DEPARTMENT OF ECE

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ADITYA

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ADVITYA 2K21

ADITYA INISTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI (AUTONOMOUS)

Department of Electronic and Communication Engineering

Vision of the Institute:

To evolve into a premier engineering institute in the country by continuously enhancing the range of our competencies, expanding the gamut of our activities and extending the frontiers of our operations.

Mission of the Institute:

Synergizing knowledge, technology and human resource, we impart the best quality education in Technology and Management. In the process, we make education more objective so that the efficiency for employability increases on a continued basis.

Vision of the Department:

Create high-quality engineering professionals through research, innovation and teamwork for a lasting technology development in the area of Electronics and Communication Engineering.

Mission of the Department:

1. To offer a well-balanced Program of instruction, lab practices, research & development activities, product incubation.
2. Develop accomplished technical personnel with a strong background on fundamental and advanced concepts, have excellent professional conduct.
3. Enhance overall personality development which includes innovative and group work exercises, entrepreneur skills, communication skills and employability.
4. Ensuring effective teaching–learning process to provide in-depth knowledge of principles and its applications pertaining to Electronics & Communication Engineering and interdisciplinary areas.
5. Providing industry and department interactions through consultancy and sponsored research.

Message from Dr. K. Someswara Rao, CHAIRMAN

At AITAM, we are committed to excellence in everything we do. We strive to mould the students in balancing intellectual and practical skills to become leaders in all the fields of Technical know-how and Management. We have created the finest facilities for the students to make the most of their scholastic pursuits. We are closely aligned with the corporate world which ensures exchange of ideas and experiences that keep our curricula focussed on current developments and challenges in the field of engineering. We are firmly committed to research and consulting activities to contribute to the development of the discipline of engineering. Our vitality lies in our spirit of innovation. Our strength lies in our pragmatic approach. Our success lies in our will to do.

Message Sri L.L. Naidu, SECRETARY

Aditya Institute of Technology and Management is founded to meet the increasing demand for competent engineering graduates. Within a short span of its inception, AITAM has grown to be a premier engineering college of its kind and has won laurels and kudos from the industry. The faculty and staff in AITAM are dedicated to providing first-class education that instils strong and potent basic knowledge for sound practice in science and engineering for the well-being of the society. The Institute offers curricula that nurtures creative thinking and prepares students for productive and rewarding careers. The Institute offers programmes that deepen learning experiences of our students and prepare them for successful careers as engineers.

Message from Prof. V.V. Nageswara Rao, DIRECTOR

Engineering education at AITAM is indeed a rewarding intellectual experience. The Institute prepares the engineering professionals of tomorrow imbued with insight, imagination and ingenuity to flourish as successful engineers. Our programs are attuned to the needs of the changing times. The classrooms are ultra-modern; the library and labs are cutting-edge; and all the members of the faculty are workaholic professionals and masters in their fields. Not surprisingly, our students are recruited by such renowned organizations as HCL, Satyam, WIPRO, INFOSYS, TCS, Visual Soft, Innova-Solutions and InfoTech. The exceptional dedication of our students, faculty and staff, and our collaborations with Industry and other institutions ensure that the Institute is well-poised to create a unique niche in the horizons of engineering education.

Message from Dr. A. S. Srinivasa Rao, PRINCIPAL

It is only through knowledge that man attains Prosperity. Prosperity has to expand or grow to become excellence. The road to excellence is toughest, roughest and steepest in the universe. The world requires and honours only excellence. Excellence has to be acquired form wisdom and intelligence to establish innovation. Promotion of innovation is the new role of education. It is only through innovative thinking the present and the future challenges can be addressed to find dynamic solutions. Technology, a part of excellence, is helpful in removing poverty from the world. According to the statistics 40% of the world's poor are in India. Solution to this challenge relies on Technocrats with confidence and self-reliance. AITAM is the pioneering platform for this expected output. The institution mends the students in building character, strengthening mind, expanding intellect and establishing the vision with a new perspective. The student of AITAM is prepared through rigorous training that makes him to stand on his own feet to lead a prosperous career and life.

Message from Dr. D YUGANDHAR, H.O.D of ECE

Aditya Institute of technology and management (AITAM) is one among the reputed engineering colleges imparting finest quality education. The department of Electronics and Communication Engineering was established in the year 2001. The department has experienced and well qualified faculty members, well equipped laboratories such as Digital Signal Processing Laboratory, Communication and Microwave Engineering Laboratory, VLSI Design Laboratory, Microprocessor Laboratory and Antenna Design/ Simulation Laboratory etc. Our aim is to produce graduates capable of effectively using professional skills with values for betterment of society and to meet the varying demands of industry and research environment. Our department has a fine blend of a team of qualified and experienced faculty. We are committed to give our students an outcome based education through outcome based teaching and learning process which provides them an environment to develop critical thinking and problem-solving skills as they advance through the programme. The faculty and students are associated with memberships of professional bodies such as Institution of Electronics and Telecommunications Engineering (India), Institution of Engineers (India), Indian Society for Technical Education. Our students earned name and fame all over the globe and rendering best of their services to topmost companies. We as a team resolve to take the department to heights of success and prepare our students for future challenges. The activities like Expert Lectures, Site Visits, Technical Events, Sports and Cultural Events, Soft Skills etc widens their horizon and avert them from being monotonous with academics. To conclude, the department catalyzes and assures a very healthy, amicable but a competitive ambience for our future engineers.

B.TECH PROJECT ABSTRACTS

Sl. No.	Roll No.	Name of the Student	Project Title
1	17A51A0429	MAMIDI ASHAMADHURI	**A Novel Design Of Flip flop Circuits using Quantum Dot Cellular Automata(QCA)**
	17A51A0455	VADADA SAI SUPRAJA	
	17A51A0405	BENDI KHAGESWARA RAO	
	17A51A0444	POTNURU PAVAN KUMAR	
	17A51A0447	RAPAKA PRUDHVI RAJU	

ABSTRACT
As the device dimension is shrinking day by day the conventional transistor based CMOS technology encounters serious hindrances due to the physical barriers of the technology such as ultra-thin gate oxides, short channel effects, leakage currents & excessive power dissipation at nano scale regimes.
Quantum Dot Cellular Automata is an alternate challenging quantum phenomenon that provides a completely different computational platform to design digital logic circuits using quantum dots confined in the potential well to effectively process and transfer information at nano edge as a competitor of traditional CMOS based technology. This paper has demonstrated the implementation of circuits like D, T and JK flip flops using a derived expression from SR flip-flop using Verilog language. The area and delay has been calculated to determine the robustness of the designed flip flops. The simulation results have been verified using Xilinx simulation tool.
Key words: majority gates, not gate, RS flip flop, D flip flop, JK flip flop, T flip flop.

Sl. No.	Roll No.	Name of the Student	Project Title
2	17A51A0419	JAMI GEETHIKA	**Portable camera based text reading of objects for blind persons**
	17A51A0409	DARLANKI SAIMANASA	
	17A51A0420	KALLEPALLI DEVI SRI PRASAD	
	17A51A0442	PIRIYA JAGADEESH	
	17A51A0451	TADELA SUMANTH KUMAR	

ABSTRACT
This project proposes a camera based assistive text reading framework to help blind persons to read text labels from hand-held objects in their daily life. As everyone know that printed text is present everywhere like product names, restaurant menus, instructions on medicines, signed boards etc. To read this text for blind and visually impaired people is important to them without others help. This camera based assistive -product label reader is helpful to assist for them. In this project, a camera is used to capture the image of the product after that apply pre –processing methods like convert color image to gray scale image. Then the captured image is processed internally, first find the Region of
Interest (ROI) that means text region which has to be read using algorithm Maximally External Stable Regions (MSER) which finds stable regions in the image and also use geometric properties to remove stable regions other than text regions. The characters which are recognized in the image are extracted by using Optical Character Recognition(OCR) .The extracted text label is converted to audio output using Text To Speech Synthesizer and the audio output is hear by blind person using

Sl. No.	Roll No.	Name of the Student	Project Title
3	17A51A0407	BOYINA NAVYA	**A secure image steganography using RSA algorithm and Hash lsb technique**
	17A51A0402	BADDA SAICHANDANA	
	17A51A0421	KANDULA BHARGAV TEJA	
	17A51A0439	PATNANA SARATH KUMAR	
	17A51A0459	YENNI HARI BHARGAVA NAIDU	

ABSTRACT
Steganography is a method of hiding secret messages in a cover object while communication takes place between sender and receiver. Security of confidential information has always been a major issue from the past time to the present time. It has always been the interested topic to develop secure techniques to send data without revealing it to anyone other than receiver. Therefore, from time-to-time researchers have developed many techniques to full fill secure transfer of data and steganography is one of them. In this paper we have proposed a new technique of image
steganography using RSA algorithm and hash-LSB technique. RSA algorithm provides more security to data as well as our data hiding method. Hash-LSB technique uses hash function to generate a pattern for hiding data bits into LSB of RGB pixel values of cover image. This technique makes sure that the message has been encrypted before hiding it into a image. If in any case the cipher text got revealed from cover image, the intermediate person other than receiver can't access the message as it is in encrypted form.

Sl. No.	Roll No.	Name of the Student	Project Title
4	17A51A0424	KONDALA SANDEEP KUMAR	**Design and Analysis of circular and rectangular microstrip antennas using inset feed for wireless Applications.**
	17A51A0460	YERNAGULA SAI NIKHIL	
	17A51A0440	PATRUNI BABURAO	
	17A51A0438	PARIDALA RAKESH	
	16A51A04C7	KONDALA SANDEEP KUMAR	

ABSTRACT
We are designing the Rectangular Microstrip Antenna (RMSA) and Circular Micro Strip Antenna (CMSA) with inset feed at S –band frequency in this project. RMSA is equipped for 2.4 GHz resonant frequency operations & also CMSA for 2.4 GHz resonant frequency operations. We will discuss here about RMSA and CMSA operating at the same frequency. This choice of frequency would create the antenna an ideal alternative to be used within the Wireless Local Area Network [WLAN] and WiMAX, Wi-Fi, and Zigbee applications. The dielectric we are using for both MSAs is epoxy material FR-4 having a permittivity of 4.4. We are using HFSS software for the design of both MSAs. After the design we analysed some parameters such as VSWR, return loss, radiation pattern, radiation intensity and efficiency and compared these parameters between RMSA and CMSA.

Sl. No.	Roll No.	Name of the Student	Project Title
5	17A51A0417	HARI RASMITA PANDA	**A Performance Analysis of Advanced Encryption Standard Algorithm for Data Privacy in IoT Devices Internet of Things (IoT),**
	17A51A0401	ANDHAVARAPU PRAVALLIKA	
	17A51A0431	MARLA MAHAVIDYA	
	17A51A0435	NIMNANA DIWAKAR	

ABSTRACT
Internetworking of smart devices, embedded with sensors, software, electronics and network connectivity that enables to communicate with each other to exchange and collect data through an uncertain wireless medium. Recently IoT devices are dominating the world by providing its versatile functionality and real time data communication. Apart from versatile functionality of IoT devices, they are very low battery powered, small and sophisticated, and experience lots of challenges due to unsafe communication medium. Despite the fact of many challenges, the energy issue is now becoming the prime concern. Optimization of algorithms in terms of energy consumption has not been explored specifically; rather most of the algorithms focus on hardware area to minimize it extensively and to maximize it on security issue as possible. But due to recent emerge of IoT devices, the main concern are shifting to moderate security and less energy consumption rate. This project present, a lightweight version of Advanced Encryption Standard (AES) which meets the demand.

Sl. No.	Roll No.	Name of the Student	Project Title
6	17A51A0422	KARANAM JAYASRI	**Design and Synthesis of Combinational Circuits Using Reversible Decoder In Xilinx**.
	17A51A0437	PANASA SOWJANYA	
	17A51A0450	SRIPADA SRAVYA	
	17A51A0434	NALLANA MANIKANTA	

ABSTRACT
In this project, we are implementing full adder, full subtractor, multiplexer, binary comparator using a novel reversible decoder. Reversible logics are one of the most vital logics in present and it has different areas for its application, those are low power CMOS, quantum computing, nanotechnology, digital signal processing etc., Logic synthesis for reversible logic differs considerably from standard logic synthesis. Reversible logic has been motivated by consideration of zero-energy computation thus it reduces the power utilization. These Reversible logics are used to design combinational circuits like Decoders; Multiplexers have better performance compared to the conventional systems. In this paper the design analysis of implemented reversible multiplexer and decoder is presented. All arithmetic and logic modules are implemented in reversible multiplexer logic by which delay is educed along with power consumption. This design analysis is done with Verilog HDL and is simulated using ISIM simulator and implemented by using Xilinx ISE project navigator.

Sl. No.	Roll No.	Name of the Student	Project Title
7	17A51A0427	KOVVURU DIVYANI	**SMART AGRICULTURE MONITORING SYSTEM USING IOT**
	17A51A0416	GURUVELLI SWATHI	
	17A51A0432	MARRAPU SANDHYA	

	17A51A0426	KOTTAPALLI SHANMUKHA RAO	

ABSTRACT
India is the agriculture based country. Our ancient people completely depended on the agricultural harvesting. Agriculture is a source of livelihood of majority Indians and has great impact on the economy of the country. In dry areas or in case of inadequate rainfall, irrigation becomes difficult. So, it needs to be automated for proper yield and handled remotely for farmer safety. Increasing energy costs and decreasing water supplies point out the need for better water management. Irrigation management is a complex decision making process to determine when and how much water to apply to a growing crop to meet specific management objectives. If the farmer is far from the agricultural land he will not be noticed of current conditions. So, efficient water management plays an important role in the irrigated agricultural cropping systems. A low cost alternative solution for efficient water management currently in use is drip irrigation systems that consist of an automated controller to turn on & off the control values, which in turn helps the farmers by managing the water supply to the crop fields and further maintains the moisture levels of soil that helps in better crop production. This project probes into the design of the automated irrigation system based on Arduino. This Embedded project is to design and develop a low cost feature which is based on embedded platform for water irrigation system. This project uses temperature and soil moisture sensors to detect the water quantity present in agriculture. The project uses Arduino micro controller which is controller to process the information. The aim of the implementation was to demonstrate that the automatic irrigation can be used to reduce water use.
Keywords: Arduino Uno, ESP8266 (Wi-Fi module), Automation of Irrigation System, Sensors.

Sl. No.	**Roll No.**	**Name of the Student**	**Project Title**
8	17A51A0403	BALARAMMAHANTY SIVA PRIYA	**Recognition of handwritten digits using neural network in deep learning**
	17A51A0443	POTNURU LEELA ABHILASH KUMAR	
	17A51A0445	PULAKALA SAILAJA	
	17A51A0415	GORTHI DHEERAJ KUMAR	
	17A51A0403	BALARAMMAHANTY SIVA PRIYA	

ABSTRACT
Deep Learning is a subset of machine learning in artificial intelligence that has networks capable of learning unsupervised from data is unstructured or unlabeled. Also known as deep neural learning or deep neural network. It imitates the workings of the human brain in processing data and creating patterns for use in decision making. A Neural network is a series of algorithms that endeavors to recognize underlying relationships in a set of data through a process that mimics the way the human brain operates. In this sense, neural networks refer to systems of neurons either organic or artificial in nature. Through MNIST data set has to be taken and has to build the model. Model should be trained and tested and it identifies the model digit.

Sl. No.	Roll No.	Name of the Student	Project Title
9	17A51A0454	TOTHA RAVI KUMAR	**IMPLEMENTATION OF FLOATING-POINT ARITHMETIC UNITUSING HDL**
	17A51A0413	GANTA SWETHA LAKSHMI PRIYA	
	17A51A0448	SAIMANI NAYAK	
	17A51A0414	GOLIVI SANTOSH KUMAR	

ABSTRACT

Digital design is an amazing and very broad field. The applications of digital design are present in our daily life, including computers, calculators, video cameras etc., Floating-point operations are useful for computations involving large dynamic range, but they require significantly more resources than integer operations. Aim of the project is to design and simulation of Floating-point Arithmetic Unit which is a part of math coprocessor. The main benefit of floating-point representation is that it can support a much wider range of values rather than fixed point and integer representation.

Addition, Subtraction, Multiplication and division are the arithmetic operation in these computations. In this floating-point unit, input should be given in IEEE 754 format, which represents 32-bit single precision floating point values. In general, it can be assumed that fixed-point implementations have higher speed and lower cost, while floating-point has higher dynamic range and no need for scaling, which may be attractive for more complicated algorithms. The key parameters for the performance measure of any VLSI design are logic delay, power consumption and chip area. This project describes the implementation of a floating-point arithmetic unit.

Sl. No.	Roll No.	Name of the Student	Project Title
10	17A51A0425	KORADA VENKATA SAI SONIKAVAS	**DISEASE DIAGNOSIS WITH EXTENSIBLE SET OF DISEASES**
	17A51A0412	GANNAVARAPU PRAVALLIKA	
	17A51A0449	SILLA SAI SWAROOP	
	17A51A0410	DASARI SAI KUMAR	

ABSTRACT

Fruit disease identification is important early on because it will have an effect on the agricultural sector. This project focuses on the identification and analysis of fruit infections found in plant areas, as well as the storage of data about agricultural fields and farmer information in databases and the retrieval of data. More fruit diseases occur as a result of environmental conditions, mineral levels, insects in the farm field, and other factors. Image processing decides the observed data from the plant region K-Mean, and SVM classification techniques are used to classify the images, and numerical properties of different features are analyzed and categorized. To classify the data, use a support vector machine. SVM stands for "supervised learning." It categorizes the training data using the training class labels as a reference. Diseases in particular fruit, causes devastating problem in economic losses and production in agricultural industry worldwide. In this project, a solution for the detection and classification of fruit diseases is proposed and experimentally validated by simulation. The image processing based proposed approach is composed of the following main steps: in the

first step K-Means clustering technique is used for the image segmentation, and finally images are classified into one of the classes by using a Multi-class Support Vector Machine. Our analyzed results intimate that the proposed solution can significantly support accurate detection and automatic classification of apple fruit diseases. The classification accuracy for the proposed solution is achieved up to 83% as compared with other benchmark algorithm.

Sl. No.	Roll No.	Name of the Student	Project Title
11	17A51A0436	PALLI HEMANTH	**PIR BASED SECURITY SYSTEM USING RASHBERRY PI**
	17A51A0430	MANDA SATYA SIVA SAI	
	17A51A0411	GANDI SAIVAMSI	
	17A51A0408	CHITCHULA SAI VIVEK	

ABSTRACT
Now a day's security forms the most important part of our lives. As it plays very vital role to full fill our safety aspects as burglary and theft which was always a problem, as lately increased terrorism threats in military boarders, theft of raw materials and expensive goods. The main objective of this project is about motion detection using Infra-Red with help of PIR (Passive Infrared) sensor and send a message to the several numbers. When the sensor is triggered, the signal will transmit wireless to take further action. For this project, we relate this sensor and raspberry pi to API it is popularly known as Application Programming Interface which is internally connected to servers by the network. This API interface helps us to send the message to various mobiles which are linked to it.

Sl. No.	Roll No.	Name of the Student	Project Title
12	17A51A0446	RAM KUMAR PURI	**GIS Based shortest path routing algorithm in Emergency response system**
	17A51A0406	BONTULA SAI LAASYA PRIYA	
	17A51A0453	THURUBATI SARATH KUMAR	
	17A51A0457	VUDDAVOLU HARSHITA	

ABSTRACT
In crowded cities in India like Mumbai, Delhi, finding the desired location becomes a difficult task, especially in emergencies. The main criteria of any emergency response system (ERS) are its readiness to solve the immediate emergency such as fire emergency response, police station emergency response, healthcare emergency response system, etc. The main purpose of this project is to provide an enhanced network analysis that uses the capabilities of the Geographic Information
System (GIS) to identify the best route from the location of an incident for any healthcare service provider in crowded cities. The expected results obtained in this project showed that the best route travel time is much better than the shortest route travel time. In emergencies, it is essential to reach the location of an incident as fast as possible to rescue people's life. So, based on the obtained results, this project recommended that the GIS best route algorithm is better than the shortest route algorithm in emergencies especially in crowded cities like Mumbai & Delhi.

Sl. No.	Roll No.	Name of the Student	Project Title

13	17A51A0418	JAIE DIVYASRI	**Detecting Stage of lung cancer based on tumor size- By using image processing**
	17A51A0404	BAMMIDI RAJASEKHAR	
	17A51A0428	LINGAM SOWMYA	
	17A51A0458	YALLA SAI KIRAN	

ABSTRACT

Cancer is an extensive global and universal disease now days which pretend to be an utmost cause for large impermanence rate among men and women every era. Approximately 80-85% of the people who get affected by cancer are being succumbed to death Recognition of cancer at the first stage is an only aspect in front of us to give proper treatment. Among numerous types of cancers, lung cancer is a very fearful and complicated one. Lung cancer means growing of tumor cells briskly and having chances of spreading those cancer cells to other organs which in turn damaging other normal tissue cells of the body. Noticing tumor prematurely can be helpful in curing disease completely and it becomes pivotal to find out whether the tumor has been changed to cancer or not, if the prognostication is made at an initial stage, then countless lives that are at risk could be rescued and moreover accurate prediction can help the doctors to start their treatment at the earliest. In this paper, we have proposed a simple, easy and precise method for accurate prediction of stage of cancer using CT image of the lungs in Image processing. For this process, a CT image will be considered, and then the image will be pre-processed for noise removal. Further segmentation is done to identify and separate desired tumor nodule and extraction of morphological features such as area, perimeter, eccentricity and diameter is carried out under feature extraction. Finally, the classification of lung cancer into different stages based on the size of tumor results have been proposed using MATLAB which are more accurate and less time consuming when compared to other lung cancer prediction systems. The method proposed in this paper to detect tumor in lungs
is simpler when compared to applying other difficult algorithms.

Sl. No.	**Roll No.**	**Name of the Student**	**Project Title**
14	17A51A0423	KITTALI JAGADEESH	**FACIAL RECOGNITION ATTENDANCE SYSTEM USING PYTHON AND OPENCV**
	17A51A0456	VALLE ANUSHA	
	17A51A0441	PEERUKATLA VAMSI	
	17A51A0452	TANGUDU SAIKUMAR	

ABSTRACT

The main purpose of this project is to build a face recognition-based Attendance monitoring system for educational institution to enhance and upgrade the current attendance system into more efficient and effective as compared to before. The current old system has a lot of ambiguity that caused inaccurate and inefficient of attendance taking. Many problems arise when the authority is unable to enforce the regulation that exists in the old system. The technology working behind will be the face recognition system. The human face is one of the natural traits that can uniquely identify an individual. Therefore, it is used to trace identity as the possibilities for a face to deviate or being duplicated is low. In this project, face databases will be created to pump data into the recognizer algorithm. Then, during the attendance taking session, faces will be compared against the database to seek for identity. When an individual is identified, its attendance will be taken down automatically saving necessary information into a excel sheet. At the end of the day, the excel sheet containing attendance information regarding all individuals are mailed to the respective faculty.

Sl. No.	Roll No.	Name of the Student	Project Title
15	17A51A04A5	POTNURU PRANEETHA	**FIR FILTER REALIZATION WITH REVERSIBLE LOGIC GATES**
	17A51A0463	APPIKONDA SAI MOHAN	
	17A51A04A7	REDDI TEJASWI	
	17A51A04A4	POTNURU NAVEEN	
	18A55A0401	BAMMIDI UDAY KUMAR	

ABSTRACT

Filters play an important role in signal processing. Based on characteristics, the different types of filters are LPF, HPF, BPF, and BSF…etc. These filter types can be implemented using either FIR or IIR filters. In this proposal, the FIR filter is designed either by using LMS or with advanced technology. A finite impulse response filter is a filter whose impulse response is of finite dur9ation, because it settles to zero in finite time. The impulse response of FIR filter is actually just the set of FIR coefficients. Once they are derived, the FIR filter is realized with adders/multipliers using novel gate. Here our proposed gate is resemblance with reversible form of gate. Filters are widely used in electronics and telecommunication, radio, television, radar, control system, music. In this project, we are implementing a efficient FIR filter design with the help of reversible logic. We are proposing different multiplier design by realizing the partial products of the multiplier circuit using reversible. We have used PG gate and Feynman' block as reversible half adder (HA) and full-adder (FA) in the adder network, respectively. By using this reversible logic gates, we are implemented the Ripple carry adder and Wallace tree multiplier design. The complexity, simulated outputs and the speed parameters for the adder circuit have been indicated using the Xilinx ISE14.7.

Sl. No.	Roll No.	Name of the Student	Project Title
16	17A51A04B0	SANAPALA REVATHI	**DESIGN OF EFFICIENT PROGRAMMABLE TEST-PER-SCAN LOGIC BIST MODULES.**
	17A51A04A0	PAYALA MANASA DEVI	
	18A55A0402	DOLA GOWTHAMI	
	17A51A0497	PALLI KIRAN KUMAR	
	18A55A0403	J. VINEELA	

ABSTRACT

Built-in-self-test (BIST) is a design technique that allows a circuit to test itself It is a set of structured test techniques for combinational and sequential logic, memories, multipliers and other embedded logic blocks. The principle is to generate test vectors, apply them to the circuit under test or device under test, and then verify the response. Being an automated testing, BIST enables testing at high speed and high fault coverage. BIST controller coordinates the operations of different blocks of the BIST. Based on the test mode(TM) input to the controller, the system either operates in the normal mode or in the test mode. In this project we explain an implementation of a restart able logic BIST controller for a combinational logic circuit using Verilog.

Sl. No.	Roll No.	Name of the Student	Project Title
17	17A51A04B1	SAVIRIGANA SONIA	**AUTOMATIC OBJECT DETECTION USING DEEP LEARNING TECHNIQUES**
	17A51A0495	NAGARAMPALLI PAVAN KALYAN	
	18A55A0404	KHANDAPU KOTESWARA	

		RAO	
	17A51A0493	MOJJADA ROHIT	

ABSTRACT
Object detection is a fundamental visual recognition in computer vision. It has been widely used in past decades to extract different objects from its background. It is mainly linked to image segmentation and image recognition. Accurate object detection is one that can locate any object of any class in the image. It helps to understand and analyze appropriate objects in an image with respect to the background. At present deep learning technique tools are getting importance in the field of Image Recognition. A robust deep neural network was able to identify objects in surroundings accurately. In this work, Deep Convolution Neural Network (CNN) has been preferred for object detection. A pre-trained CNN has been trained on over thousands of RGB images and tested for classifying images. In our algorithm, CNN takes automatically the live images from the camera as input and further resize has been done and finally provides the result of classifying label for the appropriate object. The entire proposed work is carried using MATLAB 2019A Software with help of image processing tool box and Deep learning algorithms.

Sl. No.	Roll No.	Name of the Student	Project Title
18	17A51A0467	BAIRI YAMINI	**Design and Simulation of triple frequency circular patch antenna**
	17A51A04A9	SAHUKARI NANDINI	
	17A51A0498	PARIDALA HARISHKUMAR	
	17A51A0477	GONNABATTULA SAITEJA	

ABSTRACT
An enhanced but simple triple band circular ring patch antenna with a new slotting technique is presented, which is most suitable for X-band, Ku-band and K-band applications. This compact micro strip antenna is obtained by inserting small rectangular strip in a circular ring patch antenna. The antenna has been designed and simulated on an FR4 substrate with dielectric constant of 4.4 and thickness of 2mm. The design is analysed by Finite Element Method based HFSS Simulator Software , The simulated return losses obtained are -35.80dB, -42.39dB, and -44.98dB at 8.96 GHz, 14.44 GHz, 18.97 GHz respectively. Therefore, this antenna can be applicable for X-band, Ku-band and K-band applications respectively.

Sl. No.	Roll No.	Name of the Student	Project Title
19	17A51A04A6	POTNURU SUNEETHA	**An efficient CMOS current reuse capacitive divider low noise amplifier circuits for better communication**
	17A51A04B5	VALUROUTHU DEEKSHA	
	17A51A0466	BAGGU PAVAN KUMAR	
	17A51A0475	DOMPAKU GANESH	

ABSTRACT
The main important aspect in a Communication system is a Receiver. If receiver receives weak signals from an antenna makes communication system be weaker Due to improved parameters like gain, noise, bandwidth, linearity, chip area and power consumption of a Low noise Amplifier (LNA) makes receive part be an efficient for amplification. The pre and post simulation waveforms obtained for transient analysis and AC analysis. This Project is designed an efficient LNA with very low voltage supply as well as it provides high gain and

bandwidth with a small chip area occupancy. This will make receiver section in communication part be strong in amplification. We want to design the CMOS system by using EDA tool. The proposed LNA includes a CS & CG amplifier stages The NC technique is adopted to decrease the noise involvement of the amplifier. Compared with CS, in the interim, the power gain & the total NF performances are also improved further. It has been experiential that the proposed LNA's linearity has little effect on the CG path. Consequently, the bias voltage of the circuit and power consumption is optimized to reduce in the path.
The different noise cancellation of paths for CMOS LNAs goes during bring in a phase mismatch among the 2 parallel paths. This phase mismatch harmfully impacts the system noise cancellation &gain. For that reason, its cause on performance of NF and gain is furthermore quantitatively with analyzed. So we designed this model as current reuse technique, which greatly reduces power consumption at 2.4GHZ LNA input in 90nm CMOS technology node.

Sl. No.	Roll No.	Name of the Student	Project Title
20	17A51A04B3	TANGUDU HARITHA	**Industrial temperature monitoring and fault detecting system**
	17A51A04A8	ROSHINI SAHU	
	17A51A0482	JONNADA MITHIN KUMAR	
	17A51A0461	AMARA KALYAN KUMAR	

ABSTRACT
Industries like petroleum, chemicals, oil and gas have a high risk of fire out breaks which could lead to huge destruction and loss of property. It is very important to have some system that can keep the premises secure and also inform the authorized people within the stipulated time if such an incident takes place. Internet of Things (IOT) is rapidly increasing technology . It is the network of physical objects or things embedded with electronic software, sensors, and network connectivity which enables these objects to collect and exchange data and then deals with bringing control of physical devices over the internet we are developing a system which will automatically monitor the industrial applications and generate alerts/alarms or make intelligent decisions. A number of sensors are deployed in our project to monitor industrial parameters like temperature, pressure, gas, etc. These parameters carefully selected on the basis of the potential hazards they can cause to the normal working of the industry machine. The sensors used in our project are temperature sensor DHT11. This sensor will collect their respective data and then send the same data to node MCU ESP8266 which also acts as a Wi-fi module

Sl. No.	Roll No.	Name of the Student	Project Title
21	17A51A04B8	YENDUVA MADHAVASAI	**Frequency reconfigurable folded dipole antenna for WLAN and Satellite communication applications**
	17A51A04A2	PONNADA SANDHYARANI	
	17A51A0490	KURAKULA KEERTIKA	
	17A51A0471	BEJJIPURAM NAGA VENKATA SAI	

ABSTRACT
The implementation of a frequency reconfigurable antenna with a folded shaped patch is proposed. The Centre frequency of the antenna is electronically tuned by changing the effective electrical length of the folded dipole, which is achieved by employing pin diodes.

The antenna enables discrete tuning using PIN diodes to operate in either the 5.3-6.6 GHz band or the 6.4-10.7 GHz band. Measured Results on tuning range, radiation patterns and gain will be provided. The deigned antenna will be applicable at wireless local area network (WLAN) and Satellite communication applications. Index Terms - Folded Dipole, pin diodes, HFSS Software and Reconfigurable antenna

Sl. No.	Roll No.	Name of the Student	Project Title
22	17A51A0484	KENGUVA MOUNIKA	**ENSEMBLE EMD BASED DATA HIDING TECHNIQUE IN AUDIO SIGNALS**
	17A51A0478	JADDU GOVINDA	
	17A51A04A1	PEDADA NIRMALA	
	17A51A0465	ATTADA AKASH KALYAN	

ABSTRACT
In this project a novel data hiding algorithm based on Ensemble Empirical Mode Decomposition (EEMD) to decompose the watermark signal, combined with the decomposed data is introduced. The audio signal is decomposed by Ensemble Empirical Mode decomposition (EEMD) into intrinsic oscillatory components called Intrinsic Mode Functions (IMFs). Approach consists of shifting an ensemble of white noise. This added signal and considered the mean. The effect of the added white noise is to provide a uniform reference frame in the time frequency space; therefore, the added noise collates the portion of the signal of comparable scale in one IMF. The secret data is embedded in the last IMF of the signal, which is a low frequency mode, will be stable under different attacks. Finally, the exactness of the EEMD method for decomposition and extraction is verified with the simulation results.

Sl. No.	Roll No.	Name of the Student	Project Title
23	17A51A04B4	UDANDARAO TARUN KUMAR	**COMMUNICATION ESTABLISHMENT FOR AERIAL & AQUATIC NAVIGATION OF DRONE**
	17A51A0472	BOTCHA NIVEDITHA	
	17A51A0489	KUNA JHANSI	
	17A51A0483	KAIBADA RAMESH	

ABSTRACT
The advancements in automation lead to the invention of remotely operated vehicles and unmanned vehicles. This paved a path for the invention of many automated vehicles namely autonomous cars, remotely operated drones, autonomous underwater vehicles [AUV], remotely operated underwater vehicles [ROV], and many more. There are countless inventions in aerial domains and aquatic domains separately, but the international approach of developing one common vehicle to serve both aerial and underwater purposes, which is widely used in air-aquatic maneuvering and aquatic diving is a significant challenge. An aerial-aquatic drone is a quad copter that can be able to handle aerial longitudinal stability, propulsion system, air transition, underwater stability. It is a remotely operated aerial-aquatic quad copter with active buoyancy control which is capable of aerial flight, water surface operation, and also aquatic diving. When it comes to point of communication when it is in the air, it simply works on RF communication, the complete navigation and control is completely based on the radio frequency range of communication. When it comes to the point of

communication underwater, the RF is not suitable it is because the high-frequency signals are having larger bandwidths and travel shorter distances, high-frequency electromagnetic signals cannot penetrate and propagate deep in underwater environments. The EM properties of water tend to resist their propagation and cause severe attenuation. For underwater communication, the widely used signals are acoustics, optical signals, and many more. In this project, underwater acoustic communication is used, the sound travels faster in water compared with air because water particles are more densely packed. Thus, the energy the sound waves carry is transported faster; this should make the sound appear louder.

Sl. No.	**Roll No.**	**Name of the Student**	**Project Title**
24	17A51A0468	BARATAM SRILAKSHMI	**SOMNOLENCE DETECTION AND ALERTING**
	17A51A04B6	VARISHA SRAVYA	
	17A51A0476	GEDELA PRAVALLIKA	
	17A51A0486	KOMMU NEELARANI	

ABSTRACT
Nowadays, more and more professions require long-term concentration. Drivers must keep a close eye on the road, so they can react to sudden events immediately. Driver fatigue often becomes a direct cause of many traffic accidents. Therefore, there is a need to develop the systems that will detect and notify a driver of her/him bad psychophysical condition, which could significantly reduce the number of fatigue-related car accidents. However, the development of such systems encounters many difficulties related to fast and proper recognition of a driver's fatigue symptoms. One of the technical possibilities to implement driver drowsiness detection systems is to use the vision-based approach. This article presents the currently used driver drowsiness detection systems. Here we are detecting the driver drowsiness by estimating vision system of him.

Sl. No.	**Roll No.**	**Name of the Student**	**Project Title**
25	18A55A0407	TALAGANA SUNEETHA	**Comparative analysis between median filter and its variants for removal of impulse noise in gray scale images**
	17A51A04A3	POTNURU KAVYA	
	17A51A0496	NUKARAPU LEELA KRISHNA PRAKASH	
	17A51A0474	CHOUDHURY DURGA PRASAD	

ABSTRACT
In this project a comparative analysis to the problem of impulse noise reduction in grey scale image is presented. The basic idea behind this analysis is the maximization of the similarities between pixels in a predefined filtering window. The comparison introduced to this median filter and adaptive filter lies in the establishment of parameters of the similarity function and hence further improvement is possible in adaptive filter and also adapts itself the fraction of corrupted image pixels. The improved adaptive filter preserves edges, corners and fine image details, is relatively fast and easy to implement as compared to median filter. The results show that the adaptive filter outperforms most of the basic algorithms for the reduction of impulsive noise in grey scale images.

Sl. No.	**Roll No.**	**Name of the Student**	**Project Title**
26	17A51A0469	BASITTI SANJANA	**Brain tumor extraction using image processing**
	17A51A0488	KORADA SAI KUMAR	
	17A51A0491	LOKANADHAM VENUKA RANI	
	17A51A0485	KOMARA SUMANTH	

ABSTRACT
The project main aim is to detect brain tumor which helps in finding the exact size and location of the tumor.

Sl. No.	**Roll No.**	**Name of the Student**	**Project Title**
27	17A51A04B2	TAMARAPALLI LOHITA KUMAR	**REAL TIME FACE RECOGNITION BY USING HISTOGRAM OF ORIENTED GRADIENT FEATURES**
	18A55A0406	PATHINA HARIKA	
	18A55A0405	KONDE VARAPRASAD	
	17A51A0494	MUDDADA KRANTHI KUMAR	

ABSTRACT
Face recognition is widely used in computer vision and in many other biometric applications where security is a major concern. The most common problem in recognizing a face arises due to pose variations, different illumination conditions and so on. The main focus of this project is to recognize whether a given face input corresponds to a registered person in the database. This project proposes a new algorithm to detect faces in real time using HOG descriptors. Taking the HOG features of pre-processed image and are given to the Support Vector Machine classifier for classification. The SVM classifier is trained with AT&T database. The entire proposed work is carried using MATLAB 2019A Software with help of image processing tool box and Support Vector Machine classifier algorithms.

Sl. No.	**Roll No.**	**Name of the Student**	**Project Title**
28	17A51A0470	BASWA VEERA SAI DHANA SREE	**Smart Foot Power Generation**
	17A51A0492	MOJJADA LEELAPRASAD	
	17A51A0479	JAMI GOVINDA	
	17A51A0462	ANAKAPALLI HARI KRISHNA	

ABSTRACT
Day by day, the population of the country is increasing and the power requirement is also increasing. The main theme of this project is to use renewable energy sources to generate electricity and to charge our mobile phones or like to charge any device. As the usage of mobile phones is increasing rapidly in day-to-day life, so to operate these mobile phones

mobile charging system at public places play a very important role. Nowadays non renewable energy is available in less percentage. So, the use of renewable energy is worth billions of dollars. In this project we are using renewable energy sources like piezo electric transducers to charge or like to store the power in the storage device as battery. In thus project we had used some important components like voltage regulator and a transistor for the charging controlling purpose. If the scanned their accessed card, then he will charge two munities to his phone. RFID module is used for the user accession purpose. And we can also observe or like to see the output voltage of the piezo electric transducers.

Sl. No.	Roll No.	Name of the Student	Project Title
29	17A51A0480	JAMI SRILIKHITHA	**Simulation of Micro strip patch antenna with periodic defected ground structure for LTE applications**
	18A55A0408	JAMI YASWANTH	
	17A51A0473	BURAGAPU JHANSI	
	17A51A0464	ARTHAKATLA SOMASEKHARA	

ABSTRACT
The study of micro strip patch antennas has made great progress in recent years. Compared with conventional antennas, microstrip patch antennas have more advantages and better prospects. They are lighter in weight, low volume, low cost, low profile, smaller in dimension and ease of fabrication and conformity. Moreover, Micro strip patch antennas can be easily designed to operate in dual-band and multiband applications, for dual or circular polarizations. Thus, they are widely used in many practical applications such as medical, satellite, military...Etc. With the rapid development in wireless communications, much effort has been devoted to reduce the size of Microstrip antennas. In this way, several methods have been proposed recently, such as using a dielectric substrate of high permittivity, Defected Microstrip Structure (DMS), Defected Ground Structure (DGS) at the ground plane are a combination of them. Mainly DGS is a periodic or non-periodic cascaded defect configuration etched in the ground plane of a planar transmission line. The defected geometry is easy to implement and does not need a large area. DGS has been widely used in the development of miniaturized antennas. This project, proposed a low cost compact edge fed rectangular patch antennas by way of the Defected Ground Structure (DGS). The proposed Vertically Periodic Defected Ground Structure microstrip patch antenna. The performance measures of Vertically Periodic Defected Ground Structure microstrip antenna is going to be simulated in "ANSOFT HIGHFREQUENCY STRUCTURE SIMULATOR" software.

Sl. No.	Roll No.	Name of the Student	Project Title
30	17A51A04D0	BOTTA KHAGESWARA RAO	**Implementation Of Improved Watchdog Timer For Safety Critical Applications**
	17A51A04E1	JAMMU SIMHACHALAM	
	17A51A04F9	PATNANA LAKSHMI BHARGAV	
	16A51A0493	MAJJI TEJONIDHI	
	16A51A04H9	YACCHINA JAGADEESH	

ABSTRACT
Embedded systems that are employed in safety critical applications require highest reliability.

External watchdog timers are used in such systems to automatically handle and recover from operation time related failures. Most of the available external watchdog timers use additional circuitry to adjust their timeout periods and provide only limited features in terms of their functionality. This project describes the architecture and design of an improved configurable watchdog timer that can be employed in safety-critical applications. Several fault detection mechanisms are built into the watchdog, which adds to its robustness. The functionality and operations are rather general and it can be used to monitor the operations of any processor based real-time system. This project also discusses the implementation of the proposed watchdog timer which makes the design to be easily adaptable to different applications, while reducing the overall system cost. The effectiveness of the proposed watchdog timer to detect and respond to faults is first studied by analyzing the simulation results. The design is implemented in verilog language by using Xilinx software tool.

Sl. No.	Roll No.	Name of the Student	Project Title
31	17A51A04C3	ARANGI RESHMA	**Face Mask Detection System Using Image Processing Techniques**
	16A51A04E4	SEELANKI ANUSHA	
	17A51A04D9	GUJJU SAI PRASAD REDDY	
	16A51A0459	JAKA JEEVAN KUMAR	
	16A51A04G4	UNGATI SUNEETHA	

ABSTRACT
In today's era of automation and smart devices, there is a crucial need to alter the security and health measures. It is essential to take safety measures in this pandemic situation. In traditional systems many of the doors are having mechanical locks which were restricted on the number of keys. This article proposes a Smart Door Unlock System based on Face Recognition to enhance the health issues. In this system a camera sensor is used to capture the face whether the person is wearing the mask or not. Only the person whose face with mask can be able to entire through the door. So, limitation of spreading virus will be resolved. The security system is also made by means of maintaining into the eye of old age humans for whom it is hard to open the door manually.

Sl. No.	Roll No.	Name of the Student	Project Title
32	17A51A04E5	KARANAM SUDHARSAN	**VOICE CONTROLLED WIRELESS ELECTRONIC NOTICE BOARD USING ANDROID**
	17A51A04C5	BAGATHI YASASVEE	
	17A51A04C1	ALLADA MANASA	
	16A51A0441	DUNNA PAVAN	
	15A55A0414	N. PRAVEEN KUMAR	

ABSTRACT
Now a days every advertisement is going to be digital. The big shops and shopping centers are using the digital moving displays now. In Railway station and bus stands everything that is ticket information, platform number etc is displaying in digital moving display. But in these displays if they wants to change the message or style they have to go there and connect the display to PC or laptop. Suppose the same message if the person wants to display in main

centers of the cities means he have to go there with laptop and change the message by connecting into PC.

Sl. No.	Roll No.	Name of the Student	Project Title
33	17A51A04C8	BAVANA SRIRAKSHA	**A Robust Digital Image Watermarking based on DWT, DCT And SVD**
	17A51A04G8	SIKHA RAJA RATNAM NAIDU	
	17A51A04G2	POTNURU YESWANTH KUMAR	
	17A51A04H6	VOONNA NAVEENKUMAR	

ABSTRACT
Presented, in which the main focus is to provide proper solutions for reducing effect of geometric attacks. To address this goal, we divide host image into four non overlapping rectangular segments called sub-images and then watermark is independently embedded into each of them, using the hybrid scheme. The redundancy reduces effect of cropping attack. Moreover, in order to correct main geometric attacks, such as rotation, translation, and affine translation, we propose an intentional synchronization technique to recover geometrically attacked image via detection of desired image corners. A binary image in the first experiment and some 1D binary random sequence with different lengths in the next experiments are used as watermarks. Since the studied binary sequences have generally smaller lengths than the capacity offered by the proposed scheme, we are motivated to utilize error correction techniques, such as data replication and hamming code for them. Achieved results, compared with other geometric robust schemes, shows that the proposed scheme has stronger or comparable robustness against common signal processing and geometric attacks.

Sl. No.	Roll No.	Name of the Student	Project Title
34	17A51A04D2	CHALLA NEEHARIKA	**Surveillance Robot controlled using an android application**
	17A51A04F8	PANAPANA PRAVEENKUMAR	
	17A51A04E4	KANUGULA THANUSHA	
	17A51A04H2	TAMIRE CHANDU	

ABSTRACT
The robotics and automation industry which is ruled the sectors from manufacturing to house- hold entertainments. It is widely used because of its simplicity and ability to modify to meet changes of needs. The project is designed to develop a robotic vehicle using android application for remote operation attached with wireless camera for monitoring purpose. The robot along with camera can wirelessly transmit real time video with night vision capabilities. This is kind of robot can be helpful for spying purpose in war fields. The wifi technology is relatively new as compared to other technologies and there is huge potential of its growth and practical application. The android application loaded on mobile devices, can connect with

security system and easy to use GUI. The security system then acts on these command and responds to the user. A robot is a machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer. A robot can be controlled by a human operator, sometimes from a great distance. In such type of applications wireless communication is more important. This Project also shows general idea and design of the robot. Surveillance security robot provides safety like man. Automatic patrolling vehicle for periodic patrolling in defined or a restricted area, the patrolling vehicle can move automatically to monitor the dead zones and capture the images by using the camera.

Sl. No.	Roll No.	Name of the Student	Project Title
35	17A51A04H4	THUTA SAITEJA	**GPS BASED UNMANNED GROUND VEHICLE FOR SELF MANEUVERING**
	17A51A04E3	KANAKAM SAI SANDEEP	
	17A51A04E7	KOTLA PRUDHVI RAJ	
	17A51A04G0	PONDURU CHANDRA MOULI	

ABSTRACT
This project aims to build a Self-Navigation robot that monitors its surroundings to provide security. The self-navigation refers to the autonomous mobility of the robot, where it chooses its path along with the pre-defined coordinates. This robot can be used by an individual, organization, or for defense applications. It comprises of obstacle avoidance mechanism to avoid obstacles along its way of reaching the destination and this operation is served by an ultrasonic sensor that is capable of finding obstacles and detecting the motion around them. It also contains a GPS module that helps the robot in identifying the path along its journey by transmitting and receiving the coordinates using the GPS and the Bluetooth module. To communicate with the observing station from a remote location the robot uses the Bluetooth module attached. The camera module attached to the robot continuously monitors the surroundings and streams the live visuals to the observing station over the internet provided by the external source. Arduino microcontroller is used in integrating all the components and in the proper functioning of the robot. The user can set the coordinates where the robot is supposed to navigate or travel ceaselessly and can also observe and control the robot manually if needed.

Sl. No.	Roll No.	Name of the Student	Project Title
36	17A51A04G9	SIMMA DEVI	**LOW POWER MULTIPLIER DESIGN USING DADDA ALGORITHM AND OPTIMIZED FULL ADDER**
	17A51A04F5	MAGATAPALLI SOURAV	
	17A51A04E2	JAYAKRISHNA BADIA	
	17A51A04F7	P SUSHANT VENKATESH	

ABSTRACT
This project presents the model of 8-bit multiplier having high performance and high speed using Algorithm named Dadda and the basic building block used is optimized Full adder having low power dissipation and minimum propagation delay. Full and half adder blocks have been designed using pass-transistor logic to reduce the power dissipation and propagation delay. We have applied Dadda algorithm to reduce the propagation delay. This project is implemented in Xilinx ISE using VERILOG language and waveforms will observe

through simulation, area and propagation will be measured before and after application of Dadda Algorithm.

Sl. No.	Roll No.	Name of the Student	Project Title
37	17A51A04D3	DASARI LAVANYA	**Design of efficient BCD Adders in Quantum dot cellular automata**
	17A51A04H0	SIMMA GANESH RAJA	
	17A51A04H3	TAMMIREDDY DEEPIKA	
	17A51A04D7	GANGITLA PAVAN KUMAR	

ABSTRACT
The modern world is getting advanced and enhanced in implementing the complex and huge structures in a minute design area, as per the Moore's transistor integration law the integrationoftransistorsareprocessed.Asfarthedifficultyhasbeenraisedinidentifying the individual transistor, power supply, power dissipation of each transistor, for fixing this problems many studies and practices are performing. In such Nano technologies evolved QCA is termed as the efficient technology. This technology is employed as the transistor lessstructureswhichistermedasthereplacementofCMOScircuits.TheQCA technology is involving day by day and are employed in arithmetic circuits. This project flaunts QCA-based BCD adder. In this project BCD adder is developed using majority gates. The Xilinx-ISE tool is used for implementation, synthesis and simulation of the project and the results are noted.

Sl. No.	Roll No.	Name of the Student	Project Title
38	17A51A04C2	ANNEPU DIVYA	**Low cost high performance VLSI architecture for Montgomery modular multiplication**
	17A51A04G4	SAMBANA MANOJ KUMAR	
	17A51A04C0	ADDANKI VAIJAYANTI MALA	
	17A51A04D6	ERA JUDHISTI PRODHAN	

ABSTRACT
The Montgomery multiplication algorithm such that the low-cost and high-performance Montgomery modular multiplier can be implemented accordingly. The proposed multiplier receives and outputs the data with binary representation and uses only one-level carry-save adder (CSA) to avoid the carry propagation at each addition operation. This CSA is also used to perform operand pre computation and format conversion from the carry save format to the binary representation, leading to a low hardware cost and short critical path delay at the expense of extra clock cycles for completing one modular multiplication. To overcome the weakness, a configurable CSA (CCSA), which could be one full-adder or two serial half-adders, is proposed to reduce the extra clock cycles for operand pre computation and format conversion by half. In addition, a mechanism that can detect and skip the unnecessary carry-save addition operations in the one-level CCSA architecture while maintaining the short critical path delay is developed.

Sl. No.	Roll No.	Name of the Student	Project Title

39	17A51A04G6	SANAPALA DEEPIKA	**Implementation of low power multiplier using approximate higher order compressors**
	17A51A04F6	MALLA SUPRIYA	
	17A51A04G5	SANAPALA AISHWARYA	
	17A51A04D1	BURILLI KIRAN KUMAR	

ABSTRACT
Multipliers play an important role in today's digital signal processing and various other applications. With advances in technology, many researchers have tried and are trying to design multipliers which offer either of the following design targets – high speed, low power consumption, regularity of layout and hence less area or even combination of them in one multiplier thus making them suitable for various high speed, low power and compact VLSI implementation.
To reduce hardware complexity of multipliers, truncation is widely employed in fixed-width multiplier designs. Then a constant or variable correction term is added to compensate for the quantization error introduced by the truncated part. The proposed multiplier in saves few adder circuits in partial product accumulation. In, two designs of approximate 4-2 compressors are presented and used in partial product reduction tree of four variants of 8 × 8 Dadda multiplier.

Sl. No.	Roll No.	Name of the Student	Project Title
40	17A51A04D8	GORU VAMSEE	**High performance analysis of a cordic architecture**
	17A51A04D5	*DONKA YAMUNA*	
	17A51A04F0	KUNA HEMACHALAM	
	17A51A04C9	BONTA ABHINAYAKARTEEK	

ABSTRACT
CORDIC is an acronym for Coordinate Rotation Digital Computer. The CORDIC algorithm is a repetitive calculation approach ability of emerging different basic functions with a proper shift-and-add method used to evaluate a large amount of functions. It has been used for many years for efficient implementation of vector rotation operations in hardware. It is executed merely by table look-up, shift, and addition operations. Rotation of vectors through fixed and known angles has many applications in animations, robotics, games, computer graphics and digital signal processing.

Sl. No.	Roll No.	Name of the Student	Project Title
41	17A51A04F1	LENKA SRAVANI	**OBJECT DETECTION USING SSD DEEP LEARNING**
	17A51A04D4	DHARMANA RAVI KUMAR	
	17A51A04F4	MACHERLA PREETHI	
	17A51A04C6	BALAGA BHANU PRASAD	

ABSTRACT
Deep learning is a powerful machine learning technique that automatically learns image features required for detection tasks. There are several techniques for object detection using deep learning such as Faster R-CNN, You Only Look Once (YOLO v2), and SSD. Object detection is a computer vision technique for locating instances of objects in images or videos. Object detection algorithms typically leverage machine learning or deep learning to produce

meaningful results. When looking at images or video, humans can recognize and locate objects of interest in a matter of moments. The goal of object detection is to replicate this intelligence using a computer. SSD (Single Shot Multi Box Detector) is an object detection algorithm based on deep learning. As one of the most mainstream detection algorithms, it can greatly improve the detection speed and ensure the detection accuracy. In this paper, the Batch Norm operation is added to the network in order to improve the generalization of the network and speed up network training. The object counting function is added to the image recognition. This paper uses SSD algorithm that incorporates Batch Norm algorithm. The object detection system was built by the Flask framework and the Layui framework. The system can select the data to be detected on the front-end page, the detection results and the number of each type of object were displayed on the front-end page in real time.

Sl. No.	Roll No.	Name of the Student	Project Title
42	17A51A04G3	RUPPA NISHITHA	**A Compact Rectangular dual patch Antenna for Multiple Satellite Communication Applications**
	17A51A04E9	KOTTAPALLI VENKATESH	
	17A51A04C4	BAGADI DEEPIKA	
	17A51A04B9	AAITHI JYOTHI	

ABSTRACT
With the advance of satellite communication systems and their increasing importance, wide band antennas are in great demand for both military and commercial applications. Most of the Communication Systems need a wide band antenna that operates on multi-octave frequencies. Diverse techniques have been developed for a patch antenna for increasing the gain or increasing the bandwidth. A new design concept of compact rectangular dual patch antenna has been developed and it provides both high gain and wider bandwidth. In this paper, a compact rectangular dual patch antenna is proposed as a wide band antenna for multiple satellite communication applications such as Global Positioning System (GPS), Global Navigation Satellite System (GNSS), Indian Regional Navigation Satellite System (IRNSS), and S-Band Satellite Communication. Gain performance and wider bandwidth have achieved with the help of dual rectangular patches and their energy distributed on the surface of the dual patches simultaneously. The rectangular dual patch antenna is simulated and analyzed at the operating frequencies of the GPS, GNSS, IRNSS and S-Band Satellite communications for various characteristics such as VSWR, gain, axial ratio and 3dB beam width. Simulation results are obtained using HFSS software.

Sl. No.	Roll No.	Name of the Student	Project Title
43	17A51A04G1	POTNURU SRUTHI	**Adaptive protocol for quality of service enhancement in mobile ad hoc network**
	17A51A04E8	KOTTAKOTA TEJASWI	
	17A51A04F2	LUKALAPU SAI KUMAR	
	17A51A04C7	BARATAM VENKATA SAIRAM	

ABSTRACT
Mobile Ad Hoc Networks (MANETs) are a self-configuring network of mobile nodes connected by wireless links where each mobile node works as a host as well as a router.

Applications supported by MANETs have stringent Quality of Service (QoS) requirements and to support these QoS parameters MANETs should have efficient routing protocols. Most of the reactive routing protocols like AODV provide a single route for packet delivery. However, when the single route fails, it results in a decline in a performance of various QoS parameters.

Providing a single backup route also does not solve the problem completely as the backup route may also fail. Also, providing multiple backup routes may lead to multiple packets flooding the network. Hence, an efficient routing protocol is required which provides solution to this problem. This project proposes AODV routing protocol with nth backup route (AODV nth BR) that provides source node with more than one back up routes in case of a link failure. The proposed scheme results in better throughput, lesser delay, lesser energy consumption, packet delivery ratio, .

Sl. No.	Roll No.	Name of the Student	Project Title
44	17A51A04E6	KORADA HARI PRIYA	**Implementation of bilbo with star EDT technology for high fault coverage using compressed test patterns**
	17A51A04G7	SEELA MAHESH	
	17A51A04H7	YENDA CHANDRAMOULI	
	16A51A0435	DASARI PAVAN KUMAR	

ABSTRACT

An ASIC chip designed may not meet the functionality requirements. There may be lot of conditions which may cause damage to the designed circuit and effect its functionality. Those conditions include processing faults (such as missing contact windows, oxide breakdown), material defects (such as cracks, crystal imperfections), packaging failures etc. These problems may cause faults in the digital logic circuits and effects circuit functionality. Therefore, the circuit must be tested in order to know whether it is working properly or not.

Several testing methods and algorithms have been proposed such as D-algorithm, PODEM algorithm, Built-in-self-test etc in literature. In this dissertation, Built-in-logic- block-observer (BILBO) method of testing is implemented. A test pattern compaction method, STAR-EDT is combined with BILBO to derive minimum number of test data for detecting all faults that are injected into the circuit. The combined method called BILBO with STAR-EDT methodology is proposed in this thesis. Existing and proposed methods are implemented and applied to various test circuits. After that, a Scheduling method is applied to BILBO with STAR-EDT method for all test circuits at a time. The proposed method requires a smaller number of test patterns than the number of patterns required in existing BILBO methodology. Scheduling concept applied to proposed method results in reduced timing requirements for test procedures.

Sl. No.	Roll No.	Name of the Student	Project Title
45	17A51A04H1	TALASU VINEESH	**RFID BASED E-PASSPORT SYSTEM**
	17A51A04H5	VANGARA VIDYASRI	
	17A51A04E0	HARIDASU RAKESH	
	17A51A04F3	LUKULAPU PREM SAI	
	17A51A04H1	TALASU VINEESH	

ABSTRACT
A technique of programming the system for creating the valid and an electronic identification document are provided. Where in the electronic certificate or identification an electronic sign mark is received from the user and attached to the electronic document .An electronic license signature is attached to the document, and the whole a data is encrypted. An electronic passport act as a legal usable form of identification. The data is uploaded from the universal computing device to an approving machine which decrypts the documents. The digital license and electronic signature involved to the document are the confirmed for authenticity. Smart cards provide portable containers for an account, public key, and biometric data. They are increasingly prevalent for payment mechanisms (e.g., mobile telephone SIMs and credit cards).Advancement in technology comes with so many possibilities that all information can be stored electronically. The purpose is to limit the use of counterfeit documents. This, in turn, will prevent illegal entry of the travelers into any specific country at the same time maintaining the privacy and personal security of the e-passport bearers and track the person in which country. Our proposal uses one of these smart card methods to automate and popularize the e-passport system.

FACULTY ABSTRACTS

An 8x1Sierpinski Carpet Fractal linear Array Antenna design for Multiband Applications

Dr.B.Rama Rao

Abstract-Single element antennas in many applications can not satisfy the demands of gain or radiation pattern. A potential alternative may be to incorporate several antenna components in an array. In this article, novel fractal structure-based array antenna architecture, Fractal arrays used to maximise the antenna's bandwidth and reduce the grid lobes, has been identified. The proposed antenna is usable throughout the 3.1GHz to 10.6 GHz range explicitly reserved for the UWB applications. The proposal involves an 8-element print fractal linear array antenna for wireless communication and multiband deployment working on frequencies between 2.2GHz and 12GHz through minimal ground plane rather than complete ground plane. The Sierpinski Carpet Framework for 2nd Iteration used for the Fractal linear Array configuration of the antenna. He also addresses the Fractal linear antenna architecture measures. The 8- elements linear array and Fractal linear array are designed, simulated and tested by using Vector network analyser and the simulation and the practical results are compared.
Key words: Microstrip Patch, Linear array, Fractal linear Array, Multiband.

A Particle Fuzzy Decisive Framework for Moving Target Detection in the Multichannel SAR Framework

Eppili Jaya

Abstract

Target detection is one of the important sub¯elds in the research of Synthetic Aperture Radar (SAR). It faces several challenges, due to the stationary objects, leading to the presence of scatter signal. Many researchers have succeeded on target detection, and this work introduces an approach for moving target detection in SAR. The newly developed scheme named Adaptive Particle Fuzzy System for Moving Target Detection (APFS-MTD) as the scheme utilizes the particle swarm optimization (PSO), adaptive, and fuzzy linguistic rules in APFS for identifying the target location. Initially, the received signals from the SAR are fed through the Generalized Radon-Fourier Transform (GRFT), Fractional Fourier Transform (FrFT), and matched ¯lter to calculate the correlation using Ambiguity Function (AF). Then, the location of target is identi¯ed in the search space and is forwarded to the proposed APFS. The proposed APFS is the modi¯cation of standard Adaptive genetic fuzzy system using PSO. The performance of the MTD based on APFS is evaluated based on detection time, missed target rate, and Mean Square Error (MSE). The developed method achieves the minimal detection time of 4.13 s, minimal
MSE of 677.19, and the minimal moving target rate of 0.145, respectively.
Keywords: Fractional Fourier transform; adaptive particle fuzzy system; moving target detection; generalized radon-Fourier transform; synthetic aperture radar.

SECURE MEDICAL DATA TRANSMISSION MODEL FOR IOTBASED HEALTHCARE SYSTEMS
D. Chiranjevulu

Abstract
In this paper, a novel image watermarking method is proposed which is based on discrete wave transformation (DWT), Hessenberg decomposition (HD), and singular value decomposition (SVD). First, in the embedding process, the host image is decomposed into a number of sub-bands through multilevel DWT, and the resulting coefficients of which are then used as the input for HD. The watermark is operated on the SVD at the same time. The watermark is finally embedded into the host image by the scaling factor. Fruit fly optimization algorithm, one of the natural-inspired optimization algorithms is devoted to find the scaling factor through the proposed objective evaluation function. The proposed method is compared to other research works under various spoof attacks, such as the filter, noise, JPEG compression, JPEG2000 compression, and sharpening attacks. The experimental results show that the proposed image watermarking method has a good trade-off between robustness and invisibility even for the watermarks with multiple sizes.
Index Terms—chaotic S-block, reversible data hiding, Lossless data hiding, encryption, cryptography, SSI, BSSI.

Design of Hybrid-optimized Digital FIR Low pass Filter
D.V.L.N.Sastry1, A.Jayalaxmi2, V.Laxmi3, J.Swathi4,P.Kameswara Rao

Abstract
In this paper we present spectral analysis of Digital Finite Impulse Response Low pass filter using hybrid-optimized technique. Digital filters plays major role in signal and communication systems. so there is a challenge in the design of FIR filters which satisfies the design requirements like side lobe attenuation (SLA) half bandwidth (HBW) and side lobe fall of ratio (SLFOR by using different techniques like windowing and optimization. here we present Hybrid optimization technique which is a combination of Genetic Algorithm (GA) and particle swarm optimization (PSO).we mathematically calculated Magnitude response and measures characteristics like SLA,HBW and SLFOR. we also compared FIR filter

characteristics with windowing technique, GA, PSO and hybrid optimized techniques and it has shown that Filter characteristics are greatly improved by Hybrid optimized technique.
Key words: FIR Filter, Hamming window, GA and PSO.

HYBRID ALGORITHM BASED ON KALMAN FILTER AND CROSS CORRENTROPY FOR GPS RECEVIER POSITION AUGMENTATION

P. SIRISH KUMAR

Abstract

The Extended Kalman Filter is required because the uncertainty in the Minimum Mean Square Error (MMSE) estimation can be minimized. In this article, the researcher carried out a new kinematic positioning algorithm named as Cross-Correntropy Kalman Filter (CCKF) to enhance the position accuracy and performance of the Global Positioning System (GPS) receiver. Performance of the two algorithms (EKF and CCKF) are evaluated by considering the data of a dual frequency GPS receiver located at IGS station: IISc Bangolore (lat/lon: 13.010 N/77.56 0 E). In this article, batch processing data of IGS station, IISc Bangalore, obtained from IGS network of Scrips Orbit Permanent Array Center(SOPAC) is given as input and output yields in East, North and Up directions of the receiver position.

***Key Words*:** Cross-Correntropy, Extended Kalman Filter, Cross-Correntropy Kalman Filter, Fixed-Point algorithm Global Positioning System.

Kuznets curve with parabola shaped ultra-wideband antenna with defected ground plane for communications

Lalitha Bhavani Konkyana

Abstract

Purpose – This paper aims to state the configuration of the proposed antenna which is competent to many networks such as LTE and X band applications. The experimental study encountered the significance of the proposed antenna Design/methodology/approach – A novel compact Kuznets curve with parabola-shaped quad-band notched antenna is demonstrated in this paper. The presented prototype is scertained on a composite material composed of woven fiberglass cloth with an epoxy resin binder. The resulting ultra-wideband antenna ranges 3.1–3.54 GHz, 5.17–5.51GHz, 5.74–6.43 GHz and 6.79–7.60GHz. To avoid the frequency bands which cause UWB interference,the projected antenna has been incorporated with slotted patch. The proposed antenna design is attained in four steps. The simple circular patch antenna model with defected ground plane is subjected to stepwise progression by including parabola-shaped slot and U shaped slot on the patch to attain four notched bands. Findings – This projected antenna possesses an optimal bond among simulated and measured outcomes, which is more suitable for the quad notched band applications. Substrate analysis is done by varying substrate material, and notch behavior is presented. The proposed method's optimum performance in metrics such as return loss, voltage standing wave ratio and radiation pattern varies its frequency range from 2.56 to 7.6 GHz. Originality/value – The antenna adaptation of the defected ground plane has achieved through the quad notched band with operating frequency ranges 2.56 to 7.6GHz and with eliminated frequency ranges 3.55–5.16GHz, 5.52–5.73GHz, 6.44–6.78GHz and 7.66–10.6GHz.

Keywords Ultra-wideband, WLAN, Wi-MAX, Antenna structure, X-band downlink

Interpretation of Statistical Errors for Precise GPS Receiver Positioning Using Recursive Least Squares and Extended Kalman Filter Approaches

P. Sirish Kumar

Abstract

The Global Positioning system prevalently known as GPS is a range based positioning scheme that gives a 3D position of an obscure object on top of the earth. Object location accuracy commonly depends on the satellite clock error, atmospheric delays, multipath, poor satellite geometry, and receiver measurement noise, etc. Mostly, none of the above parameters do have constant behaviour throughout the world and should be inspected territorially to give an exact solution. This paper mainly concentrates on the statistical analysis of the Recursive Least Squares (RLS) and Extended Kalman Filter (EKF) algorithms. Both of these algorithms were examined in this article by determining the most frequently used positional accuracy parameters in 2D and 3D spaces for statistical error analysis in a specific region, which expose their relationships and clarify several prevalent misinterpretations about precision. For the optimization of analytical outcomes, statistical attributes can be used. To evaluate these parameters, IISC, Bangalore, GPS receiver data were possessed with RLS and EKF methods.

A Mutual Extension to Kalman Filter for Interpretation of the GPS Ambiguities

P. Sirish Kumar

Abstract

Some study methods, like least-squares, Kalman filter, are worked out so far to minimize this error factor and improve the GPS positioning accuracy. This paper presents and a new method in implementing Kalman Filter for GPS positioning, based on the correntropy criterion designated as the Correntropy Kalman Filter (CKF). The suggested model is evaluated using numerous 2-Dimensional and 3-Dimensional accuracy metrics in X, Y, Z directions. The proposed method results show that the positioning accuracy for all three co-ordinates is up to 34 %, significantly greater than the general approach (Traditional Kalman Filter).

Keywords: Accuracy; Correntropy; Correntropy Kalman Filter; Global Positioning System; Kalman Filter

Noise Removal in Long-Term ECG Signals Using EMD-Based Threshold Method

Kiran Kumar Patro, M. Jaya Manmadha Rao

Abstract The ECG signal (electrocardiogram) is the biomedical signal used in clinical studies for the diagnosis of cardiovascular diseases. ECG is the electrical representation of the cardiac activity and is obtained by placing the electrodes on the patient's chest. In this process, several noises appear due to muscular contractions related to breathing and electronic interference. Thus, there is a need for removal of noise for better clinical evaluation. In this work, the empirical mode decomposition (EMD)-based method is proposed, that is, EMD threshold on long-term ECG signal. The purpose of this EMD-based technique is to decompose the signal into a few oscillatory parts, i.e., intrinsic mode functions (IMF's). The IMF's which are dominated by noise are immediately determined and removed by hard threshold method. For the evaluation of this technique, long-term (22,500 samples) ECG signals are acquired from open source MIT-BIH databases. Finally, the performance indicators such as mean square error (MSE) and signal to noise ratio (SNR) in dB of hard threshold method are calculated by using the MATLAB 2018a software.

Secure Opportunistic Watchdog Production in Wireless Sensor Networks: A Review

Dr.G.Satteesh Kumar

Abstract

Finding the security vulnerabilities and solving the issues in Wireless Sensor Networks (WSN) are mandatory tasks for providing secure data transmission. Attackers or intruders are

rising with various types of network harming activities. Due to the open shared medium of WSN, the services can be easily broken. Intrusion Detection System (IDS) helps to keep the network secure against the attackers. At the same time, it is not sufficient against numerous real time attackers. There are plenty of attacks are injected in wireless transmissions. So, taking a deep survey and finding the needs in security perspective are very important jobs. This survey article analyses the problems and solutions given on secure routing and successful watchdog production in WSN. Collectively, this survey helps to understand IDS techniques, WSN characteristics, secure routing, key management techniques and watchdog construction strategies in detail. Finally, this article states some notable problems and solutions for providing optimal watchdog productions. This keeps WSN free from attackers and intruders. As watchdog is a light weight agent, the techniques and protocols used for intrusion detection shall not create maximum overhead and any runtime issues. In this regard, this work analyses various proactive and reactive routing protocols, light weight cryptography techniques and attack types. From the analysis, this deep survey suggests the optimal usage of secure routing protocols and hardware efficient security algorithms. This survey extends its contribution to reveal the adaptability of efficient cryptography techniques, attacks detection algorithms and protocols with real-time watchdogs. This work significantly contributes for watchdog based intrusion detection in low powered WSN. The performance comparisons and the results given in this work deliver the overall technical benefits and limitations of various techniques.

Enhancing the Energy Efficiency in Wireless Sensor Network Using Extended S-MAC (ES-MAC) Protocol

Dr.G. Sateesh Kumar

Abstract

Wireless Sensor Network applications deploy sensor nodes in large numbers in such manner to provide better results. All the sensor nodes are efficient sensing devices operating by the limited capacity of batteries. Most of the WSN applications belong to surveillance monitoring, like forest monitoring and environmental monitoring. Sensor nodes are organized in an Adhoc manner, and each node communicates individually with any other nodes for a long period without knowing its battery capacity. Due to the energy consumption, the sensor nodes suddenly become inactive or dead during the process. Thus, computing and electronics industries are joined together for reducing the overall energy spent by the sensors present in sensor network, i.e., to prolong their lifetime, they are focusing on configuring or designing MAC protocol to increase the energy efficiency. In earlier research different MAC protocols are implemented, but the efficiency varies based on the application and environment. Thus, it is important in designing a common MAC system to support a greater number of surveillance applications and also assists in improving the energy efficiency of the sensor in the network. To do that, this paper aimed to design and implement a novel Extended S-MAC routing protocol for enlightening energy efficiency. The Extended S-MAC is simulated in the Network Simulator tool, and the results are verified. The performance of the proposed Extended S-MAC is evaluated by comparing its results with the other state-of-the-art MAC protocols. Comparing with the existing MAC, the proposed MAC obtained 17% more energy and proved it is better.

Residential energy management system using IoT

Dr.G. Sateesh Kumar

Abstract

In this work a residential energy management system is introduced and, that was developed through raspberry pi, wireless communication technology. An efficient method is proposed to

monitor and control power consumption levels in the home. The home appliances are connected to Wi-Fi hubs in the room, and these Wi-Fi hubs communicate the power consumption levels and energy usage data. Based on the received data and users requirement, control commands are initiated, and the home appliances can be controlled automatically from the home server. Load sharing information will be displayed on the home server and webpage. If the power consumption levels exceed the user-determined threshold, the System will automatically switch off, and an SMS alert will be sent to the user.

Secure watchdog selection using intelligent key management in wireless sensor networks

Dr.G. Sateesh Kumar

Abstract

Confirming security to all individual nodes present in wireless network is ensuring the overall network security. The secure wireless network is needed many real time field-oriented applications. In the geographical fields, the network contains one or more sensor nodes. This network is called as Wireless Sensor Network (WSN). Due to the vulnerable medium condition and resource limitation of WSN, the lightweight security or Intrusion Detection Systems (IDS) are required. The securely selected watchdogs act as IDS agents to monitor the network-level activities of each node in the network. To protect WSN, enough rate watchdogs are needed around the network. This proposed system identifies the issues in the selection mechanisms of watchdog-based IDS in WSN. This work proposes novel secure watchdog selection procedures in WSN to increase watchdog availability ratio against different types of attacks. In this proposed mechanism, use various lightweight multi-layer security providing procedures.

Skin cancer detection and classification using machine learning

Dr.M.N.V.S.S. Kumar

Abstract

Skin cancer is considered as one of the most dangerous types of cancers and there is a drastic increase in the rate of deaths due to lack of knowledge on the symptoms and their prevention. Thus, early detection at premature stage is necessary so that one can prevent the spreading of cancer. Skin cancer is further divided into various types out of which the most hazardous ones are Melanoma, Basal cell carcinoma and Squamous cell carcinoma. This project is about detection and classification of various types of skin cancer using machine learning and image processing tools. In the pre-processing stage, dermoscopic images are considered as input. Dull razor method is used to remove all the unwanted hair particles on the skin lesion, and then Gaussian filter is used for image smoothing. For noise filtering and to preserve the edges of the lesion, Median filter is used. Since colour is an important feature in analyzing the type of cancer, color-based k-means clustering is performed in segmentation phase. The statistical and texture feature extraction is implemented using Asymmetry, Border, Color, Diameter, (ABCD) and Gray Level Co occurrence Matrix (GLCM). The experimental analysis is conducted on ISIC 2019 Challenge dataset consisting of 8 different types of dermoscopic images. For classification purpose, Multi-class Support Vector Machine (MSVM) was implemented and the accuracy obtained is about 96.25.

Designing of wireless sensor nodes for providing good quality drinking water to the public

Dr.M.N.V.S.S. Kumar

Abstract

Industrialization and urbanization in India have caused heavy environmental pollution. Most of the surface water had been polluted due to the environmental influence. Providing better

quality drinking water to public is also a challenge due to pollution in the ground water and contamination even during distribution. Thus, it is very necessary to have adequate methods and equipment for water protection and drinking water quality measurement is an important aspect for the purpose. The protection of public health is an imperative and the potential of millions of severe effects from water contamination is not unrealistic. There is a need of In-situ monitoring, instant collection and calibration of data rather than manual collection of samples and testing. Wireless Sensor Network (WSN) has paved its significance into various applications. Although manual monitoring of water quality has been done, it requires a lot of labor, time and equipment. So, there is a need to develop a robust and reliable smart system where a real time monitoring of parameters of water quality for different water distribution tanks is done all the while. In this paper, Water Quality Monitoring (WQM) in a predefined Wireless Sensor zone using Zigbee Technology is implemented. Water Quality can be accessed in practical systems through the sensors which send the water quality data to the base station. Now a day, Renewable energy power generation is playing a main role in which Solar power is widely used. Maximum Power Point Tracking (MPPT) Controller improves the efficiency of Solar Power System. In this paper, a flexible, reliable Wireless Senor Network (WSN) based method of monitoring the quality of water with maximum power point tracking controlled solar PV system is developed.

Detection and analysis of Alzheimer's disease using various machine learning algorithms

Dr.M.N.V.S.S. Kumar

Abstract

Alzheimer's is a dynamic ailment that decimates the mind's memory and its general functioning. Unfortunately till now, no single test can diagnosis this disease. Cerebrum checks alone can't be considered as a key factor to decide if the individual is experiencing it or not. As of now, the physician is in a conclusion that an individual is suffering from Alzheimer's on premise of the reports of the relations in regards to the social proclivity and checking the past clinical record. Artificial intelligence along with Machine Learning calculations perhaps in a situation to adjust this model. Big processing, in light of the fact that the data is taken through various sources with complex and creating circumstances that make certain to develop later on. Along these lines, in that, we'll take consequences of what extent level of patients get the illness as positive data and negative data. The proposed arrangement shows a big processing model, from the data mining perspective. Utilizing classifiers, this paper presents the work by preparing Alzheimer's rate and qualities are appearing as a disarray framework using different machine learning algorithms. The earlier research proved that the detection of Alzheimer's disease using Support Vector Machine classifier and obtained very less accuracy. In view of this there is need of increasing the accuracy. So, this paper presenting different algorithms to classify the data to improve the efficiency in erecting the mentioned disease and observed that the Support Vector Machine with linear kernel ode gives better accuracy than other models.

A Compact Grounded Asymmetric Coplanar
Strip-Fed Flexible Multiband Reconfigurable
Antenna for Wireless Applications

Dr.M.N.V.S.S. Kumar

Abstract

ABSTRACT A compact grounded asymmetric coplanar strip (GACS)-fed flexible multiband frequency
Reconfigurable antenna with two PIN diodes is proposed. The investigated antenna is backed by a flexible polyamide substrate with compact dimensions of 24 mm _ 19 mm and a thickness of 1.53 mm. The investigated antenna structure contains a monopole patch that

facilitates operation for wireless LAN applications, whereas inverted L-shaped and F-shaped monopoles facilitate operation for Bluetooth and 5G NR applications. The investigated antenna operates at 2.4, 3.8, and 5.6 GHz with measured impedance bandwidths of 5.8%, 6.3%, and 6.6%, respectively, over the three frequency bands, thus facilitating coverage for Bluetooth, 5G NR, and WLAN standards. The two PIN diodes are employed to tune the investigated antenna among four modes, including a single band mode (WLAN 5.5 GHz), two dual-band modes (5G NR 3.8/5.6 GHz, and Bluetooth 2.48/5.6 GHz), and one multiband mode with Bluetooth (2.4 GHz), 5G New Radio (NR) N77 band (3.8 GHz), and WLAN (5.6 GHz) modes. The investigated antenna radiates unidirectional with a peak gain of 3.73 dBi at 5.6 GHz. Measurements are carried out on the human body to investigate the behaviour of the wearable antenna. The simulated SAR values are in a safe limit of 1.6 W/kg for 1 g of tissue, according to the FCC. Moreover, the investigated antenna shows extremely low vulnerability to degradation in performance as a result of bending effects concerning impedance matching with acceptable acquiescence between measurements and simulations.

Enhancing the spectral efficiency and energy efficiency of underwater channel communication by optimalcooperative spectrum sensing using hybrid optimization

Sanapala Umamaheshwararao Muvvala Naga Venkata Siva Santosh Kumar

Underwater wireless sensor networks (UWSNs) contain quite a lot of components such as vehicles and sensors that are deployed in a specific acoustic area to perform collaborative monitoring and data collection errands.
These networks are adopted interactively between diverse nodes and ground based stations. Currently, UWSNs face problems and challenges that pertain to limited bandwidth, media access control, high propagation delay, 3D topology, spectrum sensing, resource utilization, routing, and power constraints. This proposal deals with the intelligent spectrum sensing in underwater cognitive sonar communication networks (CSCN). Here, the improved performance of spectrum sensing in underwater communication is attained by optimizing the cooperative spectrum sensing and data transmission. The parameters of system like sub channel allocation and transmission power is optimized by a new hybrid meta-heuristic algorithm by integrating the concepts of deer hunting optimization algorithm (DHOA) and lion algorithm (LA) termed as lion enabled DHOA (L-DHOA). The main intention of optimizing these parameters is to maximize the spectrum efficiency (SE) and energy efficiency (EE) of the underwater channel communication system. From the analysis, with respect to convergence rate, minimum detection probability, and local sensing time, it is proved that the novel hybrid optimization algorithm keeps a great role in making the trade-off between the SE and EE in underwater channel modelling.