PROJECT DETAILS 2021-22

1.Project Title: ASSISTIVE DEVICE FOR BLIND,DEAF AND DUMB PEOPLE USING RASPBERRY-PI

Project Guide: Ms. Shruthi P R

Project team: Preetham Kumar S, Ranjith Kumar A V, Rithvik A, Shravan A Shanthigodu

Abstract:

One of the most precious gifts to a human being is an ability to see, listen, speak and respond according to the situations. But there are some unfortunate ones who are deprived of this. Making a single compact device for people with Visual, Hearing and Vocal impairment is a tough job. Despite the large number of dumb and deaf people very less research is done in order to reduce the communication barrier. We propose a system which helps normal and deaf dumb people to effectively communicate with each other. In resolving these difficulties with visually and vocally impaired people, we have used a tiny credit card size computer named Raspberry Pi. This project provides a way for the people with hearing impairment to visualize / read which is in audio form by speech to text conversion technique and we also provides a way for the vocally impaired to represent their voice by the aid of text to voice conversion technique. All these three solutions were modulated to be in a single unique system. All these activities are coordinated with the use of Raspberry Pi. The visually impaired people are helped by the process in which the image to text and text to speech is given by the Tesseract OCR (online character recognition). The deaf people help with the process, which makes them to understand what the person says can be displayed as the message. Vocally impaired people can convey their message by text so the other persons can hear the message in a speaker.

2.Project Title: AUTONOMOUS VEHICLE USING ARDUINO AND RASPBERRY PI

Project Guide: Ms. Nirupama K

Project Team: Maneesh P Shetty, Manish P, Shreyas M, V

Abstract:

With the advent of Internet of Things (IoT), the realization of smart city seems to be very imminent. One of the key parts of a cyber physical system of urban life is transportation. This mission-critical application has attract many researchers in both academia and industry to investigate driverless cars. In the domain of autonomous vehicles, intelligent video analytics is very critical. By the advent of deep learning many neural networks based learning approaches are under consideration. In this project a simple autonomous car is designed and implemented. The concept of the project was inspired by the recent surge in automated car industry. The designed car was capable of detecting the road signals and taking the right turn accordingly. To implement the whole system, the body of

the car was connected to Arduino and Raspberry Pi. In a real car the analyzer computer can be simply mounted on board. The whole system is capable of taking right decision that will detect objects, stop sign, traffic signal and road lanes

3.Project Title: DESIGN AND IMPLEMENTATION OF 3D OBJECT

Project Guide: Ms.Prabha G S

Project Team: Acharya Sumanth, Mahammad Adil Sha, Sushanth, Sai Giridhar

Abstract:

A 3D printing technology is not only used in industries but also used at those places where the prototyping is an important constraint. It is an additive manufacturing technique in which 3D objects are printed with the help of CAD (computer-aided design) software. Different processes are available in 3D printing technology such as FDM (fused deposition method), SLS(selective laser sintering), EBM (electron beam machining), LOM(laminated object manufacturing), DLP (digital light processing),etc. We have focused on the design and fabrication of a portable 3D printer which can be constructed economically. While 3-D printers are already out in the market and doing well, there is still a need for a smaller and more cost effective design and low wastage of printing material. This is what we achieve to do with our project. We are using 4 axis mechanisms where 3 axes are x-y-z and the fourth axis is an extruder. The process adopted by us is FDM technology, in which different materials are used like PLA (poly lactic acid), ABS (acrylonitrile butadiene styrene),), etc. By heating any of the filament material to its melting point and it is deposited layer by layer. Combination of many layers of such type will give us a final 3D model.

4.Project Title: HYPERSPECTRAL CLASSIFICATION OF REMOTE SENSED DATA FOR CROP DISEASE PREDICTION

Project Guide: Mr.Vinay P

Project Team: Pooja Rajendra Jadhav, Shreenidhi B K, Sowjanya , Supritha

Abstract:

Indian economy greatly depends on agriculture. Nowadays detection of crop disease is very important topic for analysis. It is one of the issues that cause reduction in quality and quantity of crop. So, detection and classification of crop disease is necessary task to increase crop productivity and economic process. The project work is to analyze various image processing techniques applied to detect crop disease. Here, crop field images are taken as input and after processing that image, it will detect whether there is any disease or not. When crops are infected by diseases, there is a change in shape, size, and color. These symptoms can be checked manually but not in the proper amount. Hence various image processing methods detect diseases on plant. Using image processing

techniques exact level of disease can be identify based on color, texture or shape change of plants. And then using Multilevel SVM algorithms we classify these diseases and provide a solution for the particular disease.

5.Project Title: IOT Enabled smart automated irrigation system

Project Guide: Dr.Mahantesh R Choudhari

Project Team: Mithesh K R , Rahul R S, Ranjith M

Abstract:

Smart Irrigation System is next-gen irrigation system which strives to bring the improvement in the field of agriculture by focusing on one of important aspect called the irrigation. the agricultural problems. The 21st century became the beginning of the development of information technology. where one of the revolutions was the presence of the Internet of Things. Internet of Things or abbreviated as lof is a technology that combines electronic devices, sensors, and the internet to manage data and applications. With this project we strive to bring the same technology in order to implement the smart irrigation system with precision farming. The Internet of Things can be adopted in agriculture for crop management as a media for monitoring and controlling, especially in greenhouses and is called Precision Farming. The application of precision farming will be more effective in a greenhouse because it is easier to engineer similar environmentalconditions. It"'s very hard for farmers to manage the irrigation to large land with a lesser number of resources like pumps and water sources. This project tries to solve problem with use of IOT and mobile application. Farmers with the system we built will be able to make the water flow to different part of the land easily trough their mobile application from any part of the world. Also, they are able to monitor the quantity of water sent, weather condition, temperature, moisture in soil using sensors. They are also able to automate the process with respect to time or the sensor input. (Soil moisture, temperature etc.)

6.Project Title: Mobile Application Based Unmanned Military Surveillance Vehicle

Project Guide: Ms.Sowmya Anil

Project Team: Harsha C S, Thilak T P , Keerthan K J, Akash Bhat H

Abstract:

A Nation's first line of defense is its Armed forces. The Indian Armed Forces consist of three professionally uniformed services, the Indian Army, the Indian Navy, and the Indian Air Force, and are supported by various other services. Among them, the Indian Army and other services that operate on land are prone to casualties due to them being the units on the frontline, facing the enemies up close. On land, the defense personnel deployed at a critical area to eliminate threats

might fall prey to traps set up by enemy units like mines. The casualties due to this can be reduced or avoided by gathering information on such traps and ambush positions before the troops are sent in. In our project, we are providing a system that helps with landmine detection using a remote rover controlled by a mobile application on a smartphone. The UMSV is a land-dwelling vehicle that detects mines, and sends crucial information back to the mobile application. This in turn will reduce the risk of injuries and possible deaths when the troops face such situations.

7.Project Title: Payment gateway using blockchain

Project Guide:Mr.Akshay S.P.

Project Team: Akash Y ,Anish B,Karthik Prasad M.S.

Abstract:

Blockchain is a technology that is developed using a combination of various techniques such as mathematics, algorithms, cryptography, economic models, and so on. Blockchain is a public ledger of all cryptocurrency transactions that are digitized and decentralized. All the transactions of cryptocurrencies are stored in chronological order to help users in tracking the transactions without maintaining any central record of the transactions. Application prospects of blockchain are promising and have been delivering the result since its inception. Blockchain technology has evolved from initial cryptocurrency to new age smart contracts and has been implemented and applied in many fields. Although many studies have been carried out on the security and privacy issues of the blockchain, a systematic examination on the security of blockchain systems is still missing.

8.Project Title: Smart Glasses for visually challenged people

Project Guide: Ms.Nisha G.R.

Project Team:Ahishree Rai P, Anusha Prabhu N, Apoorva Bhaktha, Bindushree N G

Abstract:

Blind mobility is one of the major challenges encountered by visually impaired persons in their daily lives. Their life and activities are greatly restricted by loss of eyesight. They normally travel using blind navigation system or by their accumulated memories in their long-term exploration. The Smart Glass represents potential aid for people who are visually impaired that might lead to improvements in the quality of life. The smart glass is for the people who need to navigate independently and feel socially convenient and secure while they do so. This project (Smart Glasses for Visually Challenged People), as meant are the glasses for visually impaired people. It consists of glass, a camera, Raspberry Pi, headphones and ultrasonic sensor. The camera captures the image of the person infront of the blind and the image recognition is done using the python code and the

information about the person is sent through the headphones connected to it and using an ultrasonic sensor the obstacle is detected, which generates an automated voice in the earphone connected to the person's ear

9.Project Title: Qualitative analysis of milk

Project Guide: Mr.Naveena C

Project Team: Akshatha, Anusha P U, M Pallavi

Abstract:

'Adulteration' means the addition of other substances to milk to increase the quantity of raw milk. Milk can be also adulterated during unhygienic processing, packaging, and distribution. Water is used as a most common adulterant, which increases the quantity of milk but decreases the quality of milk. Various atmospheric factors like temperature, humidity and darkness also affects the quality of milk. These can control by refrigeration and vacuum storage.This project is implemented using Arduino uno. All the sensors are combined to form compact and flexible system which analyze and classify the quality of milk into different grades and finally output displayed on LCD screen. Problem faced in small diaries and by the individuals can be prevented by detecting the quality of milk, and also prevent from causing the hazardous diseases.

10.Project Title: GOPINN: PROTECTION OF WOMEN USING IOT

Project Guide: Ms.Rajani Rai B

Project Team: Akanksha Pangal, Ananya Bhide, Apoorva D U

Abstract:

Women are the backbone of economy, primarily shaping future of the country. She who earlier stayed at home to attend her domestic duties is now maintaining work and home simultaneously, participating in the process of economic development on an equal footing with men.Nowadays not only women but children also get molested. In order to provide security and to ensure their safety a system has been proposed. Using these technologies, a self-defence device is proposed in this work by adding new feature thereby making it more secure. In order to ensure the safety and security of every woman in our society, this design is the most important aspect of it. The design also aims at furnishing a defence mechanism along with presence of finger print detector, to cover when in a vacated place. The core goal of developing this device is to address the issue of personal safety more effectively.

11.Project Title: Edulite

Project Guide: Mr.Shivaprasad

Project Team: Anush Naik ,Deekshith,Manjunath B,Siddhanth B.S.

Abstract:

As the world is being created with the modern technologies, finding and controlling modern thoughts and ideas of taking everything online are quickly changing. It is troublesome for teachers to circulate their notes to each and every student whom he/she is educating. Notes management system gives a straightforward approach for both students and instructors to circulate the notes whether of any kind like address notes, task questions, address papers and all the vital archives. The instructors and students can transfer the reports from any place and anyone can download it. Generally, it is managed by the admin.Notes management system deals with borrowing and exchanging the notes from senior student to junior student. It is a WEB-based framework particularly planned for students of specific college. This system is being delivered for students curious about borrowing and giving their own notes for the free of cost. .

12.Project Title: AI - ENABLED SMART DOORS TO PREVENT COVID-19 TRANSMISSION

Project Guide: Mr.Shivaprasad

Project Team: Karthik Prasad, Madhava Raj B, Sanjan Govind K,Gokulnath

Abstract:

COVID-19 pandemic is causing a global health epidemic. The most powerful safety tool is wearing a face mask in public places and everywhere else. The COVID-19 outbreak forced governments around the world to implement lockdowns to deter virus transmission. According to survey reports, wearing a face mask at public places reduces the risk of transmission significantly. In this project, an Ai-enabled smart door that uses a machine learning model for face mask detection and Internet of Things (IoT) technology for monitoring body temperature. The proposed model can be used for any shopping mall, hotel, apartment entrance, etc. As A an outcome a cost-effective and reliable method of using Al and sensors to build a healthy environment. Evaluation of the proposed framework is done by the Face Mask Detection algorithm using the TensorFlow software library. Besides, the body temperature of the individual is monitored using a non-contact temperature sensor. This proposed system can safeguard the users from COVID 19 by enabling the loT) technology .

13.Project Title: Dry Hand washing machine using fog disinfectant to save water

Project Guide: Mr.Suhandas

Project Team: Shifali A Rai,Shravya,Madhuri Sharma

Abstract:

The meaning of sanitization took a drastic turn with the birth of Corona virus that literally changed our mindset about personal hygiene. No one used to give much thought about it but after Covid-19

came into the picture, sanitization became the primary concern of everyone regardless of their age, gender and place. The whole world got to know the necessity of proper sanitation practice. The first, and probably most obvious means of sanitation is hand washing. As the United States Centres for Disease Control states. "Hand washing is one of the best ways to protect yourself and your family from getting sick." As simple as it may seem, proper hand washing remains the most effective way of removing germs and harmful bacteria from our hands. This prevents the spread of diseases and keeps our environment safe, fresh, and clean. There are many easy ways to keep the hands clean. The common methods used in many workplaces include the use of sufficient soap and water or good alcohol-based sanitizers when water is not easily accesible. It will be easier to take hand washing more seriously when we know the A benefits of keeping the hands clean as much as possible and also keeping the environments properly sanitized. But washing your hands multiple number of times per day mught consume excessive amount of water. To help solve this, we here design a system that provides hand washing while consuming over 95% less water. By using fogging system in our project, we ensure that the herbal disinfectant reaches every corner of our hands in the form of fog and make sure that the sanitization happens properly.

14.Project Title: MPPT BASED SOLAR POWERED AUTO IRRIGATION SYSTEM USING MICROCONTROLLER

Project Guide: Mr.Mahabaleshwar Bhat

Project Team:N Anusha Rao,Sanitha Chandran K, Shilpa K B, Vishrutha

Abstract:

Renewable energy sources have a great concern nowadays to overcome the conventional energy sources problem. The solar energy is one of the promising renewable energy resources that is implemented in different scale to the energy demand. Solar energy is the most abundant source of energy in the world. The Photo voltaic cell (PV) is used to convert solar energy into electrical energy which has non-linear characteristic between its current and voltage and also is highly sensitive to the atmospheric conditions, in particular temperature and solar radiation. Photovoltaic generation is an efficient approach for using the solar energy. Solar powers used as only the source of power to control the overall system, MPPT charge controller used along with PV Cell. This system A monitors the moisture needs of crops through buried sensors and automatically pumps water for irrigation when the need arises. Without visiting the fields, farmers can get the information about the Moisture content in the soil. The system is very simple to operate and ideally suits the irrigation need of rural farmers. Solar powered irrigation system can be a suitable alternative for farmers in the present state of energy crisis in India.

15.Project Title: SMART CITY

Project Guide: Mr.Gurusandesh

Project Team:Moulya S, Nisha H R, Poorva G Chapolkar, Shreya N

Abstract:

Internet of Things (IoT) is an emerging technology that creates a massive network of things communicating with one another. It encompasses a broad set of technologies, sensors, hardware and software stacks. Data, humans, sensors, devices, Wi-Fi modules and communication have always been the critical elements of loT system.Smart City is an loT based project approach that aims towards solving some of the important daily life issues faced by the people out there. This project involves application of loT paradigm to four main problems, those are the poor waste management systems, the energy wastage that occurs due to inefficient controlling of the streetlights, the chaos created due to inefficient parking allotments or management at crowded areas and finally the amount of air pollution in cities and people there being unaware of the pollution level in their cities. This approach uses sensors such as ultrasonic sensor, gas sensors, etc, that are connected to device having Wi-Fi modules, it also includes cloud services for storage of sensor data and also a web application for services such as alerting about vacant parking slots to the one searching for it in that particular location. This web application would also he used to send alert messages to the municipality about condition of local garbage bins and also to send the details of faulty streetlights if any, to the electricity board. Implementing this project would in turn make the lives of people much easier and improve their quality of life.

16.Project Title: VOICE CONTROLLED MECHANICAL ARM

Project Guide: Dr.Mahantesh R Choudhari

Project Team:Gourav N Gunaga, Hemanth S R, Kaushik J, Kiran G O

Abstract:

The project titled "VOICE MECHANICAL CONTROLLED ARM" describes the design of a simple, low-cost microcontroller based arm for helping physically disabled persons. Arm is an intelligent agent that can perform tasks by voice control. We developed a working prototype of a voice-controlled robotic arm for physically disabled people. The main aim of the project is to develop a low-cost robot hand that is light and strong. Our project, a voice-controlled mechanical arm, does some predefined actions based on the commands we give. We are giving the input speech through the microphone. The mechanical arm movements are done using circuitry of servo motors which are placed and aligned at specific rotations and positions. The movement control is done by a raspberry pi.

17.Project Title: DEEP LEARNING METHOD FOR ATRIAL FIBRILLATION DETECTION USING RR INTERVAL

Project Guide: Mr.Shrikanth Rao

Project Team:Anwitha A, Deekshitha B, Disha S, Kavyashree U M

Abstract:

Atrial Fibrillation (AF) is one of the most common heart rhythm disorders. AF is characterized by a rapid, irregular heartbeat and highly variable ventricular intervals. In clinical practice, AFis detected manually. Automatic detection of AF is one of the major challenges in the field of heart arrhythmia. Accurate diagnosis of AF is obligatory for initiation of effective treatment to prevent stroke. In this project we have proposed an algorithm to develop a new AF detection technology that could be assistive in screening and treatment thus reducing mortality. ECG signal is de-noised using Discrete Wavelet Transform (DWT) and Savitzky-Golay filter. QRS complex is computed using Pan-Tompkins algorithm. The algorithm classi classifies Electrocardiogram (ECG) signal into three classes namely normal, AF and other rhythms using VGG16.