

DEPARTMENT OF COMPUTER SCIENCE
IGDTUW



MAJOR PROJECT ABSTRACTS
B.Tech (6TH SEM)

Compiled by

**Zeenat (PhD Scholar), Manasi, Amrita Srivasatava, Amrita Joshi, Jithu,
Nicy, Kirti (MTech-MPC)**

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GENSMART SAFETY SEAT BELT

NAME OF STUDENTS: Ashita Bansal, Ayushi Gupta, Bhawna Kumari, Paridhi Gupta,
Tanu Mehrotra

GUIDE NAME: Dr. S.R.N. Reddy

ABSTRACT

There are a number of road accidents that occur due to the driver dozing off while driving. Also, in the worst case a driver might suddenly suffer from a situation like a heart attack while driving, which not only puts his own life at risk , but also of the others on road at that time. The aim of our smart device is to help SMARTLY reduce the accidents taking place due to these reasons.

This device can be easily integrated with the seat belt worn by the driver while driving, such that while driving, if the driver dozes off to sleep, 8 to 10% fluctuations in his heartbeat are sensed by the pulse rate sensor which ultimately triggers the buzzer, thus waking up the driver and preventing any potential accident. If in case the driver suffers from a heart attack while driving, an emergency alert can be sent immediately to any of his relatives who can then take the best possible action at that time.

Thus, as an extension to the Government's drive to reduce the number of road accidents, our Smart Safety Seat Belt device is an initiative to help people save their own and their dear one's precious human life.

Keywords: Safety, pulse rate sensor, accidents

FIT-O-METER

STUDENT NAMES: Anisha Dayma, Khushbu Jain, Paridhi Passi, Shweta Ashok

GUIDE NAME: Dr. S.R.N. Reddy

ABSTRACT

Now a days, people are so busy that they tend to neglect their health and have no time for going to hospital for regular check-ups.

Our device is a fitness tracker which will track the user's pulse rate, heart rate and let the user know about her/his health conditions. It will also notify the user about any abnormality in their health conditions. The data about the heart condition of the user will be available on the Intel cloud, so that the user can have a regular check on their health.

Keywords: IOT, Sensors, Intel, Fitness tracker

ATTENDANCE SYSTEM

STUDENTS NAME: POOJA KUMARI, SHAIKALI CHOUDHARY,
BHAGYASHREE HEDAU, GARIMA MAHAR

GUIDE NAME: Dr. S.R.N. Reddy

ABSTRACT

Every organization whether it be an educational institution or business organization, it has to maintain a proper record of attendance of students or employees for effective functioning of organization. Our smart device comes with a solution. It will improve accuracy of attendance records because it will remove all the hassles of roll calling and will save valuable time of the students as well as teachers.

Keywords: Fingerprint sensor

SECURE SMART

STUDENT NAMES: Neha Rani, Tejaswini Gautam, Shikha Gupta, Tanvi Surana, Nancy Goel

(B.Tech CSE, 6TH Semester)

GUIDE NAME: Dr. S.R.N. Reddy

ABSTRACT

A secure smart system for home safety with instant notification of anonymous person trying to break the secured system with false intentions.

Our project is targeted towards building an integrated system for safety services in the event of home and property burglary and other thefts.

The project focuses on building an infrastructure which any organization or individual can implement to enhance the security of their property and valuables by recording the event in images and alerting the owner instantly so that appropriate actions could be taken to prevent unauthorized access to the property or valuables.

We have achieved this using existing wireless network infrastructure and GSM technology integrated with Raspberry Pi. This enables the owner to remain updated with event record of the unauthorized access the system through email notifications and call/SMS alert. Also allowing the owner to send OTP to grant access after verifying the person.

Our target was to build a low cost device that everyone can afford and setup easily to ensure a sense of safety to their property.

Keywords: Home Security, Wi-Fi, GSM, Raspberry Pi, Alert Notification

PI-ELECT

NAME OF STUDENTS: Navneet Mann, Aditi Singh, Shalini Bhardwaj, Somya Bhupal, Neha Rohilla

GUIDE NAME: Dr. S.R.N. Reddy

ABSTRACT

The use of EVMs ushered in multiple benefits: low operation cost, requires less manpower, controls electoral malpractices and many more. However, now it has been realised that EVMs may not ensure transparency in holding elections. The EVMs may be rigged. The voters may not be able to verify if the votes have been recorded accurately.

To bring in greater transparency in the voting process, a smart voter verifiable electronic voting system can be used. In this, as soon as the voter casts his ballot the display screen in the front displays the candidate in whose favour the voter casted his vote.

Moreover, to make the system more secure, PIR sensors present at the start of the polling booth can lock or unlock the EVM as the voter enters or exits the booth.

Keywords: Raspberry Pi3, PIR sensor, camera, UI, EVM

MULTIPURPOSE AND RESOURCEFUL SMART (MARS) BIN

STUDENTS' NAMES: Shivangi Jha (01601012013), Megha Goyal (02801012013), Suruchi Jain (03201012013), Mansi Yadav (04501012013), Khushboo Goel (06301012013)

GUIDE NAME: Dr. S.R.N. Reddy

ABSTRACT

Fire detection is one of the major problems today. Hence we propose to build a smart e-bin that along with effective disposal of e-waste, will provide the functionality of fire detection and weather sensing. Whenever fire is detected, any nearby local authorities will be informed about the same. Hence, the device will aid in disposal of e-waste, fire detection and weather sensing.

Keywords: Fire Detection, E-bin, Weather Sensing

SMART AGRICULTURE SYSTEM

STUDENT NAMES: Himali Singal, Vidhi Jindal, Ayushi Jha, Ridhi, Hashmina Singh

GUIDE NAME: Dr. SRN Reddy

ABSTRACT

This project automates the agriculture system. It detects the soil moisture from the field and the temperature from the atmosphere. Based on these values, it automatically releases a certain amount of water. This water level is indicated by 5 different LEDs. There is an additional alarm system, which turns on in case the temperature in the field becomes abnormally high. All the information about the temperature, moisture and water released is sent to the farmer's mobile phone via Bluetooth.

Keywords: IOT, Sensors, Raspberry Pi 2, Bluetooth, Soil moisture, Temperature, LED

SMART AUDIO BOOK READER

Name of Students: Shreya Jaiswal, Venika Singhal, Apurva Chawla, Anjali Aggarwal, Anita Bhatia

Name of the Guide: DR. S. R. N. Reddy

ABSTRACT

The Old age people find it hard to use the advantages of modern day technology as they are not so comfortable with the complexity of the gadgets. They do have a taste for entertainment, and love having some time-pass activity. Keeping this problem in mind, we vision and endeavor to develop a portable audio book reader using the Raspberry pi 2. Smart Audio book reader, a device which will be a friend to the old and would help them fulfill their thirst of knowledge, by letting them listen to their favorite books as an audio file. This will be done by the embedded text to speech converter.

Keywords: Audio book, old age, Raspberry Pi2

PiPark : THE SMART PARKINGSYSTEM

STUDENTNAMES: Sharmistha Rai, Sukriti Sehgal, Namrata Gupta

GUIDE NAME: Dr. SRN Reddy

ABSTRACT

Over-populated nations like India and China face an overwhelming traffic crisis. High number of cars on road have made parking difficult. We propose to develop a smart car parking system. An LCD screen, at the entry gate, displays the number of available parking slots. Sensors are placed at the entrance which detects the vehicle and decrements the number of available slots. A similar setup is placed at the exit to increment the number of slots available each time a vehicle leaves. Similarly, sensors will be placed at each slot that will indicate whether the slot is occupied or vacant. This information will be updated at the diversion and the number of available slots will be accordingly changed.

Keywords: Sensors, IOT, RaspBerry Pi, Parking System

SMART CLASSROOM SOLUTION

STUDENTS: Fatima, Monika, Somya Khosla

GUIDE: Dr. S.R.N Reddy

ABSTRACT

The SMART CLASSROOM SOLUTION is an automated system based on Raspberry Pi to access files remotely from a cloud platform with a user interface to download and open files along with notification capabilities. Using the Google API, the raspberry pi is connected to the google drive. The files from the drive can now be fetched easily.

This small piece of hardware works on the following:

- I. It enables us to list and view files submitted to the cloud platform.
- II. It notifies the admin whenever a new file is submitted.
- III. It notifies the Class Representative about the ETA of the teacher through a sms.

Keywords: Smart class, Google API, Raspberry Pi

VOICE CONTROLLED ODAR

NAME OF STUDENTS: Apoorva Sharma, Ritwika, Preeti Rana, Aarti Bala

GUIDE NAME: Dr. S.R.N. Reddy

ABSTRACT

An ODAR is a voice controlled ground robot, having 2 dc motors and a frivol wheel, which is driven according to the 4 basic commands(forward, backward, right & left) given verbally As it is driven by the voice commands given by the user, user would verbally tell the bot to move in a certain direction and it would follow accordingly. It can detect obstacle using the Infrared sensors and avert them without human intervention. It can also detect pits and edges in its line of motion and overrides the present command and wait for the next command.

Keywords: Robot, Voice control, motion

WATER LEVEL METER

Name of Students: Vaibhavi Shukla, Palak Chadha, Yosha Porwal, Prachi
Kabtiyal, Kaysang Angmo

Guide Name: Dr. S.R.N. Reddy

ABSTRACT

The project “Live Water Level indicator” aims at designing and developing a smart device to keep a track of the water level of a tank at any point of time. It will give run-time water level of the tank and ring an alarm to alert the concerned authority when the water level reaches the minimum value.

Ultra sonic sensor is used to determine the depth of the tank and eventually the data is sent to the Android App connected. Wi-Fi is used in order to send the data to an online database.

Codes for interfacing sensors with Raspberry pi are written in Python and MySQL database queries are also included in the codes.

Lastly, the project includes an Android mobile application that retrieves data from the database and displays run-time values of the water level of the tank. The app rings to notify when the water level reached a specific minimum value.

Keywords: Ultrasonic, Water level, MySQL, Database

WITTY CEASER - THE SMART WASTE MANAGEMENT SYSTEM

Name of Students: Charu Bansal (01201012013), Diksha (04601012013), Himani Garg (02601012013), Ishita Pandey (02001012013), Megha Agarwal (06401012013)

Guide Name: Dr. S.R.N Reddy

ABSTRACT

'Witty Ceaser' aims to deal with the common problems of waste management in our nation. It allows one to dispose garbage in a hands-free manner. Thereby, encouraging one to not litter around the bin. Moreover, an optimized truck-route not only helps in saving all the precious fuel but also ensures that waste collection is conducted in well-timed manner. Deployment of degradable-trash detection mechanism will improve the waste segregation phase that is conducted after the disposal. Thus, the project lends a helping hand in our own "swachh bharat abhiyan"

Solution:

- Automated lid opening mechanism for a hands-free experience.
- An optimized truck-route that saves fuel and time
- Identifying degradable waste from the non-degradable ones making the process of segregation easier