

SHREE VENKATESHWARA HITECH ENGINEERING COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ECEBYTE - 21 Technical Magazine

I am delighted to introduce the ECE BYTE, our half-yearly technical magazine. This publication serves as a platform to showcase the hidden writing talents of students, helping them refine their skills and contribute to their overall personality development. I extend my heartfelt congratulations to all the contributors for their dedication and effort in bringing this magazine to life.



Thiru.K.C.KarupananMLA

Secretary/SVHEC

SVHEC has made impressive strides, accomplishing notable milestones in a short period. It brings me great joy to see the students and faculty of the ECE department introducing ECE BYTE, the department's technical magazine. This publication serves as a platform to highlight the literary and technical talents of both students and faculty while nurturing leadership skills and intellectual growth.



Rtn.P.Venkatachalam,MPHF

Chairman/SVHEC

I extend my heartfelt congratulations to the Department of ECE and the ECE BYTE team for successfully publishing the first issue of this prestigious quarterly technical magazine. I am confident that this magazine will serve as a valuable platform for students and faculty to enhance their technical knowledge and showcase their literary talents. A special appreciation goes to the editorial board for their dedication and hard work in bringing this publication to life.



Dr.P.Thangavel ME MBA PhD

Principal/SVHEC

Dr.R.S.Kamalakannan

Head of the Department

Electronics and Communication Engineering



I appreciate to the faculty members and students for the magazine committee of ECEBYTE21 to successful completion of this magazine

As the Head of the Electronics and Communication Engineering department, it's my pleasure to see our students showcase their talents and achievements in this magazine. This publication highlights the innovative projects, research work, and extracurricular activities of our students, demonstrating their dedication and passion for the field.

Our department is committed to providing a nurturing environment that fosters academic excellence, creativity, and innovation. We strive to equip our students with the knowledge, skills, and values necessary to succeed in their careers.

I commend the editorial team for their hard work and initiative in bringing out this ECEBYTE magazine. It's a testament to the department's spirit and enthusiasm. I hope this publication inspires and motivates our students to pursue their goals with dedication and perseverance.

I wish the magazine all the best and look forward to seeing future editions. I believe it will become a valuable platform for our students to express themselves, share their ideas, and showcase their talents.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ABOUT ELECTRONICS AND COMMUNICATION DEPARTMENT

The Electronics and Communication Engineering Department was established in the year 2008. The department offers Undergraduate (BE-ECE), & Post Graduate (ME-Applied Electronics) programmes, that provide students with the knowledge and Tools they need To succeed in the ECE. After the completion of the course, lots of opportunities are there in various fields of Telecommunication Networks and Embedded System, Signal & Image Processing, VLSI Design etc. To expose the students To the world of technology and produce graduates fully equipped To achieve the highest personal and professional standards for Industry application and in higher studies. The Department has built an excellent reputation for its graduates in terms of placements

VISION

▶ Produce competent Electronics and Communication Engineering professionals with scientific temper, values, ethics, team spirit and capabilities To face new challenges

MISSION

► Provide conducing learning environment with state-of-the-art infrastructure facilities, laboratories and teaching learning systems.

► Produce skilled Electronics and/or Communication Engineers with skills Towards employability, leadership, communication skills with social responsibilities and ethical values

► Inculcate Professional skills to function as proficient engineers and designers capable of building sustainable equipment/systems and infrastructure for the society.

► Promote research and development activities in the rapidly changing technologies related to Electronics and Communication Engineering and allied domains.

Program Educational Objectives (PEOs)

1. Successful career - To enable graduates have a successful career in academia or industries associated with Electronics and Communication Engineering, or as entrepreneurs

2. Foundational concepts - To provide students with strong foundational concepts and also advanced techniques and Tools in order To enable them To build solutions or

systems of varying complexity.

3. Analyze Methodology - To prepare students To critically analyze existing literature in an area of specialization and ethically develop innovative and research oriented methodologies To solve the problems identified.

Program Outcomes (POs)

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization To the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information To provide valid conclusions.

5. Modern Tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT Tools including prediction and modeling To complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge To assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant To the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit To professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able To comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these To one's own work, as a member and leader in a team, To manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability To engage in independent and life-long learning in the broadest context of technological change.

Program Specific Program Outcomes (PSOs)

1. Foundational concepts: To analyze, design and develop solutions by applying foundational concepts of electronics and communication engineering.

2. Design and Develop: To apply design principles and best practices for developing quality products for scientific and business applications

3. Innovation and solutions: To adapt To emerging Information and Communication Technologies (ICT) To innovate ideas and solutions To existing/novel problems.

Editor-in-Chief

Dr.R.S.Kamalakannan HOD/ECE

Staffs:

Ms.T.Karthi, AP/ECE Students:

Chinnathai U – IV ECE Gokul Prasath K – IV ECE Kiruthiga T- III ECE Nathiya P – III ECE Uma Abirami A – II ECE

Vasanth N – II ECE

AUTOMATIC RAILWAY GATE CONTROLLER SYSTEM

Automatic Railway Gate Control System is a simple but very useful project, which help is automatically opening and closing the railway gate upon detecting arrival or departure of the train. In general, Railway gates are opened or closed manually by a gate keeper. The information about arrival of train for opening or closing of door is received from nearby station. But some railway crossings are totally unmanned and many railway accidents occur at these unmanned level crossings. To avoid the human intervention at level crossings completely, we need to automate the process of railway gate control.



GOKUL K

II ECE

CIRCUIT BREAKER

A circuit breaker is an electrical safety device designed to protect an electrical circuit from damage caused by current in excess of that which the equipment can safely carry (overcurrent). Its basic function is to interrupt current flow to protect equipment and to prevent fire. Unlike a fuse, which operates once and then must be replaced, a circuit breaker can be reset (either manually or automatically) to resume normal operation.Circuit breakers are commonly installed in distribution boards. Apart from its safety purpose, a circuit breaker is also often used as a main switch to manually disconnect ("rack out") and connect ("rack in") electrical power to a whole electrical sub-network.Circuit breakers are made in varying current ratings, from devices that protect low-current circuits or individual household appliances, to switchgear designed to protect high-voltage circuits feeding an entire city. Any device which protects against excessive current by automatically removing power from a faulty system, such as a circuit breaker or fuse, can be referred to as an *over-current protection device* (*OCPD*).



VASANTH N

II ECE

LOW-COST LPG LEAKAGE DETECTOR

The growing popularity of LPG as an economical and environmentally friendly fuel means that inexpensive anddependable gas leak detection devices are needed to improvehome and workplace safety. This work describes the development and application of a low-cost LPG gas leakdetection system that balances affordability, accuracy, and sensitivity. A microprocessor is coupled with a gas sensor that has a high sensitivity to LPG in the suggested detector toprocess data in real time. When the system detects LPGconcentrations over safe thresholds, it is intended to sound anaudio and visual alarm to alert occupants in a timely manner. A greater variety of consumers can use the detector sinceeasily available materials and components are used to reduce expenses. The efficiency of the detector in quickly detecting gasleaks is demonstrated by the results of studies that simulatedifferent scenarios. Furthermore. leakage the device's low cost makes it appropriate for broad deployment, enhancing safetystandards in settings where LPG is often used



RAHUL M II ECE

BI DIRECTIONAL VISITOR COUNTERS USING 8051 MICROCONTROLLER

Micro controller or Microprocessor is the most flexible device in the world. It is once a creature of sciencefiction is today a reality. In real sense, it is a device, which allows human beings to build new machines withtheir intelligence .Visitor counting is used to measure the traffic at certain places while entering and exiting offices, malls, sports venues, etc. Counting the visitors is a tough job to do by a individual which accumulates alot of crowd because it takes time for a individual to count on the crowd it is not limited to the entry/exit point of a place like company malls etc but it also provides the information of the flow of volume of people from oneplace to the other before they were hiring individuals to keep an eye on the count but as it is a time takingprocess and possibilities of making error is high .so, its better for machinery to do the job. As human collected data comes out with a lot of expense now a days.



MANGAIYARKARASI E

II ECE

STUDENTS PROJECTS

Title: Real Time Water Quality Monitoring Using Iot

Water is one of the essential parts of life. Water quality Monitoring is one of the important thing in this polluted world. Water should be clean and purity. In order to ensure the quality of water and monitor in real time. In this Project we present a design and development of a low cost system for real time monitoring of the water quality in IOT(internet of things). The system consist of several sensors is used to measuring physical and chemical parameters of the water. The parameters such as temperature, PH, CO2 sensor, Gas sensor of the water can be measured. The measured values from the sensors can be processed by the core controller. The Arduino model can be used as a core controller. The sensor data can be viewed on internet using WI-FI system. The values measured can be viewed in the cloud by using the software called Thinkspeak. If there is any change in values to reduce that we are adding chemicals by using motor.



Brindha S

Nithya M

Pramila J

Venkidusamy P

Title: Arduino Based Smart Electronic Voting Machine

Election is a key issue when it comes to deciding who the next leader or representatives are going to be through democratic means. The existing prevalent processes of voting in these elections are slow and strenuous and the outcome is often inaccurate. Thus, people lose faith in the electoral process and consequently in their leaders. This work developed an electronic voting system that aids the process of choosing such leaders in a manner that is fast, free and fair. The device was developed by interfacing fingerprint sensor, a keypad, GSM module, real time clock, an LCD and a personal computer to an Arduino Mega. Algorithm was developed and coded using the Arduino IDE. The unit stores voter data, which includes biometric information, during registration and. The device collates result of voting including time of each vote and can deduce the winner based on majority votes. The basic idea of this project is to create an electronic voting machine that will help to eradicate defrauding of the manual voting systems and prior versions of electronic voting. The thesis looks into and proposes a system that includes multiple layers of verifications to ensure the reliability of the device. With the inclusion of biometric fingerprint sensor, each voter is entered into the system only after being recognized and checked with the given database of enlisted voters.



Chinnathai U Gokul Prasath K Monisha M Sindhu M

Title: Real Time Detection Of Speed Breaker And Warning System

With increasing road accidents due to improper and non-standard speed breakers, it is the need of the hour to address this issue appropriately, and due to this although speed breakers are built for safety, they are posing to be more of a danger. This is mainly due to building illegal speed breakers and not maintaining existing ones. The existing solutions are largely dependent on the user or the surrounding, both of which do not provide immediate accuracy and dependability. This Proposed system presents a self-improving system with minimal user involvement and aims to cover nearly all the drawbacks of the current solutions. It suggests speed breaker detection by measuring the difference in the height between the road level and the vehicle. In this approach, GPS coordinates are stored in an online database system that is available to the public through a portal. When the vehicle is at a predefined distance away from the speed breaker, the user is notified resulting in improved accuracy with every.



Karthik G

Kavina K

Sugalakshmi M

Suryabharathi G

Title: Smart Water Leakage And Theft Detection Using IOT

Water is the most precious and valuable because it's a basic need of all the human beings but,now a days water supply department are facing problem in real time operation this is because less amount of water in resources due to less rain fall. With increase in Population,urbon residential areas have increased because of this reasons water has become a crucial problem which affect the problem of water distribution, interrupted water supply ,water conservation, water consumption and also the water quality so, to overcome water supply related problem and make system efficient there is need of proper monitoring and controlling system. In this project ,we are focusing on continuous and real time monitoring of water supply in IOT platform. Water supply with continuous monitoring makes distribution line. Internet of things is nothing but the network of physical object embedded with electronics, sensors, software, and network connectivity. Monitoring can be done from anywhere as central office. Using Adafruit as free server data continuously pushed on cloud so we can see data in real time operation. Using different sensors with controller and raspberry pi as Mini computer can monitor data and also control operation from cloud with efficient client server communication.



- Harisurendharan C
 - Jaganathan S
 - Maheshwari K
 - Saranya T

Title: Automatic Gas Booking with Leakage Detection using IOT

LPG is widely used for cooking in many countries for economic reasons, for convenience or because it is the preferred fuel source. This paper focuses on the application of the IoT which is used for measuring and displaying the gasoline content present in household LPG cylinder and this is helpful in automatic booking of new LPG cylinder and also detect the gas leakage. Usually the capacity of LPG in Cylinder is not determined, so we are going to display the level of LPG. The level of LPG is measured using load sensor (SEN-10245). The output of the sensor is connected with Arduino R3.By use of GSM Module, the information is sent to user by SMS (short messaging service) and also automatic booking is done by dialing the registered gas booking number. Then the gas leakage is detected by gas sensor (MQ-6). By using this, we can detect thecurrent LPG level and it is continuously displayed on the LCD. We can know the validity of LPG usage from the date of initialization. By use of IOT the user is alerted by giving the message to their mobile phone when the LPG level is critically low(below 20%).Automatic booking of new LPG by auto dialing of gas booking number and by this we prevent prebooking and late booking. Then by detecting the gas leakage we can prevent the LPG gas burst accidents in the home.

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Mohana Priya M

Mukil S D

Sudharsanan V

Kokila J

Title: Vehicle to Vehicle Communication System on Reconfigurable Hardware

This project proposes an Intelligent Transport System (ITS) that provides an effective Vehicle to Vehicle communication mechanism using Zigbee. Especially in Vehicle to vehicle communication Zigbee proves a vital role and it is the key protocol for wireless sensor network applications. In this project suggestions are proposed for periodic monitoring of vehicular movements, enhancing road safety and handling traffic congestion are dealt with. Since these two above mentioned issues are the core aspects in transportation industry and an important problem which the world faces today, this project deals with effective inter communication of vehicles using Zigbee protocol. A control framework adopting on-board radar sensor and vehicle-to-vehicle (V2V) communication has been developed to fulfill automated vehicle following in the longitudinal and lateral directions. First, a linear feedforward and feedback controller constrained by the string stability is designed to follow the velocity of the preceding vehicle and ensure a safe inter-vehicle distance.



Priyanka P

Ramya T

Roobika M

Vinothini V

Title: Intelligent Vechile Block Box using IOT

The main purpose of this project is to provide vehicle safety and a solution that automatically alert the driver to be cautious. In this project we continuously monitor the vehicle performance using sensors and the behavior of driver with the use of IOT Technology. When the accident occurs, many people lose their lives because the medical assistance is delayed. Using this black box system this system is designed to detect the basic reason for the accident. The Vehicle black box receives the information from various sensors like the breath analyzer, acceleration, vibrating, and eye blinking sensor .When the driver alcohol consumption reaches maximum limit, the messages are sent to emergency contacts. If the accident occurs, by using GSM and GPS the vehicle location is traced and the information is sent to local hospital and police. With the IOT Technology, this location is always traced in the cloud platform service.



Harish D K Keerthana K Nivetha S Dinesh Kumar D

Title: Automatic Yarn Cut Detection in power Loom using IOT

The objective of this project is to achieve the High-end loom features in simple power looms with the extremely low cost. The biggest downside which a textile trade is facing is that once the thread is cut the material getsbroken. This results in the production of unnecessary cloth. The designedsystem is meant in such a simple way that it stops the device and avoidsdamage. From this project we are monitoring all the loom data. The scope of theproject is automatically monitoring the looms from the remote side. Because weare not able to supervise every loom. This uses arduino as the primary principalunit. Arduino uses to signify automatic yarn cut detection in a loom. Usingarduino, this device mainly aims to detect the yarn cut in a loom to intimate higher official. Once the yarn cuts, the fault is detected, the supply offimmediately and then the fault is corrected for manually.



Dinesh V Gomathi M Saravanan N T

Title: Waste Management Improvement in Cities using IOT

Garbage collection is one of the most critical problems faced by Municipal Corporation. While implementing the waste management in cities the biggest challenge is the management of waste in cost optimal way with high performance. The current process of collecting the waste, separating it and transporting the containers everyday which is a complicated process. Thus, an efficient waste management for the waste material is essential in ensuring a clean and green surrounding environment.

In the present day scenario, many times we see that the garbage bins or dust bin are placed at public places is the cities are overflowing due to increase in the waste every day. It creates unhyginenic condition for the people and creates bad smell around the surrounding this leads in spreading some dealydisease & humanillness, to design "IoT based waste management for smart cities" In this proposed system there are multiple dustbins located through out the city or the campus, these dustbin are provided with low cost embedded device which helps in tracting the level of the garbage bins and an unique ID will be provide for every dustbin in the city so that it is easy to identify which garbage bin is full. When the level reaserches the threshold limit, the device will transmit the level along with unique ID provided. this details can be accessed by the concern authorities from the place with the help of internet and an immediate action can be made to clean the dustbin.

> Diwakar P Matheswaran V Prabhakaran KK

Title: Water Filter Automation System using Fuzzy Logic Controller

Nowadays, most of the water filtering system is still operated manually where there is no automation in the backwash function and no activity to monitor water quality before and after filtering. The backwash function is a way to clean the filter media with clean water by changing the direction of the water flow, intending to clean the filter media from the dirt after the filtration process. Typically, the turbidity level of water must be below NTU 25 with pH value between 6-8. In this research, we develop a system to monitor turbidity levels on water filter tank and to perform automatic backwashing function. We apply Fuzzy Logic Controller to control the backwash process if the filter media is very dirty or very saturated, which is indicated by the turbidity level of water in the filter output exceeds the standard NTU limit. Besides, Fuzzy Logic Controller is also used to control water pH level and automatically close the inlet if the pH level is exceeding the standard value.



Devi M Kavinaya D Kavitha R Satheeshwari S

Title: Face Recognition and Automatic Driving License Generator

The objective of this project is to design the object sensing candidate driving skill. This project proposes license eligibility measurement to avoid invigilator and corruption in driving license provision. The prototype model consist of IR sensor, ultrasonic sensor and face recognition technology. At initial state the person who undergoes the test drive, his/her face has been stored in the database. The sensors will be placed on the smart test path to identify the driver's skill level. If they complete with the best score then the system automatically generates the license number and send that to registered people mobile number. The whole operation has been carried out within the time limited boundary the time slots assigned for different segments that involved in skill set analysis, before analyzing test driving performance he/she face have been recognized. IR sensors are implemented in straight path that will be used to measured vehicle speed level. Ultrasonic sensor have been placed in the circular path where, it measured the slope of vehicle whether it is inner circle or outer circle. Based on the above performance the machine can predict the eligibility criteria. At the same time it captures the driver image and sends this to authorized people mail address.



Gomathi S

Govarthini S

Gowtham S

Prize Awarded

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S.No	Name of the Student	Name of the event	Organized by	Date
1	Chinnathai U	Project Presentation	Erode Sengunthar	07.01.2021
			Engineering College	
2	Monisha M	Project Presentation	Erode Sengunthar	07.01.2021
			Engineering College	
3 Gokul	ColulDreasth V	Project Presentation	Erode Sengunthar	07.01.2021
	Gokulprasatli K		Engineering College	
4	Sindhu M	Project Presentation	Erode Sengunthar	07.01.2021
			Engineering College	
5	Gomathi S	Project Presentation	Erode Sengunthar	20.01.2021
5		rioject riesemation	Engineering College	20.01.2021
6	Coverthini S	Project Presentation	Erode Sengunthar	20.01.2021
0	Govartinin S	Floject Flesentation	Engineering College	20.01.2021
7	Gowtham S	Project Presentation	Erode Sengunthar	20.01.2021
			Engineering College	