

TEQIP III funded UG projects-2014 -2018 batch

B.M.S.COLLEGE OF ENGINEERING, BENGALURU-560 019

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME -III [Sub Comp 1.3]

THE FOLLOWING STUDENT BATCHES HAVE BEEN SELECTED FOR THE AWARD OF FISCAL INCENTIVE FOR THE ACADEMIC YEAR 2017-18 BASED ON RECOMMENDATION OF THE EXPERTS

DEPARTMENT: TELECOMMUNICATION ENGINEERING

Sl. No	Name of the students in the group	UG/PG	Project names	Name of the guide	Amount approved for award of fiscal incentive (Rs)
1	Ankitha B K	UG	Smart Auto-Detection Vehicle System	Sri.Manjunath P S	8200.00
	Chandana E				
	Rashmi K				
	Suma K				
2	Ajith G	UG	UAV aided Irrigation using Object Detection through wireless communication technology	Dr.C Gururaj	14000.00
	Narasimha Bharadwaj C				
	Naveen Kumar T S				
	Sriharsha Nag T S				
3	Kiran V Parvatekar	UG	Envidron-A Drone That Purifies Air	Smt.Ambika K	12300.00
	Shebin M Zacharia				
	Shreya V Sheelvant				
	Tanya Nanaiah				
4	Harshini V C	UG	Ignition Interlock System	Dr.Rajeshwari Hegde	14700.00
	Harshita B				
	Nikhil Srikar				
5	Lavanya K N	UG	Vision Interfaced War Field Robot with Wireless Video Transmission	Dr.C Gururaj	8200.00
	Nischitha B R				
	Ramya Shree D				
	T Asha				
6	Divya Prakash	UG	A Threshold Based Reliable Fall Detection Algorithm Sensor Using Tri Axial Accelerometer	Dr.Prasanna Kumar	10000.00
	Harshita Radesh				
	Shruthi Janardhan				
7	Tejashwini G	UG	Voice Controlled Spy Robot	Sri.Shreenivas B	5000.00
	Chaitra S				
	Yuvashree K				
	Ranjita C V				
8	C B Manikantha	UG	Drive Cycle Analysis for Indian Roads	Dr.Rajeshwari Hegde	10000.00
	Sushanth S				
	Raghu P				

The aforesaid students are here by required to submit a copy of their project report to the TEQIP office along with the details of expenditure incurred towards the project including original bills (attested by the concern guide) of the same at the earliest.

NODAL OFFICER - ACADEMIC

VICE PRINCIPAL & TEQIP CO-ORDINATOR

Ignition Interlock System

By

*Harshini V C (1BM14TE015), Harshita B (1BM14TE016),
Nikhil Srikar K A (1BM14TE029)*

Guide: Dr Rajeshwari M. Hegde , Associate Professor & Head, Department of
Telecommunication Engineering,

Amount Received : Rs 14,700/-

Summary: In many countries, one of the primary factors for automobile related fatalities is driving under the influence of alcohol. The highest fatal accidents are due to drunken driving. There is a need to explore and implement new technology that would help reduce drunk driving accidents and crashes. This paper focuses on the design and development of a low cost Ignition Interlock System. The device is installed in a vehicle and is connected to the ignition switch of the vehicle through an electromagnetic relay. The system consists of an alcohol sensor that detects the alcohol concentration in the breath sample, GSM and GPS modules which give the exact location of the vehicle. The device measures the alcohol in a driver's body and if the alcohol content exceeds a pre-programmed level, the device locks the ignition system of the vehicle temporarily. The implementation of Ignition Interlock System reduces the consequences of drunk driving, recidivism and saves lives. Therefore, enforcement of the Ignition Interlock System for vehicles would reduce the number of deaths due to drunk driving to a large extent and bring down the number of DWI cases.

Paper submitted:

Nikhil Srikar, Harshini V C, Harshitha B, "Low Cost Breath Analyzed Ignition Interlock System", IEEE 4th International Conference for Convergence in Technology (I2CT 2018) sponsored by IEEE Bangalore Section and Mangalore Sub section , October 2018 (Accepted)

CAN Infrastructure for Automotive Applications

By

Sushanth S (1BM14TE059)

Raghu P (1BM14TE036) and C B Manikanta (1BM14TE010)

Guides: Dr Rajeshwari M. Hegde , Associate Professor & Head, Department of Telecommunication Engineering, Dr B S Nagabhushana, Professor, Department of Electronics and Communication Engineering, BMS College of Engineering

Amount Received: Rs 10,000/-

The older generation cars used analogue interface for connecting different ECUs (Engine Control Unit) to monitor parameters like speed, throttle position and engine temperature. The development of the CAN bus protocol resulted in the reduction of wiring harness which was one of the main concerns of the analogue interface. The fault tolerance and error handling capability of CAN is used in suspension systems, ABS, air conditioning, airbags, central locking systems and gear control systems with high transmission speed. Our focus is to develop a custom CAN board that can be used for automotive applications. This board can be programmed to perform various applications related to the automotive industry. Embedded system applications using CAN bus communication model are highly efficient. The CAN board built by us provides a hardware interface that is simple and has a highly abstracted communication protocol. This is due to the fact that the board has all the CAN related functions and abstraction integrated into it. This board eases the development of CAN bus based embedded system applications. It can also kindle the development of an industry that is completely built based on automotive applications. An engineer can readily use this board for embedded system development without having complete knowledge about CAN controllers, CAN transceivers and CAN protocol.

Paper submitted:

Sushanth S, Raghu P, C B Manikanta, Rajeshwari Hegde, "CAN Infrastructure for Automotive Applications", IEEE sponsored 2nd International Conference on Green Computing and Internet of Things, August 2018, (Accepted)

Fall Detection System using Tri- Axial Accelerometer

By

*Harshita Radesh Kumar (IBM14TE017)
Shruthi Janardhan (IBM14TE051) and Divya Prakash(IBM14TE013)*

Guides: Dr Prasanna Kumar MK, Assistant Professor, Department of
Telecommunication Engineering, BMS College of Engineering

Fall detection system is an important part of public healthcare domain. It is a device that is used to detect a fall. Life expectancy is by far a major concern of people. Falls are noticeably the major cause of injury and death among the elderly thereby disturbing their ability to routinely function due to the decline of their physical fitness. Fall detection is a major challenge in the healthcare for the aged and hence timely and dependable action after a fall is necessary to lessen the negative impact of falls. This system is also effective in various other situations which include detecting the fall of a worker at a construction site or of a trekker who might fall from tripping on the surface of a hill top or a rocky terrain. Our project aims at building a cost-effective, reliable and easy to use operative surveillance system to prevent the falls or at least quickly acknowledge the major accidents due to fall. The proposed fall detection sensor is a wearable device that monitors body motion with the help of sensors like accelerometer to measure the users' instantaneous change in velocity or acceleration and compares it against predetermined thresholds in order to detect falls. This model includes hardware components like ESP8266- the microprocessor, Using the login credentials set beforehand, we can access the values on MQTT client and get alerts as to when the fall has been detected as well as location of the fall. The device uses minimal hardware along with an algorithm which ensures less power requirements and easy to use features.

Amount Received: Rs 10,000/-

Paper submitted: Harshita Radesh Kumar, Shruthi Janardhan and Divya Prakash, Prasanna Kumar M K "Fall Detection System using Tri- Axial Accelerometer" in 3rd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT-2018) at SVCE, Bangalore, May 2018

UAV aided Irrigation using Object Detection through Wireless Communication Technology

by

*Ajith G(1BM14TE004), Naveen Kumar T S(1BM14TE025), Narasimha
Bharadwaj C(1BM14TE024), Sriharsha Nag T S(1BM14TE053)*

Guide: Dr C. Gururaj, Assistant Professor, Department of Telecommunication
Engineering, BMS College of Engineering

Amount Received: Rs 14,000/-

At a time when all sectors are diversifying the range of applications of unmanned aerial vehicles, one of the largest communities in India that is yet to reap the benefits of this advanced technology is that of the farmers. Survey of vast swathes of agricultural land to determine how well they are irrigated is often a laborious process. This procedure can be rendered simple using UAVs. The aim of this work is to assess whether a parcel of farmland is irrigated, and to what extent. The use of UAVs will enable survey of large tracts to be surveyed in a matter of days. Moreover, use of UAVs easily offsets the disadvantages of accessing real-time data from satellites, which normally takes months to obtain. Among the tools that will be used for this purpose include remote sensing technology, image processing software and bluetooth.

Paper Published:

*Ajith G, Naveen Kumar T.S., Narasimha Bharadwaj C, Sriharsha Nag T.S., C.Gururaj, "UAV Aided Irrigation using Object Detection through Wireless Communication Technology", **IEEE International Conference on Trends in Electronics and Informatics (ICOEI 2018)**, ISBN: 978-1-5386-3570-4, 11th -12th May 2018, pp 715-720, SCAD College of Engineering and Technology, Tirunelveli, Tamilnadu*

Vision Interfaced War Field Robot With Wireless Video Transmission

by

*Lavanya K.N.(1BM14TE022), Ramyashree D(1BM14TE040), Nischitha
B.R.(1BM14TE028), T.Asha (1BM14TE060)*

Guide: Dr C. Gururaj, Assistant Professor, Department of Telecommunication
Engineering, BMS College of Engineering

Amount Received: Rs 8,200/-

The aim of the paper is to design and implement a real time surveillance system which is a substitute for the humans in defence sector. The vision based interfacing by giving gestures to control robot which overcomes the speech recognition drawbacks. The implementation of project is done by giving the gestures for controlling of robot through wireless communication and sensors are used for detecting the fire accidents and explosives and extinguishing of the fire meanwhile providing the video transmission of the ongoing scenario at the field. This project gives a jolt for the humans at the border security before invading into the unknown territory reducing loss of life.

Paper Published:

*Lavanya K.N., Ramyashree D, Nischitha B.R., T.Asha, C.Gururaj,
"Vision Interfaced Warfield Robot with Wireless Video
Transmission", IEEE International Conference on Trends in
Electronics and Informatics (ICOEI 2018), ISBN: 978-1-5386-3570-
4, 11th -12th May 2018, pp 715-720, SCAD College of Engineering
and Technology, Tirunelveli, Tamilnadu*

Voice controlled (Automated) Spy Robot

by

*Ranjita C V.(1BM14TE041), Tejashwini G(1BM14TE062), Yuvashree K
(1BM14TE068), Chaitra S (1BM15TE402)*

**Guide: Shreenivas B, Assistant Professor, Department of Telecommunication
Engineering, BMS College of Engineering**

Amount Received: Rs 5,000/-

In this project , we designed and implemented the latest robot which can be controlled by voice commands and remote operation using android application. This system can be accomplished with the help of software application running on android mobiles or tablets. the voice commands are given through the voice app which converts the voice command into text command. To control the robot through the application , we have developed an android application for remote operation . these commands are detected by robot vehicle in sequence to shift left , right , forward, reverse and stop, based on the command received , the robot motions can be controlled. it is integrated with camera which can wirelessly transmit the signal , this feature can be used for surveillance, to monitor the area which are not easily accessible. In addition to these thing it has pick and place arm and obstacle detection feature.

EnviDron – A drone that purifies air

By

Kiran V Parvatekar (1BM14TE020), Shebin M Zacharia(1BM14TE046),

Shreya V Sheelvant (1BM14TE048),Tanya Nanaiah(1BM14TE061)

Guide: Ambika K, Assistant Professor, Department of Telecommunication
Engineering, BMS College of Engineering

Amount Received: Rs 12,300/-

Summary: Our world has been polluted in many ways over the years and the most dangerous one is air pollution which causes depletion of the ozone layer leading to greenhouse effect and global warming. The developed product is a drone that aims at purifying air by first monitoring the amount of toxins in it and then filtering them out, thereby releasing relatively purer air. A single drone purifies a very small percentage of air. Therefore, to bring about a difference in the air conditions, they need to be used in swarm robotics.

Smart Auto-Detection Vehicle System

Ankitha B K (1BM14TE007) , Chandana E (1BM14TE011)

Rashmi K (1BM15TE042), Suma K (1BM15TE054)

Guide: Dr Manjunath P S, Assistant Professor, Department of Telecommunication Engineering, BMS College of Engineering

Amount Received: Rs 8200/-

Summary: In this project, we are going to present the concept of smart automation of the vehicle. The device is designed to be mounted inside the vehicle. This project aims to provide few smart features to the car using which can overcome many problems like over emission of the vehicle, death occurring due to no proper treatment of the victim during accident, preventing overheating of the engine or burning of the engine and maintaining the rules of critical zones it not only prevents all these ill- effects but also maintains the rules and regulation of traffic in order to achieve this we have made use of many modules like WIFI, GPS and Zigbee. Accelerometer .using the app the information related to the features are sent to the respected person. With accelerometer we detect the action of accident using its 3 axis. Zigbee module does the wireless communication method pass on the information from one controller to another. LCD is used to display the results with the app to send the messages. Advanced sensors like co2 and no2 over emission is detected and with IR sensors we the special zones is detected and with the motor and relay the speed is reduced this and with temperature sensor we detect the overheating of the engine and alert by using the buzzer.