn prediction using machine learning can prevent the company loss by predicting the customer behavior accurately.

Project Details: Builds an ML model which will analyze customer attrition rate, and main factor leading to churn and predict which customers are going to churn by utilizing neural networks and ensemble methods to retail customers and maximize the firm's profit margin.

Conclusion: In the current digital world, the usage of mobile phones is very much essential for every human life. Due to this,many service providers would like to give, values added services to retain their customers. Many telecom industries are facing difficult to predict the customers who are likely to leave the services. So, at this point, customer churn analysis plays a vital role which will help the service providers to retain their customers and meettheir satisfaction. The early churn prediction using machine learning can prevent the company loss by predictingthe customer behavior accurately.

COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science and Engineering

Project Title: Handwritten Recognition and Language Translation

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Guide Name: Dr. Rajlakshmi Ghatkamble

Abstract of Project: Current state-of-the-art approaches in the field of Handwritten Text Recognition are predominately single task with unigram, character level target units. Handwritten recognition is the ability of a computer to receive and interpret handwritten input from sources such as paper documents, photographs, touch-screens and other devices. Handwritten recognition is the most challenging task because it is a repeated work which is written by humans and causing error. The handwritten recognition has been applied in variety of applications like Banking sectors, Health care industries and many such organizations. Handwriting recognition is most commonly used in today's mobile world is handwriting recognition as a direct input to be converted into texts. Language translation is one task in which machine is definitely lagging behind the cognitive powers of human beings. Statistical Machine Translation is one of the conventional ways of solving the problem of machine translation. This method requires huge data sets and performs well on similar grammar structured language pairs.

Project Details : For handwritten recognition we have used IAM Handwritten Dataset which contains forms of handwritten English text which can be used to train and test handwritten text recognizers and to perform writer identification and verification experiments.
once recognizing the handwritten dataset we are going to translate English handwritten data into Hindi.The dataset used for English to Hindi language translation is Hindi_English_Truncated_Corpus Dataset

Result & Conclusion: In conclusion, the outcome of the experiment has achieved the objective and the hypothesis was proven to be accurate. The significant number of pixels used in data input had increased the accuracy of the sampled handwritten dataset. The advantage of relying on huge number of pixels was to

produce sharper and clearer handwritten data which aids the recognition process and outcome.

Statistical Phrase-based Machine translation systems have been facing the problem of accuracy and requirement of large data sets for a long time, and in this work, we have investigated the possibility of using a shallow RNN and LSTM based Neural Machine translator for solving the issue of Machine Translation. The result of our model shows that LSTM worked better than expected with number of layers in encoder and decoder.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science Engineering

Project Title: "VIRTUAL DOCTOR CHATBOT USING MACHINE LEARNING"

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Deepthi N(1EP16IS026)

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Project Guide: Prof. Vaishali Sheshroa Sontakke

Project Abstract : The main purpose of developing the medical chatbot is set to an moto. This is to save the time and money in almost possible situations. Now a day's people are using internet continuously and their busy schedule leads to avoid to visit to hospital so they can use chatbot to get there medical queries. I have developed a web app to resolve the problem. Many of other applications which are totally automated chatbots which don't update their dataset for training module regularly. And many of the applications which has only live chat application where availability of doctor for live chat is less possible. These all drawbacks are recovered in the proposed system by combining both live chat and automated chatbot in a single web application which we need not to install separately.

Problem solution : In this paper a virtual doctor prototype has been presented, taking into consideration various security issues in health information exchange. This prototype, which is under development, may offer the patients a system that monitors their health condition and provides them with a quick and accurate prediction. Moreover, the medical doctors may have available a fast way to access the patients' medical history, their current health status and a first and reliable diagnosis. Our work includes the implementation Of the Ptognosis formal language and the intelligent mechanism which would validate the patient's data and provide the diagnosis.

Proposed Architecture :
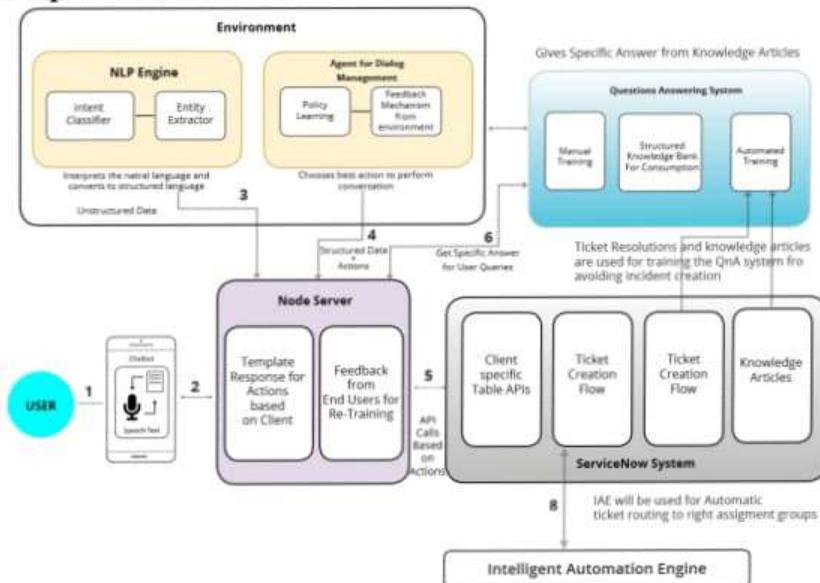
Fig:General architecture of a smart chatbot

Conclusion : This project will demonstrate a web based "Medical Chatbot" application. Each doctor is specialized for solving medical related issues Of patient Requests, This application would help to resolve the problems of busy people who cannot visit Hospital often. The Conclusion makes a return on the goal of this work.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Information Science Engineering

Project Title: Clustering of Credit Card Customers using ML

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Project Guide: Dr. Nanda Ashwin

Project Abstract: Without customer, a business cannot be able to achieve success. It is essential to keep the customer satisfied throughout the service we provide. For that, we have to identify the customer needs and analyse their behaviour . Customer Segmentation is a method of dividing customers into groups or clusters on the basis of common characteristics.

Project Details: In this project we are making use of K-Means algorithm for clustering and gradient boosting algorithm for prediction. The proposed model includes a dataset with 8950 rows and 18 columns. Better visualization will be seen by using different kinds of plots and prediction is done based on the inputs given by the user in the frontend. The output is the predicts the cluster group for which the particular customer belongs to along with graphs plotted for each parameter with respect to that cluster group.
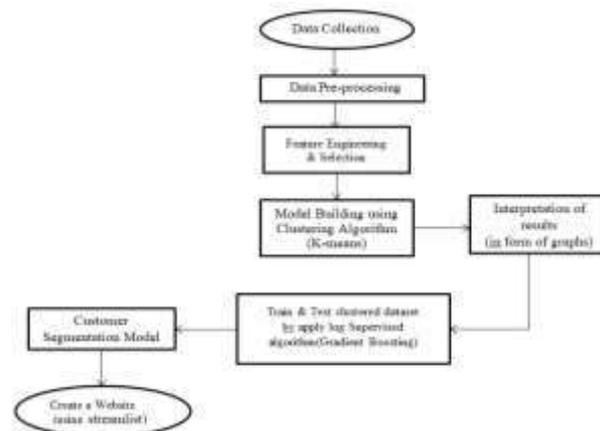
Figure: The Proposed Architecture of the System

Conclusion: Customers are the most basic foundation of any business. Without customers, a business cannot be able to achieve success. It is essential to keep the customer satisfied throughout the service we provide. For that, we have to identify the customer needs and analyze their behavior. The competition among e-commerce business is increasing by each day so the importance of customer segmentation is also increasing Maintaining a customer is a crucial task for the company. Without understanding who is the best customer, what are your customer needs, the business cannot be able to focus on the customers and the services. So customer segmentation is the best solution to identify this problem which helps the business to focus more on marketing. Early analysis will help the company to retain their customers. Price Optimization, Brand Awareness, Increase in Revenue and ROI are some of the major advantages of customer segmentation.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Abstract- 2022

ACHIEVEMENTS

Awarded KSCST Grant for Student Project **Rapid Determination on Moisture Content of soil using Microwave Oven**

Civil EnggDept

Department of Civil Engineering

Project Title: An Experimental study on Multistage and Single Stage Orifice Plates for Performance improvement

Students Name: Harshavardhana K M(1EP17CV021), Sathish S (1EP17CV043),

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Project Guide: Dr. Nagaraj Sitaram

Project Abstract: Orifice plates are widely used as flow restriction devices for sake of pressure control, flow rate control or both. The multiple stage orifice plates are employed to meet these challenges but they pose problem in design, as their characteristics are not fully understood. Detailed experiments are conducted for three stages, two stage and single stage orifice plate. The β- ratio of 0.49, 0.59, 0.69, are used to adjudge the efficiency of multistage orifice plates as compared to single stage orifice plate connecting to 50mm diameter pipe. The aim of the project is to improve the performance of conventional orifice meter. It is expected to improve the recovery pattern behind the orifice plate by installing multiple stages of aligned orifice plates. The experimental work will help to evolve better design by considering the variables involved in the flow control. A new formula for equivalent Beta ratio has been proposed to compute coefficient of discharge (C_d), Coefficient of pressure (C_p) and Reynolds number

Project Details: A 50mm pipe is the main pipe with orifice plates of beta ratio 0.52, 0.67, 0.71 with 6 HP centrifugal pump installed with pressure transducers (Digital display of pressure in kg/cm^2). It is a recirculating flume. Valves are provided to control and bypass the flow in main pipeline. Temperature of water is recorded in each reading with flow rate. Series -1 : Single stage orifice plates ,Series -2 : Two stage orifice plates ,Series -3 : Three stage orifice plates .A single stage restriction orifice is usually a plate or a block with a bore (orifice) sized to the intended permanent loss of pressure. It is installed between the pipe flanges. There are situations where limitations arise due to process conditions making the single restriction orifices unacceptable. In such situations, use of multiple restrictions in series is a better solution. The present work compares hydraulic performance of single stage Verses Two-stage and Three-stage orifice plates in the same set-up and Cd values are found to increase for higher stages

Result & Conclusion: The main claim of the research work is that multistage orifice plates can improve the flow control as compared to normal orifice plate. The single stage orifice plate cannot be used for very high pressure drop or flow control due to inception of cavitation and choking conditions. The experimental findings are in the highly turbulent region (Re > 10^5). The pressure recovery pattern has improved considerably in 3-stages as compared to 2-stage and single stage orifice plates. The effect of β-ratio can be seen very clearly on pressure drop and flow rate (Q). The choking effect is highest with low β-ratio and less for high β-ratio. The proposed new formula for equivalent β-ratio is working satisfactorily and the Cd value is low for single stage and relatively high for 2-stage and 3-stage orifice plates.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Title: Rapid Determination on Moisture Content of soil using Microwave Oven

Students Name: Abhilash S(1EP18CV001), Niranjan S(1EP17CV019), Hemalatha G P(1EP18CV011), Suhas K P(1EP17CV045)

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Project Guide: Barnali Ghosh

Project Abstract: Moisture content of the soil is conventionally determined by heating the sample in hot air oven for 24 hours as per IS 2720 Part II. The current study evaluates the suitability of a microwave oven for the determination of moisture content of soil in much shorter time. Predetermined quantity of water (10%, 15%, 20%) is added 50 g of dry soil. The samples with known water contents are then heated in microwave oven for 5,10,15,20,25and 30 minutes. Water contents obtained from heating in microwave oven is compared with those from hot air oven. Series of experiments are carried out on two different soils (Black cotton and red sandy soil) and similar results were obtained.

Project Details: Microwave oven was used for both black cotton and red sandy soil with 50 gms of sample. Pre-determined water content of 10%, 15%, 20% were mixed with the soil and checked the same with conventional oven and microwave oven. Conventional oven takes 24 hrs for desired water content to be found. Microwave oven we have calculated the water content for the time period of 5 to 30 minutes with 5 minutes interval of time and checked for the desired water content. It is seen that at about 10 mins of time water content comes similar to the actual. Then again it was checked with 2 mins of interval to narrow the gap and found the time interval as 6 mins to 10 mins.

Result & Conclusion: For conventional oven drying method (as per IS 2720 Part II) it takes 24 hrs to determine the water content accurately. It is observed that by using microwave oven in 6 to10 mins of time the water content reaches of its actual value (similar values as conventional oven) and further increase in time does not show much changes in values of water content. So, we can conclude with that water content can be determined as accurately in much shorter time by microwave oven method and hence recommended to be adopted as a standard to determine water content rapidly. It can also be concluded that water content determination using microwave oven is much cheaper than that of hot air oven in terms of power consumption and initial installation.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Title: Study on Geopolymer tiles using Industrial waste materials-
An Eco-friendly approach

Students Name: Nuthan V S (1EP18CV009), Dilip Kumar P (1EP18CV006),
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Project Guide: Dr. Geena George

Project Abstract: The rapid increase in demand, large greenhouse gases emissions and the high cost of conventional Portland cement (PC) have prompted the need of developing sustainable cementitious materials. Cement industry itself accounts for 5–7% of total carbon dioxide emissions worldwide whose production releases approximately equal quantity of CO_2. Geopolymer mix involves the production of binders from alumina and silica which can be obtained from low-cost materials or industrial by-products such as fly ash, rice husk ash, etc, and therefore, this can also be termed as sustainable approach. These source materials react with alkali-activating solutions and form cross-linked three-dimensional alumino-silicate network. Geopolymer concrete plays a vital role to safeguard the environment by way of eliminating cement in concrete industry. In this study, the geo-polymeric tiles were prepared using the source materials such as Fly Ash and Ground Granulated Blast Furnace Slag (GGBS) having high silica content is mixed with alkali activator solution and its strength properties have been investigated.

Project Details: Geopolymer concrete tiles manufactured with source materials such as GGBS and Fly Ash with fine aggregate and the ratio of alkaline solution to binder are taken as 0.3. The study is conducted for geopolymer mix made with Na_2SiO_3 / NaOH as 2.5 for varying concentrations 5,8, 10 molarity of Sodium Hydroxide After casting the floor tiles, it placed in hot air oven at 60°C for 24 hours curing. M-sand is used as fine aggregates instead of river sand in the mix. The individual properties of the mortar such as setting time, normal consistency, compressive strength, were determined as per relevant Indian and ASTM standards. After 7 days of curing at ambient temperature, compressive test and Water absorption test were carried out for both geopolymer tiles and cement concrete tiles specimens as per IS 1237:2012.

Results & Conclusion: Geopolymer tile with alkaline ratio 0.3 has attained strength comparable with cement tile. Geopolymer mix requires less water content for the preparation and can be cured under ambient curing conditions. GGBS and Fly ash is used as the source material, instead of the Portland cement, to make mortar. M-sand is replaced for fine aggregate, which reduces the excessive use of river sand. The test results reveal that mortar develops the strength even at ambient conditions. Compressive strength increases with an increase in the Sodium Hydroxide concentration. It can be concluded that the strength results of geopolymer mortars are high when compared with conventional mortars. Geopolymer mortar is suitable for tiles manufacturing and gives strength comparable with normal cement tiles, can be considered as an eco-friendly alternative to cement tiles.

Department of Civil Engineering

Project Title: Study on EPCET as Smart Campus

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Project Guide: Santosh R

Project Abstract: In the present smart world, everyone expects and require information to be handy and faster. The project aims to upgrade the EPCET campus into smart campus. A smart campus is achieved by integrating sustainability to every component of an institute including building structures, renewable resources, digitalization through internet, bringing together the institute, stake holders, faculty and external members to understand the necessity of a sustainable and environment friendly campus by implementing Smart Security and Surveillance, Smart Wi-Fi Enabled Campus, Smart Transportation System & Smart information. In the present work more importance is given for Smart Surveillance, Smart Transportation & Smart Information.

Project Details: An application has been developed for security surveillance and academic activities of the students. As the application was built with using open-source software called Appy-pie. This is a stand-alone application and cannot be logged-in using laptops. The main purpose of this application is to navigate the stake holders to their required destination in the campus. Along with this the students can be notified with the curricular and extracurricular activities. A review of the available literature survey indicated us in getting effective results. Recognizing to all the above points the application is built in more user-friendly interface low cost, low maintenance with effective output.

Result & Conclusion: According to the smart EPCET campus students are allowed to download, install and share the application with others to use it in a smart way. Using this application, students are able to track the location and get their academic updates from the faculties which is useful in daily routine. As in when guest users enter college though guest is not using application, he/she will be registered and notified with an email which help guest user with locations of principal office, library, washroom, classroom and parking. The application helps ease of communication between faculties and students. The academic related circulars or information can be intimated on timely manner. This application is unique in its own way and can be enhanced further in most efficient manner. Considering all the things study as smart EPCET campus can upgraded in smarter way.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Title: Comparative Study on Reinforced Concrete Beam Using Ansys.

Students Name: Akshay J (1EP18CV003), Gangadhar Junzarawad (1EP18CV008), Mohith D (1EP18CV015), Umesh G R(1EP18CV031)

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 Project Guide: Vinodkrishna M Savadi.

Project Abstract: ANSYS offers structural analysis software solutions that enable engineers of all levels and backgrounds to solve complex structural engineering problems faster and more efficiently. The deformed shape and position of a member when subjected to a bending load is known as the deflection. In this paper, we compare the deflection of the steel beam section while acting loading conditions by using ANSYS and manual calculation. The steel beam section is considered as a linear section analyze is made two different sections by using ANSYS static structural model. The results discussed and analyzing by manual and ANSYS results. The fixed beam with point load is taken for the exercise.

Project Details: A comparative study on deflection of beam using ANSYS software. We are creating Steel beam by using ANSYS software and the Beam is simply supported and applying three type of load (point load, ,UDL ,combination of both) in Ansys software after applying load , finding the direction deformation and shear stress values, the software value is equal to theoretical value ,By using this project we are saving the money, time ,and human energy

Results & Conclusion: By comparing deflection results of theoretical analysis with ANSYS and the sample steel beam, with deflection, are acceptable as per the IS code. By this it can be justified that the approach adopted using ANSYS is quite perfect and the results are accurate in comparison with theoretical values. A steel I and C beam steel section is modelled and analyzed. So, to analyze different geometries of irregular shape, ANSYS can be adopted since other software's don't give us the liberty to do that. Further validation is possible experimentally and has better chances of giving the same result as that from ANSYS. The results are accurate since ANSYS module is based upon FEM.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Title: An Experimental Study on Strength and Durability of Concrete by Partial Replacement of Fine Aggregate with Sawdust

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Project Guide: Preethi Annie Blessy

Project Abstract: Concrete is widely and abundantly used as a construction material. In order to reduce the cost of construction materials and to utilize the waste materials such as saw dust, coir, husk etc. is used. Each waste product has its own specific effect on properties of fresh and hardened concrete. The present study is experimentally investigating about using saw dust as a certain percentage of fine aggregate in concrete. Saw dust is also known as wooden dust which is a waste of timber industry. The replacement of fine aggregate with certain percentage of saw dust will make the concrete lighter in weight. The use of saw dust in concrete not only makes it economical but solves some of the disposal problems.

Project Details: The saw dust is sieved using a 4.75mm sieve and 43 grade of cement. Using mix design of M25 grade, concrete is produced using saw dust of 0%, 5%, 10%, and 15% as a partial replacement of fine aggregates. Experimental investigations are carried out on concrete cubes with 0%, 5%, 10%, and 15% saw dust at the age of 7, 14 and 28 days in the laboratory. Tests such as compressive strength are performed to compare its strength with conventional concrete.

Results & Conclusion: Saw dust is a suitable material for use in concrete up to 10% partial replacement of fine aggregate. Concrete becomes less workable as the proportion of saw dust increases more than 10% at a constant w/c ratio. This is due to the high-water demand resulting from the absorbent nature of saw dust. Weight of the sawdust concrete is also reduced as compared with normal concrete. The compressive strength of sawdust concrete decreases with increases in percentage of saw dust beyond 10 %. Therefore, the compressive strength obtained for the partial replacement of fine aggregate with 10% saw dust is proved to be optimum mix to achieve M25 grade of concrete.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Title: **Sustainable Geopolymer Based Pervious Concrete for Pavements**

Students Name: Akhil. C. S(1EP17CV004), Rahul Kumar V(1EP17CV038)
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Project Guide: Sreedhar. N

Project Abstract: Geopolymer materials (pastes, mortars and concretes) are formed through the activation of aluminosilicate sources with an alkaline solution, and can achieve a comparatively similar or superior performance to ordinary Portland cement (OPC). Given that these aluminosilicate materials can be industrial by-products such as fly ash and slag, geopolymer materials are green, economical and sustainable materials. Geopolymer materials have also become more globally popular as an alternative to OPC by greatly reducing the emission of CO_2, as OPC requires much higher energy and temperature to be produced. Although the properties of geopolymer concrete used in structural members have already been relatively well researched, this study aims to investigate the feasibility of geopolymer concrete used in pavements and piles. This study expands the use of geopolymer materials in practice, while reducing the consumption of OPC as much as possible.

Project Detail: Pervious concrete is a special high porosity concrete used for the roads carrying light traffic, allows the water from precipitation and thereby reducing the runoff from a road surface and hence recharging ground water levels. The objective is to investigate mechanical properties using various parameters. The parameters are coarse aggregate and fine aggregate sizes and coarse aggregate content with the same cement and water & sodium silicate content. Pervious concrete is a mixture of fine aggregate and coarse aggregate, fly ash, GGBS, sodium silicate & water and little or no sand which creates an open cell structure that allows water and air to pass through it.

Results & Conclusion: It is found that, based on fineness of Fly ash is more than GGBS (Ground-granulated blast furnace slag). Based on the results of mortar test, proportion for binding material will be fixed. By using the fixed binder proportion, proportion for pavements quality concrete will be fixed. Based on the present study, a pervious geopolymer concrete with FA/CA ratio of 1:7, CA of 5–10 mm, NaOH molarity of 10, Na_2SiO_3/NaOH ratio of 2.5, and AL/FL ratio of 0.5 when cured for 24 h at 80 °C gave optimum ratios for compressive strength of 19.8 MPa after temperature curing for 24 h and water permeability of 2.29 cm/s. The workability of the pervious geopolymer concrete in fresh state increases with the increase of AL/FL ratio, but it decreases with the increasing sodium hydroxide concentration.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Title: Utilization of Waste Plastic in Manufacturing of Bricks

Students Name: Prajwal R (1EP16CV047), Bharath S (1EP17CV010),

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Project Guide: Sharath Babu K

Project Abstract: Plastic waste which is increasing day by day becomes eyesore and in turn pollutes the environment, especially in high mountain villages where no garbage collection system exists. A large amount of plastic is being brought into the tourist trekking regions are discarded or burned which leads to the contamination of environment .Low-density polyethylene bags are cleaned and added with sand at particular percentages to obtain high strength bricks that possess thermal and sound insulation properties to control pollution and to reduce the overall cost of construction; this is one of the best ways to avoid the accumulation of plastic waste which is an on-degradable pollutant. This alternatively saves the quantity of sand/clay that has to be taken away from the precious river beds/mines. Hence in this project, an attempt is made to study regard the properties of the brick which is manufactured using plastic wastes. The present work deals with the manufacturing and analysis of bricks made with waste plastic (LDPE) and fine aggregates. The bricks produced are light weight, have smooth surface and fine edges, do not have cracks and have high crushing strength and very low water absorption. The bricks are manufactured by heating waste plastic to temperature range of 120 to 150 degree centigrade and mixing sand to the molten plastic.

Project Details: This project studies the properties of bricks manufactured by mixing soil and waste plastic and its suitability as a building unit. The waste plastic and soil are batched properly and waste plastic is given heat from below. Soil was added in 1:2 & 1:1 (plastic and soil respectively) proportions into the molten plastic paste for the manufacturing of plastic soil bricks and is poured into moulds of required size. This alternatively saves the quanta of sand/clay that has been taken away from the precious river beds/mines, and is the one of the best ways to avoid the accumulation of plastic waste which is non-biodegradable pollutant.

Result &Conclusion: Plastic brick possesses more advantages which includes cost efficiency, resource efficiency, etc. Plastic brick is also known as "Eco-Bricks" made of plastic waste which is otherwise harmful to all living organisms can be used for construction purposes. It increases the compressive strength when compared to burnt bricks. Walls constructed using plastic bricks have been less costly as compared to the regular bricks and also, they provide greater strength than burnt bricks. Plastic bricks reduce the usage of clay in making of bricks We conclude that the plastic bricks are useful for the construction industry when we compare with Fly Ash bricks and 3rd class clay bricks. The manufacturing cost could be reduced further by replacing the river sand with fly ash/quarry dust or other waste products. The natural resources consumed for the manufacturing of Plastic bricks are very much less when compared to its counterparts.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Civil Engineering

Project Title: Planning, Designing and Detailing of Multi-Specialty Hospital

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Project Guide: Rajani V Akki

Project Abstract: The present study is about planning, designing and detailing a Multi-Specialty Hospital. In this study the general requirements and dimensioning of a multi-specialty hospital building is according to IS 12377:1988 and IS 12433(Part 2):2001 standards respectively. Planning of the hospital building is done using **AutoCAD** software. Design and detailing of planned building were done using **STAAD. Pro** software as per IS standards and design results were compared analytically as per the standards IS 456 (2000), SP 16 (2016). The 3D elevation of the hospital building is done using **Revit** software.

Project Details: AutoCAD, Revit and Staad.pro software's are used in this project to plan design and detailing of multispecialty hospital of B+5 story building. 3D view, 2D view, shear force diagram and bending moment diagram are done based on load parameters

Results & Conclusion: The planning of the hospital building was done for B+5 Floors using AutoCAD software and was planned according to IS 12377:1988 and IS 12433(part 2):2001 standards respectively. And the 3D elevation of the hospital building was done using the Revit software. The Designing and Detailing of the hospital building was done using Staad.Pro software as per IS standards and design results are compared analytically as per the standards IS 456 (2000), SP 16 (2016).

Department of Civil Engineering

Project Title: Design of Flexible Pavements for Low Volume Rural Roads

Students Name: Preethi. G (1EP15CV018), Shravya. B.S (1EP16CV074)

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Project Guide: Dr. V. Harish

Project Abstract: Pavements are required for the smooth, safe and systematic passage of traffic. Pavements are generally classified as flexible and rigid pavements. Flexible pavements are those which have low flexural strength and are flexible in their structural action under loads. Rigid pavements are those which possess noteworthy flexural strength and flexural rigidity. The profound development in the automobile technology has resulted heavy moving loads on the existing highways for optimization of the transport cost. The existing roads which are designed based on the thumb rules are not able to cater to the heavy wheel loads resulting in the deterioration of the existing roads.

Project Details: In the project report, an attempt is made to design a road at Whitefield Road to Hope Farm, based on the principles of pavement design. On the existing alignment of the road, soil samples are collected for the determination of soil characteristics like sieve analysis, C.B.R. values etc.., since all these factors govern the load bearing characteristics of the soil, based on the test results thickness of the pavement (flexible) is designed. Hence the alignment of the road is also designed.

Result & Conclusion: The IRC specifications are based on rational thinking. This project work has made an attempt to incorporate the latest techniques of geometric design. The proposed road is safe in both geometrics as well as pavement design. Pavement designs for a low volume rural road i.e., 1 km from Whitefield Road to Hope Farm Road, it is also proposed to design a flexible pavement by CBR method and some more methods are available, which are much advanced like California resisting value method, McLeod method, Triaxial method and Burmester method. Due to the limitations of time and scope, only CBR method is adopted in this Flexible pavement.

About the Department

Department of Mechanical Engineering was established in 1999 with an Intake of 120 Students for the UG program, PG program established in 2010 with an intake of 18 students both in Product Design and Manufacturing and Thermal Power Engineering. The Department has been awarded research centre status by VTU under which twelve candidates have been awarded with PhD degree and seventeen faculties are pursuing their Ph.D. The Department of Mechanical Engineering has a good team of dynamic, highly qualified and highly experienced faculties both in Industry and academics and dedicated Non-Teaching staffs to boost every individual student. The department actively conducts workshop, seminars, project exhibition, student paper presentations etc. apart from organizing the conferences and seminars. Students are encouraged to carry out the project in varies companies like ISRO, HAL, ADA, MICO, IISC etc., the students also participate and get sponsored by KSCST, VGST, VTU etc., for their project. Also the Department conducts personality Development and soft skill programs for the staff and students.

For the academic year 2021-22 a total of nine batches of students have carried out their final year projects and their abstracts are attached below

Department of Mechanical Engineering

Title: - **Plant leaf Disease Detection**

Student Names: - Manoj gowda R(1EP18ME016), Nagendra N(1EP18ME020), Manohara TM(1EP16ME045), Punith MN(1EP16ME065)

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Guide Name: - Prof.Munendra CV

Abstract: -

India is a cultivated country and about 80% of the population depends upon on agriculture. Farmers have large range of difference for selecting various acceptable crops and finding the suitable herbicides and pesticides for plant. Disease on plant leads to the convincing reduction in both the quality and productivity of agricultural products. The studies of plant disease refer to the studies of visually observable patterns on the plants. Then we use CNN Algorithm to identify all possible subsets. Support Vector Machines (SVM) classification approach are proposed and used in our system. Health of plant leaf and disease on plant leaf plays an important role in successful cultivate of crops in the farm. In early Days, analysis of plant Disease was done manually by the expertise person in that field only. This requires huge amount of work and also requires excessive processing time. The image processing techniques can be used. In most of the cases disease symptoms are seen on the leaves, stem and fruit. Mostly image processing includes regarding images as signals while applying signal processing methods, it is among very quickly growing technologies today, its applications in various aspects of a business. Image Processing is cast core research area within engineering and computer science regulation too. Image processing basically contains the following three steps:

a) Importing the image with ocular scanner or by digital photography.

b) Analyzing and handling the image which includes data condensation and image enhancement and spotting patterns that are not to human eyes like satellite photographs.

c) Output is the last stage in which result can be changed image or report that is based on image analysis.

Conclusion:

This project provides an efficient way for leaf disease detection. There is main characteristics of disease detection are speed and accuracy. Hence there is working on development of automatic, efficient, fast and accurate which is use for detection disease on unhealthy leaf. Work can be extended for development of hybrid algorithms & neural networks in order to increase the recognition rate of final classification process. Further to needed to compute amount of disease present on leaf.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

Title: - **Multipurpose Agriculture Machine**

Student Names: -Jayprakash S Gowda(1EP17ME018), Rajesh B M (1EP17ME038), Prem Raj M (1EP17ME036), Manohara B M (1EP17ME023)

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Guide Name: - Prof. Anjan Babu V

Abstract: -

In this modern era research in the agricultural field is going on. Plant nursery is important part of agriculture field and facing many problems. The problems are Availability of low productivity rate and more manual efforts required for seed feeding. In plant nursery more time is required for plantation which is due to seed Feeding process. For reducing these problems of plant nursery research of multipurpose agriculture cultivator mechanism is used. Multipurpose Agriculture Machine is a semi-automatic operated machine used for agricultural land operation To give better productivity of crops and to ease the work of farmers. Multipurpose Agriculture Machine is used for cultivation of land comprising of three major Agricultural operations in a single prototype machine which in case would reduce. The Machine would be developed considering the difficulties faced by the farmers. Generally cultivation of any crop involves various steps like seed sowing, fertilizing, Irrigation, weed removal and pesticide spraying. Farmer has to use various agricultural equipment and labours for caring out those steps, our purpose is to combine all the individual tools to provide farmers with multipurpose equipment which implements all the scientific farming techniques and specifications and Suitable for all type of seed to seed cultivation with as minimum cost as possible. This Project work is focused on the design and fabrication of multipurpose equipment which is used for land preparation, sowing, fertilizing, pesticides spraying and weeds Removal process.

Conclusion:

Practically our multipurpose agricultural equipment can be used for tilling, fertilizing, sowing, Levelling and also used for weed removal purposes. All the parts are connected in such a way that in every stage of agriculture the equipment can be rearranged or easily assembled with fasteners To required length and specifications of field operation. Our team has successfully combined many Ideas from various fields of mechanical engineering and agricultural knowledge to improve the Yield and by reducing the labour effort and expenses. The whole idea of multipurpose equipment Is a new concept, patentable and can be successfully implement in real life situations.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

Title: - **Real time object Detection**

Student Names: -Guru Lakshmisha D(1EP16ME028), Manjesh V(1EP16ME044), Karthik L(1EP16ME104).

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Guide Name: - Prof. Anjan Babu V A

Abstract:-

Vision impairment or blindness is one of the often disabilities in humans, and unfortunately, India is home to the world's largest visually impaired population. In this study, we present a novel framework to assist the visually impaired in object detection and recognition, so that they can independently navigate, and be aware of their surroundings. The paper employs transfer learning on Single-Shot Detection (SSD) mechanism for object detection and classification, followed by recognition of human faces and currency notes, if detected, using Inception v3model. SSD detector is trained on modified PASCAL VOC 2007dataset, in which a new class is added, to enable the detection of currency as well. Furthermore, separate Inception v3 model share trained to recognize human faces and currency notes, thus making the framework scalable and adaptable according to the user preferences. Ultimately, the output from the framework can then be presented to the visually impaired person in audio format. Mean Accuracy and Precision (mAP) scores of standalone SSD detector of the added currency class was 67.8 percent, and testing accuracy of person and currency recognition of Inception v3model were 92.5 and 90.2 percent respectively. Index Terms—convolution neural network, SSD, Inceptionv3, transfer learning

Conclusion:

A novel framework employing object detection, classification, and face and currency recognition has been presented to assist the visually impaired people. It is fairly simple, and easy To deploy, once the training part is complete. Using separate Inception models for faces and currency recognition makes it faster, user-specific and adaptable. It is one of the most generic frameworks, integrating all the useful features, and will surely prove to be a great service to mankind. Future work can be done to make the face and currency recognition spoof-proof.

DEPARTMENT OF MECHANICAL ENGINEERING

Title: IOT BASED SMART VEHICLE PARKING

Student Names:SHREYAS S E(1EP16ME078), RAKSHITH KRISHNA G(1EP18ME023), LOHITH T R(1EP18ME015) BHARATH M(1EP18ME007)

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Guide Name: Prof. K NIRANJAN RAO

ABSTRACT :

Smart parking systems typically gather data on available parking spots in a certain geographic region and process it in real time to allow vehicles to park in those places. Car parking facilities and traffic control systems are two of the most important challenges in smart cities. The Internet of Things (IoT) connects surrounding environmental objects to the internet, allowing them to be accessed from any remote place. In some ways, the effective application of IoT technology can make life easier for humans. The suggested work is an example of how IoT and cloud can be used together. The goal of this project is to design, assess, and implement a "IoT based sensor enabled car parking system," which allows users to pre-reserve parking slots from a remote location via an app.

CONCLUSION:

➢ This project focuses on implementation of car parking place detection using Internet of Things.

➢ The system benefits of smart parking go well beyond avoiding time wasting and bill to it is generated automatically.

➢ Developing a smart parking solution with in a city solves many environmental problems

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

Project Title: "Fabrication of Manually Operated Paddy Transplanter"

Students Name: : Bharath Cyril Robin S(1EP16ME017), Nirmal Kumar P (1EP16ME056), Sendhil Raj A(1EP16ME075), Sanketh SV (1EP19ME401)

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Project Guide: Prof. Jayasheel Harti

Abstract:-

Wheat and Paddy are the new focuses in farming where still, relatively few scientists and makers take an interest. This field faces a few issues, for example, how to boost the benefit, how to build efficiency and how to diminish the expense. In India, two sorts of horticultural gear are utilized, manual strategy (ordinary technique) and motorized sort. Automation includes the utilization of a gadget between the work and power source. Transplantation is the on the extensive labor processes in agriculture, where in cultivation field the workers need to work in stooping position which creates the physical ailments to labors. In this work, to eliminate the difficulties in rice cultivation design of semi-automatic rice transplanting machine by cost effective method was discussed. This machine helps the farmer to improve the productivity and efficiency. Machine was designed and fabricated by using the available materials. Compare to the commercial machines the project has more economic. Investigation of the machine performance indicates that it significantly reduces the effort of labors and translation time.

Conclusion:

In this study it was concluded that high labor demand during the peak periods adversely affects the timeliness of operation, thereby reducing the crop yield. To offset these problems, mechanical transplanting is the solution. Mechanization not only changes the structure of labor in agriculture, but also influences the nature of the workload. Hence there is a need of mechanization in rice cultivation sector. In this direction Rice transplanter helps us to see a bright future ahead Existing models of rice transplanters are highly efficient and effective in term of cultivation of rice in paddy field. The only problem with the existing rice transplanter is that, these transplanters are very expensive and moreover they possess very complex mechanism which could not be repaired or serviced easily at any ordinary workshop. Hence there is need for designing and developing a rice transplanter for the small scale farmers who are mostly affected by the unwanted situations or condition prevailing in our country can help them to cultivate rice effectively and efficiently with less health related issues. In India since an average farmer possess land of small size in area thus a mechanized rice transplanter would be highly helpful in the rice transplantation. It would also help in decreasing the over dependence of farmers upon labor for transplantation. Transplanter helps to acquire lesser cost of production with higher yield and production moreover the quality of produced rice is also good.

DEPARTMENT OF MECHANICAL ENGINEERING

Title: E- Roller Skates

Student Names: ABHISHEK S(1EP18ME002), VIGNESH V(1EP18ME029),PRADUMNA SRIVASTAVA(1EP18ME021),VIJAY K(1EP18ME030),

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Guide Name: Prof. JAYASHEEL I HARTI

ABSTRACT:

Environmental protection and energy conservations are the main concern of 21st century which has now accelerated the pace to plan and develop electric vehicle technology. The electric vehicles (EVs) offer a zero emission, new automobile industry establishment, and economic development, efficient and smart transportation system. This project having a foot-controlled steering system to control the vehicle easily. It designed to suitable for any road conditions and to reduce the effort of a rider to drive skateboard easily. Currently the permanent magnet brushless direct current motors are the present choice of automobile industries and researchers because of its high-power density, compact size, reliability, and noise free and minimum maintenance requirements. Equipment and cost analysis are done. It deals with the fabrication of vehicle. This includes assembly of skateboard and electric hub motor drive and designing the controllers. Thus, the final stage is to improve the design model of the e-board for off road conditions and suitable for the physically challenged persons. The objective of this project to improve the driving mode of skateboard on off road condition by centred electric wheel on the board and to reduces the effort of skateboard even on uphill area and to design it with foot steering for to improve the steering sensitivity of the skateboard. Dependence on non-renewable resources using latest technology. The implementation involves development of E-board that runs on battery as well as manual propulsion of vehicle.

CONCLUSION:

EV is a vehicle that uses two sources of manual and battery. For low power application manual drive is used whereas   for high power application where power requirement is very high electric power is used. Electric drive is most efficient at high-speed drive. Thus, EV's both mode of operation occurs at their maximum efficiency. Thus, it is most efficient in urban areas mainly in high traffic electric skateboard is used with more efficient. This paper has reviewed the techniques that have been used to model the board design, method of use a board on centred wheel on skateboard.

DepartmentofMechanicalEngineering

Project Title:- Bio Mass Gasifier

StudentNames:-C R Mohan Ramappa (1EP17ME008), Mohammed Fairoz (1EP17ME027), Venu K (1EP16ME093)

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GuideName:-Prof.Girisha N

Abstract:-
Usually all the biogas digesters are use to produce methane gas and the size of the digesters are commonly bigger in size. Some users whom live in poor conditions which that know the uses and the advantages of using methane gas wanted to have a biogas digester at home and wanted to use the methane gas for replacing the cooking gas and to generate electricity, because they cannot afford to buy cooking gas and pay the monthly electric fee.So, because of that they wanted to have a biogas digester, but according to their affordability, they still cannot have the biogas digester which is usually bigger in size.The only solution for them to solve this problem is to produce a mini biogas digester that has same function with the bigger digester.The project involve the developing and analysis the body shape of the digester to make it be more efficient to produce methane gas and also will concern about the structure strength, durability, ergonomic factor and convenience. The new concept of this digester is also being more focus on the strength of its body. All the specifications must be verified to avoid materials and fund wasting. Overall process to design, develop and fabricate this digester required the skills of designing and fabrication and used all the basics knowledge of Static, Industrial Design and Manufacturing Technology.

Conclusion:
This project work has provided us an excellent opportunity and experience, to use our limited knowledge. We gained a lot of practical knowledge regarding, planning, purchasing, assembling and machining while doing this project work. We feel that the project work is a good solution to bridge the gates between institution and industries.
We are proud that we have completed the work with the limited time successfully. The **BIOGAS DIGESTER** is working with satisfactory conditions. We are able to understand the difficulties in maintaining the tolerances and also quality. We have done to our ability and skill making maximum use of available facilities.In conclusion remarks of our project work, let us add a few more lines about our impression project work. Thus we have developed a **"BIOGAS DIGESTER"** which helps to know how to achieve low cost gas. By using more techniques, they can be modified and developed according to the applications.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

Title: Artificial Intelligence Health Care Chatbot System.

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Project Guide Name: Prof. Abhilash A

Abstract

The Chatbots are the computer programs that interact with the users using natural language. The chatbot stores the information in the database to identify the keywords from the sentences and make a decision for the query and answers the question. Also handling the telephonic calls for the complaints is quite hectic. Such a problem can be solved by using medical ChatBot by giving proper guidance regarding healthy living.The medical chat-bots functioning depends on Natural language processing that helps users to submit their problem about the health. The User can ask any personal query related to health care through the chat-Bot without physically available to the hospital. By Using Google API for voice-text and text-voice conversion. Query is sent to ChatBot and gets related answer and display answer on android app. The System's major concern behind developing this web based platform is analysing customer's sentiments.

Conclusion:

By reviewing the literature we come to know that this system giving the accurate result. As we are using large dataset which will ensures the better performance compared as earlier. Thus we build up a system which is useful for medical institute or hospitals to help the users to freely ask medical dosage related queries by voice. System gets output for medicine API and speak out and display all medicine names. We are using NLP because we want to a computer to communicate with users in their terms. So by using SVM algorithm and disease symptoms system can predict disease. User can get related answer displayed and refer this answer for analysis.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Mechanical Engineering

Title: Study on Mechanical Properties of Al 2014 Reinfored Silicon Metal

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Guide Name: Prof. Dinesh Kumar

Abstract:-

In Metal matrix composites, the Aluminum Matrix Composites are gaining increasing attention for applications in aerospace, defense and automobile industries. Stir casting is one of the novel methods to produce metal matrix composites with more uniform distribution of matrix and reinforcement constituents. Stir casting method involves mechanical mixing of the reinforcement particulates/particles into a molten metal bath. A crucible is heated to melt aluminum metal, with a motor and blades is placed in the crucible that helps to get uniform molten metal. The reinforcement in known proportions (0%, 1%, 3% and 5%) is added into the crucible above the melt surface and at a controlled rate, to ensure a smooth and continuous feed. The blades rotate at moderate speeds, it generates a uniform mixing of the reinforcement particles into the melts to produce homogenous composites. Once the composites are produced it is tested for the mechanical properties like tensile strength, compressive strength and hardness for different percentage of the reinforcement.

Conclusion:

- To increase the mechanical property of the Al-SiC composite.
- The results that are obtained from the test indicate the enhancement in the mechanical properties of the Al-SiC composite.
- Care must be taken during casting process to avoid porosity which is affecting the mechanical properties of the Aluminum Composite.

Department of Electrical & Electronics Engineering

About the Department:

The Department of Electrical and Electronics Engineering (EEE) started in the year 2009 with the vision to impart quality education in the field of Electrical & Electronics Engineering and to produce globally competent engineers to serve the society, The mission of the department is to educate the student to become better practicing engineers to meet global excellence and provide better environment through latest developments in electrical engineering involving problem solving,design, practice and training.

The students and faculty of the department receive support and encouragement from its alumni and guidance from expertsfrom premier institutions and industry.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electrical &Electronics Engineering

Project Title: Design of Battery Integrated PV Charging Station for Electric Vehicles

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Project Guide: Prof. Anandhi G

Abstract of Project:

An off grid charging station for the Electric Vehicles with a renewable energy source is the plan. The best source to meet this plan is the solar Photo Voltaic. Also to meet the fluctuations and for getting constant energy we adding an energy storage system also with the PV system. The proposed system consists of a PV array with boost converter, two bi-directional converters and an energy storage system (Li-ion battery).The proposed design can be implemented using Matlab/Simulink to verify the performance of the system.
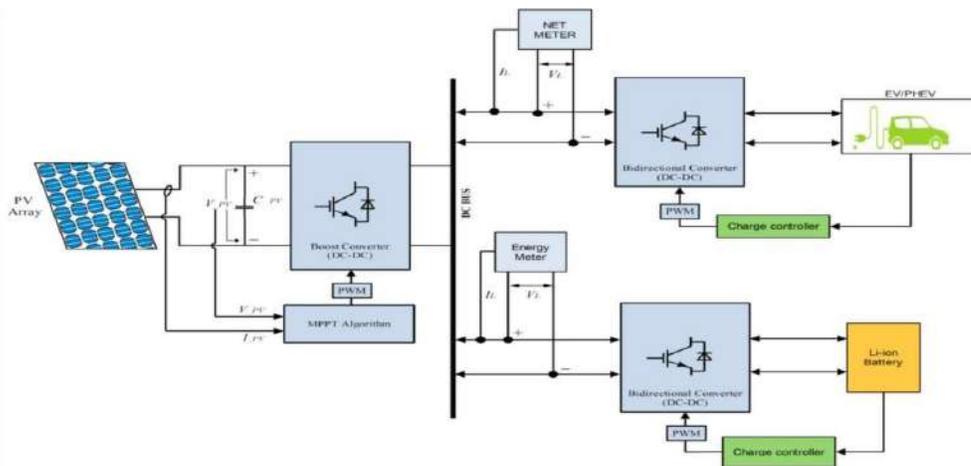
Fig. 1. Proposed block diagram of the battery integrated PV charging station for E

Conclusion: In this paper, a PV charging station is proposed to charge the EV battery. This minimizes the grid burden and increases the EVs utilization at remote locations by using the PV. In this paper, an ESS is connected to the PV charging station which make the system work in any circumstances. The PV charging station with ESS exchange the power to charge the EV battery during the absence or reduced sunlight. Further, a constant current method is used to charge the EV battery at various C-rate. Altogether, this paper presents a more sustainable andefficient PV charging station as well as fervors pollution-free transportation.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electrical and Electronics Engineering

Project Title: Design and Implementation of Neural Network Based PV System For Microgrid Applications

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Project Guide: Prof. Anandhi G

Project Abstract: The need of renewable energy integration with power system is shooting up day by day. Solar PV generation has an important role for battery charging, grid tied applications etc. In order to intensify output power of a solar photovoltaic arrangement, it is imperative to find the maximum possible energy harvest from photovoltaic panel. In this project, using artificial neural network (ANN) for tracking of maximum power point is discussed. Feed Forward propagation method is used in order to train neural network. Neural network has advantages of fast and precisely tracking of maximum power point under different atmospheric conditions.
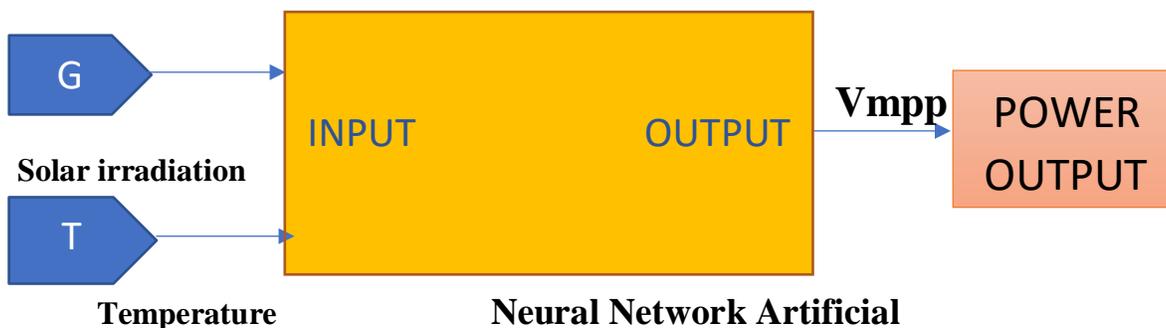
Conclusion: The neural network-based MMPT. Under any variation in atmospheric conditions, by using neural network, point of maximum power is specified fast and precisely. Another advantage of the neural network in PV maximum power-point tracking is its better dynamic performance in comparison with the other methods also the maximum power point is tracked by dc-dc boost chopper so the maximum power solar energy and the best efficiency are obtained.

EAST POINT GROUP OF INSTITUTIONS

Department of Electrical & Electronics Engineering

Title: Grid Interconnection of High Step-up DC to AC Converter with Renewable Source Integration withResonant Switched Capacitor

Student Names: PUNEETH KUMAR N N (1EP16EE030), ASHWINI R (1EP18EE004), RANJITH M (1EP18EE011), VIGNESH M (1EP19EE402)

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Project Guide: Prof Vetrikani

Project Abstract: The development of renewable energy sources is crucial to relieve the pressures of exhaustion of the fossil fuel and environmental pollution. At present, most of the renewable energy sources are utilized with the form of ac power. Moreover, the common problem of the renewable energy sources, such as wind and solar, is the large variations of output power, and the connection of large scale of the renewable sources to the power grid is a huge challenge for the traditional electrical equipment, grid structure, and operation. The connectors between the renewable energy sources and HVDC grid, the step-up dc–dc converters not only transmit electrical energy, but also isolate or buff kinds of fault conditions; they are one of the key equipment in the dc grid.
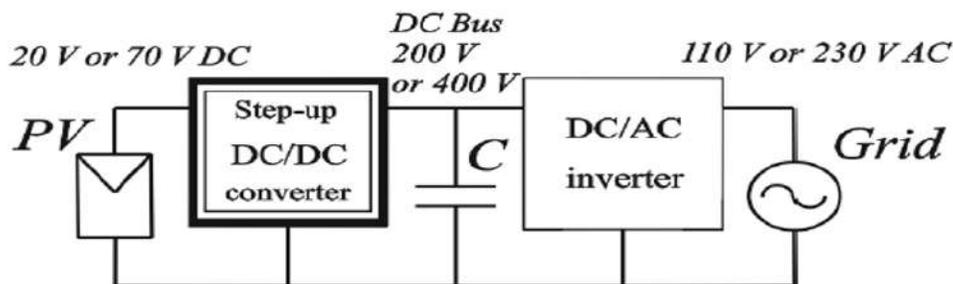
Conclusion: This project presents a no isolated high step-up dc– dc power converter implemented by the combination of coupled-inductor and SC techniques for Grid application. The drop inductance of thecoupled inductor is utilized to get soft-switching of the diodes employed in the proposed converter. The voltage stress on the main switches is the same as that in the conventional boost converter with the same input voltage and duty ratio. In this converter used low-voltage-rated MOSFETs with small on-state resistance to improve the efficiency. In this converter high step- up pulse width modulation dc-dc converter. combining both coupled-inductor and switched capacitor (SC) techniques is fed to a grid and the performance of the gird is analyzed by using MATLAB/SIMULINK 2017B software.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electrical & Electronics Engineering

Project Title: Detection of Faults in Power Transmission Lines using Fuzzy Logic Technique

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Project Guide: Vasavi K

Project Abstract: As Transmission lines safeguard against exposed fault is the most critical task in the protection of power system. The purpose of a protective relaying is to identify the abnormal signals representing faults on a power transmission system. So fault classification is necessary for reliable and high speed protective relaying. This paper uses fuzzy logic technique for fault classification and this study describes a new approach to distinctly identify and classify groundand phase faults by using two separate fuzzy classifiers. Samples of post fault currents from allthree phases at one end of the transmission system are being used to classify the nature of the faults. To demonstrate the effectiveness of this method, simulations considering various operating conditions have been performed on MATLAB. The simulation studies of the proposedtechnique indicate that the accuracy in fault classification increases because of two fuzzy classifiers is used for fault analysis.
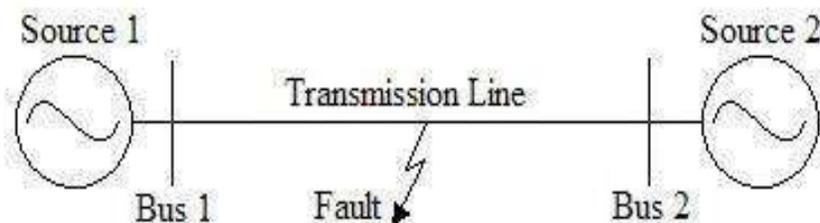
Figure: Power System Model

Conclusion: A fuzzy logic based technique has been presented for the identification and classification of faults. The proposed technique requires considering the post fault currents of all three phases at one end of the transmission system. Based on the values of fault index (@), the presented technique detects the ground faults and phase faults. In this presented method, separate rules have been framed for both ground and phase faults. This respective input fed to the fuzzy classifier systems to classify nature of the fault. Simulation has been performed by considering various conditions to satisfy the efficiency of the presented technique. Simulation was carried out on a 400kV, 3 phase and 200km line to support the results of the proposed technique. The simulation results have led to conclude that the technique is quiet robust.

EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

Department of Electrical and Electronics Engineering

Project Title: Energy conservation through energy audit.

Students Name: Anumol Rajesh(1EP18EE002), Pooja C(1EP18EE010),Tejasri GP(1EP18EEO12), Ramanath M(1EP19EE402)

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Project Guide: Prof. Avinash B C

Project Abstract: Day by day, energy demand keeps rising so that it is essential to reduce energy consumption for that energy conservation is needed. For Conservation of energy the best option is energy audit.

The main objective of this project is to conduct an energy audit on commercial loads to evaluate use of energy & produce Audit Report (lighting& RL load) we propose report consist of lighting installation , reactive power compensation ,power installation and maintenance curtail losses and determine the opportunities for energy saving with energy efficient partice or techniques to be adopt in industry to make industry more energy efficient.

Plan of action
Phase 1–pre audit phase :
Step 1   Plan and organize , Walk through audit, Informal interview .
Step 2   Introductory meeting .
Phase 2–audit phase :
Step 3   Primary data gathering, process flow diagram and energy utility diagram.
Step 4   Conducting survey and monitoring.
Step 5   Conduct of detailed trails/tests for selected major energy equipment.
Step 6   Analysis of energy use.
Step 7   Identification and development of energy conservation(ESCON) opportunities.
Step 8   Cost benefit analysis.
Step 9   Reporting and presentation.

Conclusion: We are targeting to reduce 20-40 percent of energy consumption and increase 2-5% of renewable energy with additional constructional cost of 2-5 percent or less in commercial buildings.

It has been concluded from the research that commercial buildings can be certified in the present scenario.

In these days of uncertainty, it is important to keep operating expenses to a minimum. Unnecessary costs include costs for energy we don't, need to use. The major loads for a commercial buildings are the lighting loads, pumps and the major motors running for hours.

Therefore major consumption in lightening system can be reduced by using efficient lamps with less power rating and the efficiency of which is more. The system for lightening can be modified by changing the filament bulbs the fluorescent lamps , these products incur high losses in power and more consumption therefore it should be replaced by LED bulbs the CFL's. these have high energy saving.

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Department of Electrical and Electronics Engineering

Title: Design and Implementation of Fuzzy PID controller for Speed control in BLDC motor

Student Names: Rajashekar K (1EP16EE037), Goutham Rao G (1EP17EE005), K S Chidananda Rao (1EP17EE006), Nithin Raj J (1EP17EE011)

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Project Guide: Prof.Avinash B C

Project Abstract: This project presents a Fuzzy Control technique for speed control of BLDC motor. The proposed controller is an integration of fuzzy PID and PD controllers. The objective is to utilize the best attribute of fuzzy PID and PD controllers, which exhibits a better response. The error back propagation learning algorithm (EBPA) is used to train the data to minimize learning error. To validate the performance of proposed controller, simulations are done in MATLAB and comparison is made with PID, PD controllers. In addition, the performance of proposed controller is benchmarked with other controllers reported in the literature. The results of the proposed controller are promising in terms of quick settling time, zero peak overshoot and zero steady state error.
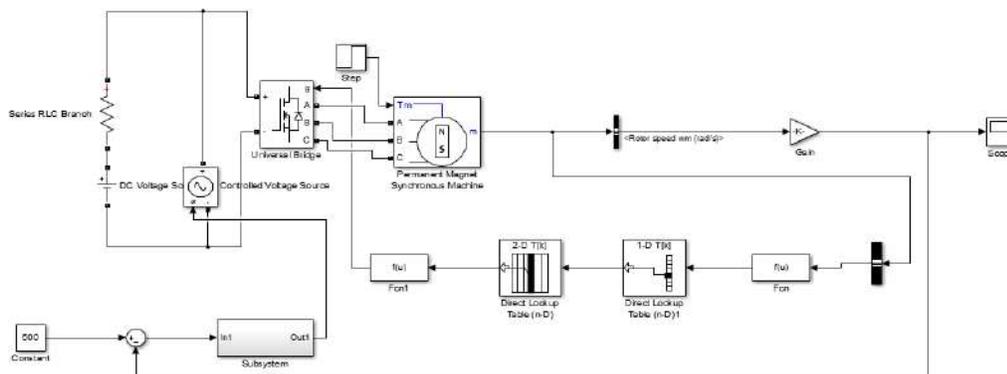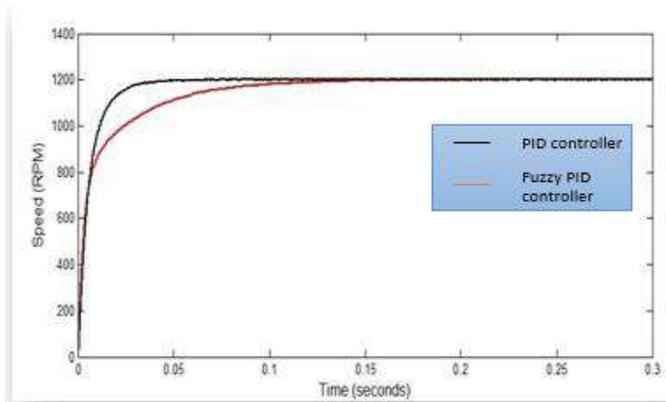
Figure.1. Simulation circuit Diagram

Figure.2. Simulation Output

Serial No.	Type of Controller	Control Parameters		
		Settling time	Peak Overshoot	IAE
1.	PI Controller	0.15	0	18.9
2.	Fuzzy PID Controller	0.015	0	13.35

Table.1. Comparisons of Controllers

Project Conclusion: To get and verify the desired values of the Fuzzy PID controller for speed control in BLDC motor, it has been compared with existing method of PID controller. The results of the Fuzzy PID controller with comparison to existing method is showed in Table. The result of the controller used is promising with respect to the factors like quicker settling time, zero peak overshoot, and zero steady state error and the absolute integral error caused over time is comparatively very less. The control technique used can be implemented in various industrial applications such as industrial automation, control system engineering etc. It can be observed the faster settling time of 0.015 sec compared to 0.15 sec.

Dr. S M Venkatpathi
FOUNDER CHAIRMAN
East Point Group of Institutions
18th April 1955 - 6th December 2017

"India should create more wealth to keep the poverty at bay, for that the only answer is education, My life is to work day and night to create a great institution putting all my resources that I have at my disposal."

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