

2018

EMBEDDED KITS PROJECT LIST 2018 -2019



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Here is the list of project titles 2018 and 2019.



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- MATLAB / VLSI
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- AND COMPLETE MECHANICAL FABRICATIONS
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Here we provided a **EMBEDDED KITS 2018 project list** with abstracts. we do train a student from basic level of controllers which includes basic Classes, projects implementation, final project demo and final code explanations. If you have questions regarding these projects feel free to contact us. You may also ask for abstract of a project idea that you have or want to work on. The **own projects idea** for diploma and Engineering students can also encouraged here.

An embedded system is a computer or processor based system that has been designed for a specific purpose. The system gains its name from the fact that the software is embedded into it for a particular application or other computer that can run a variety of program



s and fulfil a whole host of tasks. The item using an embedded system is designed for a specific task and has its software preloaded, although updates may be undertaken from time to time.

IEEE EMBEDDED KIT PROJECT LIST 2018 AND 2019

	2018 - 19 IEEE TRANSCATIONS ON EMBEDDED KITS/MICROCONTROLLERS/ARM/PIC/AVR/ARDUINO
TIEK001	<p>TITLE- HIGH PROTECTION VOICE IDENTIFICATION BASED BANK LOCKER SECURITY SYSTEM WITH LIVE VIDEO TRANSMISSION</p> <p>ABSTRACT - In today's scenario safer bank locker is required, As the technology is improved in the field of electronics. They have entered the fields like industry, medicine, telecommunication and also home automation. This paper introduces an intelligent bank locker system which is developed using microcontroller with the wireless communication technology, speech recognition techniques and GSM network technology. This system is typically employed to secure bank lock and The function of this voice recognition security</p>

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	<p>system is to have a system that will only unlock upon recognizing a voice password spoken by the administrator or password holder. Thus by using voice passwords for security we can prevent the unauthorized access to the system.</p>
TIEK002	<p>TITLE – WIRELESS SENSOR NETWORKS – DENSITY BASED TRAFFIC CONTROLLER</p> <p>ABSTRACT – In the present scenario vehicular travel is increasing all over the world, especially in large urban areas. Therefore for simulating and optimizing traffic control to better accommodate this increasing demand is arises. In this paper we studied the optimization of traffic light controller in a City using wireless sensor. We have proposed a traffic light controller and simulator that allow us to study different situation of traffic density in City. Using wireless sensor we can easily senses the density of traffic because the general architecture of wireless sensor network is an infrastructure less communication network. Traffic research has the goal to optimize traffic flow of people and goods. As the number of road users constantly increases, and resources provided by current infrastructures are limited, intelligent control of traffic will become a very important issue in the future. However, some limitations to the usage of intelligent traffic control exist. Avoiding traffic jams for example is thought to be beneficial to both environment and economy, but improved traffic-flow may also lead to an increase in demand. There are several models for traffic simulation. In our research we focus on optimization of traffic light controller in a city using wireless sensor and camera and developed visual monitoring.</p>
TIEK003	<p>TITLE – EFFICIENT POWER GENERATION BASED ON SOLAR TRACKING SYSTEM WITH PANEL CLEANING MECHANISM AND MULTIPURPOSE OPTIMIZATION</p> <p>ABSTRACT – so many power generator available in our country to generate the power here we design a model which is generating a power from natural claimation. In our country the power problem is increasing day by day due to lake of rain water. To avoid the power problem in our country the hybrid power generator are used to generate power throughout the day and night.</p>
TIEK004	<p>TITLE – AUTOMATED GREEN HOUSE STATUS MONITORING AND CONTROL SYSTEM</p> <p>ABSTRACT - In agricultural country like India, greenhouses form an important aspect of agricultural and horticulture sectors. In greenhouses, plants are grown under favorable climatic conditions for its production and growth. Thus monitoring and control of greenhouse environment is necessary for production and management of greenhouses. This project is designed to monitor and control the indoor humidity and weather conditions affecting the plants using embedded system and Android mobile phone. The android phone is connected to a central server which then connects to microcontroller</p>

	and humidity sensor via serial communication. Thus the sensor records and manages the required weather conditions proved to be appropriate for plant growth
TIEK005	<p>TITLE – ALCOHOLIC BREATH ANALYSER AND TILT DETECTOR FOR VEHICLE SECURED IGNITION</p> <p>ABSTRACT - The road accidents are increasing at high rate now a day. Traffic authority also taking several measures to bring down the accidents. Immediate action will be taken if any violates the traffic rules. The drink and drive is one of the case because of which the road accidents may happen. Drinking is not an offense but drinking and driving is an offense. A drunken driver may not only cause harm to his life, he may take lives of others too. So this is one of the serious cases to be controlled. This project implements an automated system which checks for alcohol level of the driver and the engine will be turned ON only if the alcohol level is below some limit. Also the will check weather the driver is feeling sleepy by checking his head position by using tilt sensor. By this project we are doing the two way solution for the problem of road accident.</p>
TIEK006	<p>TITLE – DEVELOPMENT OF ELECTRONIC STICK FOR BLIND WITH PANIC BUTTON ALERT</p> <p>ABSTRACT – We have developed a new mobile phone-based safety support system for transmitting information of a wandering elderly person's location and the environmental sounds around that person. The system consists of a wearable sensor and a conventional desktop PC with Internet access acting as the server computer. The wearable sensor, which is attached behind the neck of the elderly person's shirt, is composed of GPS module. The wandering elderly person's location is identified within 100 m from the mobile phone company's antenna ID via the W-SIM. The caregiver sets the elderly person's movement area by specialized computer software. The GPS module sends the wandering elderly person's location to the server computer. The server computer informs automatically the caregiver by a message on the app installed on the android smart phone. The caregiver can monitor the sound and the map of the wandering person's location via Internet.</p>
TIEK007	<p>TITLE – DEVELOPMENT OF PATIENT MONITORING SYSTEM USING SMART PHONE</p> <p>ABSTRACT - Telemedicine is a rapidly developing application of clinic medicine where medical information is transferred through the phone or other networks for the purpose of consulting and performing remote medical procedures or examinations. Telemedicine can be applied to a greater extend in the field of cardiology where ECG serves as the major tool. This project elaborates the experience; a methodology adopted and highlights various design aspects to be considered for making</p>

	<p>telemedicine in patient monitoring system effective. In this method, the patient's vital signs like ECG, heart rate, breathing rate, temperature are captured and the values are continually displayed on the doctor's phone using ANDROID technology. It also enables the doctors to instantly send back their feedback to the nurse station</p>
TIEK008	<p>TITLE – DESIGN AND DEVELOPMENT OF ANDROID CONTROLLED SMALL UNIT UNMANNED VEHICLE FOR TODAY'S ARMY</p> <p>ABSTRACT - Nowadays robots play an important role in human beings day-to-day life. And Life is very important. Soldiers form the backbone for their country and they are very precious gem to their country. So soldier's life becomes more valuable. So here is a project which performs the functions of a soldier like firing, walking into the field. With the help of sensors and wireless camera the robots acts as a soldier and the commands are given to the robot through android app</p>
TIEK009	<p>TITLE – DEVELOPMENT OF DATA ACQUISITION ROBOT FOR TOXIC ENVIRONMENTAL MONITORING USING WSN – KROTO FINDER</p> <p>ABSTRACT - This project is mainly implemented for industrial applications. Mainly for detecting the damages inside the oil pipe that cannot be detected by human beings. Kroto is the Greek word meaning to crack. Inside the pipe, there is very heavy temperature, pressure and toxic gases. So we are implementing a robot that have a camera, temperature sensor, pressure sensor etc which is used to detect the crack and conditions inside the pipe. This data from all the high precision sensors will be transmitted using blue-tooth to android phone from the robot to the control station. The robot incorporates a wireless camera and the data from the cam is transmitted to the fronted Visual studio.</p>
TIEK010	<p>TITLE – WIRELESS COMMUNICATION BASED ADVANCED IRRIGATION VEHICLE OPERATED USING SMART PHONE - AGRIBOT</p> <p>ABSTRACT - This robotic vehicle is an agricultural machine of a considerable power and great soil clearing capacity. This multipurpose system gives an advance method to sow, plow, water and cut the crops with minimum man power and labor making it an efficient vehicle. The machine will cultivate the farm by considering particular rows and specific column at fixed distance depending on crop. Moreover the vehicle can be controlled through Bluetooth medium using a Android smart phone. The whole process calculation, processing, monitoring are designed with motors & sensor interfaced with microcontroller.</p>
TIEK011	<p>TITLE – A SELF- ADAPTIVE TRAFFIC LIGHT CONTROL SYSTEM BASED ON SPEED OF VEHICLES</p>

	<p>ABSTRACT – Intelligent transportation is a typical case of cyber-physical system (CPS). Due to the rapid increasing of the number of vehicles in city, problems caused by vehicles, like congestion and environment pollution, are becoming more and more serious. Traffic light control system is often used to control the vehicles passing for a solution of the congestion in the city. Present control systems used are normally assigned as to be static, i.e., traffic light signal changes in a static way. The aim of this paper is to propose a dynamical traffic light control system, i.e., change the traffic light signals in real time following the speed of vehicles. This system is an instance of V2I(Vehicle to Infrastructure) communication model, realizing data transmission between vehicles and traffic lights. Vehicles send speed messages to the traffic light when passing an intersection, then the traffic light analyzes the information and adjusts the signal time in real time. Each traffic light in each direction has a control strategy of itself without the orthogonal requirement. Therefore, the traffic light is a kind of cyber-physical system. This traffic light control system can maximize the number of vehicles passing intersection, and as a result, minimize the congestion and pollution. A traffic light control algorithm based on speed of vehicles and its simulation are presented. The safety and liveness of this control system are discussed too.</p>
TIEK012	<p>TITLE – AN EFFICIENT DATA INTEGRITY SCHEME FOR PREVENTING FALSIFICATION OF CAR BLACK BOX AND CRASH RECOVERY</p> <p>ABSTRACT – The main purpose of this paper is to develop a prototype of the Vehicle Black Box System VBBS that can be installed into any vehicle all over the world. This prototype can be designed with minimum number of circuits. The display unit will shows the results of the each sensor network by calculating the individual values from the sensors. The project deals with the accident avoidance and security providence for the both vehicle driver and vehicle. The VBBS can contribute to constructing safer vehicles, improving the treatment of crash victims, helping insurance companies with their vehicle crash investigations, and enhancing road status in order to decrease the death rate.</p>
TIEK013	<p>TITLE – AUTOMATED ACCIDENT ALERT MECHANISM WITH HIGHER END SAFETY PROTOCOL</p> <p>ABSTRACT – In automotive applications, vehicle immobilization is one of the important aspects in the area of security system. A variety of prior art anti-theft devices such as, steering wheel locks, steering column locks, burglar alarms, automotive hood locks, ignition locks, truck guards, park interface locks, and computer coded keys, particularly with rolling code keys, have reduced vehicle theft. There is a need for an integrated control system that monitors vehicle status conditions and the right authentication.</p>

TIEK014	<p>TITLE – AUTOMATED SYSTEM FOR METRO TRAIN</p> <p>ABSTRACT – The main aim of this paper is to make an automated place announcement system for Train, ticket issuing and Open/close of Rail-gate using voice IC and the radio frequency wireless card for tracking the station data and issue of tickets. The paper consists of microcontroller with the RF receiver and the voice recorder chip with speaker. The whole system is attached to the vehicle (BUS or Train). The encoded RFID tags are placed in the BUS stops or the railway stations. The microcontroller in the TRAIN is programmed in such a way that every station name saved in the voice chip which is having a unique code. So whenever the bus or train reaches the station, the reader in the bus or in the train receives the codes, which are transmitted from the tag and the microcontroller receives this code and checks in the look up table, saved in the chip. Whichever matches, the controller will send the command to the voice chip to play that particular voice. At the same time the train stops for about 10-15 seconds in the station and then before leaving the station, it will again start to announce “PLEASE GET INTO THE TRAIN, THE TRAIN WILL LEAVE IN 6 SEC” and the train starts to move to next station. The voice chip will play the voice and this will be heard in the speaker. This voice is repeated till the train leaves the station.</p>
TIEK015	<p>TITLE – PROTECTION OF CROPS AND PROPER USAGE OF RAIN WATER USING SATELLITE COMMUNICATION AND WIRELESS SENSOR NETWORK</p> <p>ABSTRACT – The Embedded Technology is now in its prime and the wealth of Knowledge available is mind-blowing. Embedded technology plays a major role in integrating the various functions associated with it. This needs to tie up the various sources of the Department in a closed loop system. This proposal greatly reduces the manpower, saves time and operates efficiently without human interference. This project puts forth the first step in achieving the desired target. With the advent in technology, the existing systems are developed to have in built intelligence.</p>
TIEK016	<p>TITLE – DESIGNING A COMPLETE VEHICLE IMMOBILIZATION SYSTEM INTEGRATED WITH A PERSONALIZED ALERT MECHANISM</p> <p>ABSTRACT – In automotive applications, vehicle immobilization is one of the important aspects in the area of security system. A variety of prior art anti-theft devices such as, steering wheel locks, steering column locks, burglar alarms, automotive hood locks, ignition locks, truck guards, park interface locks, and computer coded keys, particularly with rolling code keys, have reduced vehicle theft . There is a need for an integrated control system that monitors vehicle status conditions and the right authentication.</p>
TIEK017	

	<p>TITLE – DIGIBIN – SMART WAY FOR SORTING WASTE IN COMMERCIAL PLACES</p> <p>ABSTRACT – Waste Management is the pervasive problem. Nowadays and rising continuously with rise in urbanization. Waste is always the mixture of different types of material. The main goal of this project is to design and develop a sorting system that is portable and also sorts the waste automatically. It’s an eco-friendly automatic system. With the Proliferation of Internet of Things(IOT) Devices as Such as Smart phones and Sensors, this Project describes the effective management of solid waste using embedded system. The solar panel and H-bridge are used by the motor to make the system portable. The moving system stops when a non-living obstacle arrives and takes a turn. Otherwise gets the inputs from the waste dumped by the person which is detected by the sensor. The sensor sends a signal to microcontroller where it decides the type of waste (degradable and non- degradable) and separates it automatically and moves forward. Here the IOT module is used to control and monitor the waste. The system consist of mobile app which receives a message when the dustbin is full (3kg) makes the system to alert and the information is sent to the authority who own this app(“Mr.Bin”). It even includes database of wastage collection on the particular day.</p>
TIEK018	<p>TITLE – FABRICATINO OF AUTOMATED CAR COVER</p> <p>ABSTRACT - In this work an automatic car cover is proposed which will opens itself with the help of push button. It covers the whole car with a thin, but a strong material that not only protects the car from rain, dust and mud (in parked situation) but, also from minor scratches. An assembly of different diameter, concentric cylinders is used to form a hoisting pole and also, so that it could be contained in small space when not in use. The cover material is attached to the top of the aluminium rods on both sides and to a rolling rod, which has the cover rolled on it. Thus providing care to the car from dust and minor scratches. The model also consists of microcontroller and sensors for sensing the surrounding environment and based on the values the car cover mechanism would be activated.</p>
TIEK019	<p>TITLE – DESIGN AND IMPLEMENTATION OF AN ADVANCED SECURITY SYSTEM – INVISIBLE EYE (POWER SAVING SYSTEM)</p> <p>ABSTRACT - The main agenda of this work is to design and implement an advanced security with affordable and less complex system. In this modern era, property crimes are more predominant. This necessitates our need to develop an advanced security system which is the INVISIBLE EYE. It is basically a single camera based security system that can be used to protect valuables kept in a room of a house or property.</p>
TIEK020	<p>TITLE – DESIGN AND DEVELOPMENT OF SIGN LANGUAGE USING FLEX SENSORS</p>

	<p>ABSTRACT- This paper presents an effective communication method for differently-abled persons. Emotion is an important aspect in the interaction between humans. It is fundamental to human experience and rational decision-making. Generally, normal people can easily interact with one another but Sign language is the only means of communication for those who are dumb and deaf. This paper describes the design and working of a system which is used to communicate and to detect emotions of dumb and deaf. Hence by this methodology differently-abled people can able to interact with each other and also with the normal people. The dumb people use their standard sign language which is not recognizable by common people.</p> <p>For This purpose we are converting the sign language into text which is easily understandable by normal people. Sensors are used to detect the sign language and emotions that are processed by PIC microcontroller where the in-built ADC converts the given analog signals into digital form. Then this digital signal is transmitted to LCD.</p>
TIEK021	<p>TITLE – DESIGN AND DEVELOPMENT OF NAVIGATION SYSTEM FOR VISUALLY IMPAIRED PEOPLE</p> <p>ABSTRACT - This paper presents an electronic navigation system for visually impaired and blind people (subject). This system understands obstacles around the subject up to 500 cm in front, left and right direction using a network of ultrasonic sensors. It effectively calculates distance of the detected object from the subject and prepares navigation path accordingly avoiding obstacles. It uses speech feedback to aware the subject about the detected obstacle and its distance. This proposed system uses AT89S52 microcontroller based embedded system to process real time data collected using ultrasonic sensor network. Based on direction and distance of detected obstacle, relevant pre-recorded speech message stored in APR9600 flash memory is invoked. Such speech messages are conveyed to the subject using earphone.</p>
TIEK022	<p>TITLE – DESIGN OF AN NEXT GENERATION BRAILLE SYSTEM IMPLEMENTATION: MOBILE COMMUNICATION DEVICE FOR THE BLIND</p> <p>ABSTRACT - Braille is a tactile writing system used by the blind and the visually impaired in this project we are used a vibration motors for to detect the letters it will run in predefined pattern for each letters and also by using gesture sensors we will give a reply to the messages.</p>
TIEK023	<p>TITLE – PADLOCK: AN INNOVATIVE METHOD OF ACCESSING CONTROL FOR HOME SECURITY</p>

	<p>ABSTRACT - Security systems are often being breached by intelligent thieves and hence there is always a need of new methods to be invented to provide proper security to the homes and also anywhere else. Use of innovative technologies will improve the security to a great extent till the technology becomes open to all. The aim of this paper is to provide the door access control and security by using Biometrics. Basically the paper is divided into two categories: one for the owner and the other for the guest.</p>
TIEK024	<p>TITLE – TECHNIQUES WHICH BRINGS SKYWALK TO PLATFORM</p> <p>ABSTRACT - It is a project which brings the sky walk to platform in railway station. In India we can find skywalk in most of the railway stations. According to survey (Gallup Organization, Hungary) very less people (age around 50-70 years) are using skywalk in railway platform. More percentage of people cross the platform without using skywalks, Which leads more accidents. To avoid these things escalators and passenger lifts are placed in some of the railway stations. As per economy these concept are not feasible. In this paper we presented an idea which brings the sky walk to platform to make use sky walks very effectively. This type of skywalks helps aged as well as handicap people</p>
TIEK025	<p>TITLE – IMPLEMENTATION OF SAFETY SYSTEM DEVICE FOR WOMENS</p> <p>ABSTRACT - India which sees itself as a promising super power and an economic hub, is still trapped in the clutches of various patriarchal evils like molestations, dowry, crime against women, worst among all is Rape. The atrocities against the women can be now brought to an end with the help of an embedded system based device. The systems are getting smarter day by day with the introduction of the speech signal to control the machine. In this paper, the sensor like vibration sensor is used to provide input along with that panic switch is also used which are given to the microcontroller. Zigbee and GSM is the Wireless transmission media used in this project. The information can be send to the concerned person through GSM.</p>

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