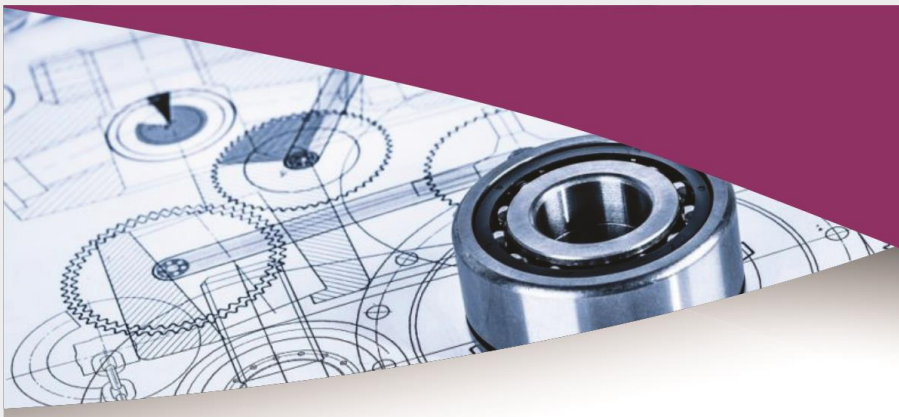

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- Final Year Academic Project(FAP) In Software And Embedded Technologies
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PROJECT TITLES GUIDE
2021 - 2022

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SPIRO PRIME TECH SERVICES. #78, USMAN ROAD, T. NAGAR, CHENNAI – 600 017.
Website: www.spiroprojects.com. Contact – 9791 044 044 / 9962 067 067.
Mail Id: spiroprojects@gmail.com / spirobranch@gmail.com

TABLE OF CONTENT

EMBEDDED SYSTEM

INTERNET OF THINGS

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
1.	ITIOT01	IOT BASED SMART GARBAGE USING LORA WAN.	In this project we proposed a smart garbage system using LORA wireless technology which updates the information to cloud.	2021
2.	ITIOT02	AUTOMOTIVE SMART BLACK-BOX SYSTEM USING IOT.	In this method the black box system is used to store the information of automotive vehicles whenever an accident occurs this system may be helpful for the investigation.	2021
3.	ITIOT03	DRIVING BEHAVIOUR MONITORING FOR INTELLIGENT TRANSPORTATION SYSTEMS.	In this proposed method the driver health status, drowsiness is monitored and the information is continuously monitored using cloud.	2021
4.	ITIOT04	AIR POLLUTION MONITORING USING LOW COST SENSOR WITH IOT LORA WAN CONNECTIVITY.	The air pollution of each area is monitored by using LORA communication technology.	2021
5.	ITIOT05	IOT BASED SMART HEALTHCARE SYSTEM.	The smart health care provides updates the information of a patient to the care taker or doctor using IOT technology	2021
6.	ITIOT06	AN ENERGY EFFICIENT SMART METERING SYSTEM USING LORA NETWORK.	The energy efficient smart metering system helps usage of electricity lesser by monitoring the meter using Micro controller.	2021
7.	ITIOT07	IOT BASED SECURE USER AUTHENTICATION FOR SMART HOME	The smart use authentication system uses biometric for door lock mechanism which helps to improve the security of a home.	2021
8.	ITIOT08	WOMEN SAFETY SYSTEM WITH NERVE STIMULATOR USING IOT TECHNOLOGY	This proposed method of women safety helps the women to safe guard themselves from attackers and also attack the enemies using electrical shock generated by nerve stimulator.	2021
9.	ITIOT09	WATER QUALITY MONITOR AND AUTO FILL SYSTEM USING IOT	The sensors detects the quality of the water, if it's found to be good then the motor automatically fills the tank from the water in the	2021

			sump. This process can be monitored through IOT.	
10.	ITIOT10	IOT-BASED COVID-19 PATIENT MONITORING SYSTEM.	The COVID 19 patient monitoring system helps to identify the symptoms related to COVID and update the health report to cloud using IOT.	2021
11.	ITIOT11	IOT-BASED WEATHER MONITORING USING ARDUINO.	The weather monitoring system helps to gather the information of environmental weather conditions	2021
12.	ITIOT12	VEHICLE ACCIDENT DETECTION AND MONITORING SYSTEM USING IOT.	The IOT based accident system is used to track the vehicle which is held at accident with the help of other vehicles communicated using zigbee.	2021

RFID

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
13.	ITRFID01	SMART SHOPPING TROLLEY BASED ON RFID	The smart trolley is used to provide easier shopping and payment which helps reduce the queue for payment process.	2021
14.	ITRFID02	IOT BASED SECURE VOTING SYSTEM WITH BIOMETRIC AUTHENTICATION	The secure voting system with biometric authentication provides secure polling and the data are monitored in cloud.	2021
15.	ITRFID03	CAR PARKING SLOT DETECTION USING SENSORS AND IOT	The car parking slot detection helps to easily identify the parking slot with the help of cloud and also based on time the amount is calculated.	2021
16.	ITRFID04	IMPLEMENTATION OF AN INTELLIGENT SURVEILLANCE SYSTEM.	The surveillance system helps to provide safer authentication for secure indoor places like house or bank safety locker etc. The MATLAB image processing is used to provide face authentication.	2021
17.	ITRFID05	TRAFFIC MONITORING FOR EMERGENCY VEHICLE USING RFID.	The traffic monitoring system helps to resolve the time delay whenever an emergency vehicle reaches near to the traffic signals. This provides quicker path to the emergency vehicles and also we can control the traffic light using traffic density.	2021

18.	ITRFID06	SMART ATM CARD FOR MULTIPLE BACK ACCOUNTS.	The smart ATM card for multiple bank accounts helps to use single card for accessing multiple bank accounts this helps to avoid multiple ATM cards and unnecessary PIN numbers for each card. This method also implemented with biometric authentication for secure transaction.	2021

LIGHT FIDELITY (LI-FI)

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
19.	ITLI01	LI-FI BASED INDUSTRIAL SAFETY MODULE.	The LIFI is the technology which helps to communicate using visible light communication and this method is implemented in passing the data's of industrial machinery details using LED light.	2021
20.	ITLI02	LI-FI BASED PATIENT MONITORING SYSTEM	The LIFI based patient monitoring helps to transmit the patient details securely to the doctors using LED lights.	2021
21.	ITLI03	VISIBLE LIGHT COMMUNICATIONS FOR VEHICLE MONITORING	The visible light communication is used in vehicle to transmit the data of the vehicle and driver parameters to the other vehicles which helps of avoiding night time accidents.	2021
22.	ITLI04	INDOOR NAVIGATION FOR BIND PEOPLE USING LI-FI	The LIFI can also be used for indoor navigation which continuously transmits the room number and the audio playback recorder helps to play the room name audio.	2021
23.	ITLI05	AUDIO TRANSMISSION USING VISIBLE LIGHT COMMUNICATION.	The LIFI can be used to transmit the audio signal using visible light communication; the audio is converted into binary form and is decoded using photo diode and LIFI receiver circuit.	2021

RSSI				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
24.	ITRSSI01	RSSI BASED AUTOMATIC LANE CLEARANCE FOR EMERGENCY.	The Received Signal Strength Indication is the method which used to match the strength of the RF signal; based on the signal strength the lane for emergency vehicle is cleared.	2021
25.	ITRSSI02	A SYSTEM FOR DETECTION AND TRACKING OF HUMAN MOVEMENTS USING RSSI	This method helps to detect any human movement near to the restricted places. The WIFI module is used to identify the signal strength.	2021
26.	ITRSSI03	SMART METHOD FOR TOLLGATE BILLING SYSTEM USING RSSI	The RSSI can be used in Tollgates; whenever a vehicle reaches near to the tollgate the amount is automatically debited. This method helps to reduce the timing.	2021
27.	ITRSSI04	CHILD MISSING ALERT SYSTEM FOR PARENT IN PUBLIC PLACES BY RSSI	The child missing alert helps to keep the children in nearer place in the crowded area. If the child moves to a longer range the device will alert the parents.	2021
28.	ITRSSI05	RSSI BASED SAND THEFT PREVENTION SYSTEM	The sand theft can be prevented by implanting the RSSI in to the vehicles. Whenever a vehicle enters violating rules the alarm is triggered and the sand theft can be avoided.	2021
ROBOTICS				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
29.	ITROB01	AN INTELLIGENT VEHICLE FOR MILITARY PURPOSE USING MATLAB.	The enemies are detected using MATLAB image processing which is helpful in battlefields. This robot can reduce the causalities and can be used in battlefield instead of humans.	2021
30.	ITROB02	DESIGN AND IMPLEMENTATION OF AN IOT BASED FIRE FIGHTING ROBOT.	This robot detects the fire through the sensors attached with it and acts accordingly to reduce the fire by pumping water or chemicals. It	2021

			can also be used as an alternative to fire-fighters.	
31.	ITROB03	AN INTELLIGENT WHEELCHAIR WHEEL CHAIR WITH VOICE CONTROL.	The voice activated wheelchair helps the differently abled people to control the movement through commands. Various sensors attached to it can sense the obstacles and alerts the user accordingly.	2021
32.	ITROB04	SMART SOLAR AGRICULTURAL GRASS CUTTING ROBOT.	It uses renewable source of energy for the grass cutting mechanism and it can be controlled using Bluetooth. The user can control it through voice or text commands.	2021
33.	ITROB05	MEDICAL ASSIST FOR ISOLATED WARD PATIENT IN HOSPITALS.	This robot can be used in hospital wards where the infection rate is higher. The doctors can control the robots to supply medicines to the patients. This method reduces infection between patients and doctors.	2021
34.	ITROB06	WEB CONTROLLED RASPBERRY PI ROBOT FOR SURVEILLANCE.	This robot can be controlled through webpage for surveillance purpose. This uses raspberry pi for surveillance purpose.	2021
35.	ITROB07	TRAINED ROBOT IN CATERING BUSINESS	Through MATLAB the food is being identified by the robot by which it can directly serve the food to the table from which it is ordered.	2021
36.	ITROB08	MEMS BASED HAND GESTURE CONTROLLED WIRELESS ROBOT	The robot can be controlled by the gestures of the user. It uses MEMS sensor as a controller as the users commands processed by it.	2021

BIO MEDICAL

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
37.	ITBIO01	IOT BASED HEALTH MACHINE FOR COVID-19 WITH MATLAB	By Image processing (MATLAB) the patients' health is monitored in IOT by the CT imaging of the Covid patients. Infection rate can be reduced by this monitoring system.	2021
38.	ITBIO02	ULTRAVIOLET SANITIZATION BOX USING UV LED'S	This box is used as a Sanitization by ultraviolet rays with are not harmful when used in controlled situation. It can safeguard our daily	2021

			essential objects from various diseases and infections.	
39.	ITBIO03	A PATIENT-SPECIFIC SLEEPING POSTURE RECOGNITION SYSTEM.	This project is used to determine the sleeping posture by pressure sensors. These information are monitored through IOT.	2021
40.	ITBIO04	PLATFORM FOR CARDIOVASCULAR DISEASE IDENTIFICATION AND ALERT SYSTEM.	Through MATLAB image processing the patient's heart is diagnosed for any cardio vascular disease and the patient can be treated accordingly. It also alerts if any abnormality occurs.	2021
41.	ITBIO05	SMART INFANT INCUBATOR MONITORING USING IOT.	It monitors the premature baby's health regularly. It alerts the doctors if there is any abnormality occurs. This helps in reducing the rate of loss of lives and it can be monitored using IOT.	2021

WIRELESS

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
42.	ITWI01	VOICE-ACTIVATED SMART HOME APPLIANCE CONTROLLER.	Home appliances can be controlled by voice commands of the user. As the devices are connected by IOT, the working of the appliances can be monitored and controlled through voice commands.	2021
43.	ITWI02	STUDENT AUTHENTICATION BASED ON BIOMETRICS TECHNOLOGY.	Biometric authentication is implemented for secure login by the student's. Regular update of the students can be communicated to their parents through GSM. This provides secure and regular updates about the students.	2021
44.	ITWI03	IN-VEHICLE TRUCK DRIVER FATIGUE AND DISTRACTION WARNING SYSTEM.	The driver drowsiness is automatically detected by the sensor. The driver status is monitored along with the vehicle parameters are diagnosed by MATLAB. An alert can be sent according to the data values to the driver.	2021
45.	ITWI04	SMART HOME MONITORING USING POWER LINE COMMUNICATION.	No separate cables for power and communication, this method	

			reduces the cables, hence its cost. The devices and home appliances can be controlled using this method and can be managed through IoT.	2021
46.	ITWI05	ENHANCED COST-SENSITIVE BIOMETRIC AUTHENTICATION FOR BANK LOCKERS	Authentication follows a series of protocols (i.e., through keypad password, face unlocking and by fingerprint authentication). As this method is automatic the workforce requires is less and the user can easily access it without any difficulty. The face recognition is done with the help of MATLAB.	2021
47.	ITWI06	BUS TICKETING FOR MULTIPLE DESTINATION PUBLIC TRANSIT SETTINGS	The seat allocation is made with physical distancing according to the capacity of the vehicle. The tickets are booked through RFID and Keypad and the allotted seat along with other information are sent through SMS to the user.	2021
48.	ITWI07	A REMOTE WATER MONITORING AND CONTROL SYSTEM USING IOT.	Water quality can be monitored and the same is managed through IoWT. The parameter of the water is regularly monitored and can help in deriving decision on water management through various sensor data's.	2021
49.	ITWI08	SMART HOME ENERGY CONSUMPTION AND MONITORING USING IOT.	Home appliances can be controlled automatically by detecting the presence of the user. As they are connected through IOT, they are controlled through it.IR sensor is used to detect the user in the room.	2021
50.	ITWI09	SMART RENEWABLE ENERGY MONITORING AND SWITCHING DEVICES FOR COMMERCIAL PLACES.	Renewable energy can be used when it is available (during day time) which can be monitored and used efficiently only when it is need which can be automatically controlled using IOT.	2021
51.	ITWI10	AUTOMATIC RAILWAY GATE CROSSING CONTROL AND TRACK CRACK DETECTION SYSTEM USING IOT.	By this project, we can monitor as well as control safety status of the crack in the railway tract as well as railway gate. The system which implement detection of crack on railway track and alerts accordingly.	2021

MECHANISM				
S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
52.	ITME01	A NEW DESIGN OF DUAL-AXIS SOLAR TRACKING SYSTEM WITH LDR SENSORS.	It implements solar tracking mechanism with the help of light dependent resistor. It is used to generate power through solar panel which can rotate in the direction of sun light to produce energy.	2021
53.	ITME02	AUTOMATIC WORK PIECE COUNTING USING ARDUINO	It implements automated object tracking and counting. A conveyor mechanism is used on which the objects move and the IR sensor is used to count the objects which can be controlled and managed through IOT.	2021
54.	ITME03	POOR QUALITY REJECTION USING AUTOMATIONS.	By this method the damaged object can be identified and rejected automatically. The identification is done through MATLAB image processing. This can be monitored and controlled through IOT.	2021
55.	ITME04	SMART GARBAGE MONITORING SYSTEM FOR WASTE MANAGEMENT	In our proposed system we are going to monitor the dustbin in real time and update the status of the dustbin. Also sort the type of waste comes in it with the metal detector.	2021
56.	ITME05	MAN-MACHINE INTERFACE FOR OBJECTS CONTROL USING MEMS.	It implements robot mechanisms which easily handle the object with more accuracy. The Man machine interface using MEMS provide the data by which the object can be handled and controlled.	2021
57.	ITME06	SMART CART ROBOT FOR SHOPPING USING IMAGE PROCESSING	It provides a user friendly machine to shop things with the help of MATLAB image processing. Bluetooth is implemented to access the machine. It also provides contactless shopping experience.	2021
58.	ITME07	CONSTRUCTION OF SMART LIBRARY SYSTEM BASED ON BOOK INFORMATION RETRIEVAL	The books in the library can be easily accessed with the help of robot mechanism. The RFID is used to locate the books which can be easily retrieved from the library.	2021

RASPBERRY PI				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
59.	ITRPI01	SMART SECURITY DEVICE FOR WOMEN BASED ON IOT USING RASPBERRY PI.	The women safety is the important now a days. The pi is a standalone device which is connected to the cloud. Whenever an emergency button is pressed the pi send the information to the cloud.	2021
60.	ITRPI02	NUMBER PLATE DETECTION RECOGNITION BASED ON OPENCV.	In this method number plate of a vehicle is detected using OPENCV. The dataset images are used for identifying the vehicle numbers.	2021
61.	ITRPI03	MACHINE LEARNING BASED MECHANISM FOR CROWD IDENTIFICATION USING OPENCV.	The crowd size that is number of people in a particular area can be identified by using OPENCV and webcam and the details is updated to cloud.	2021
62.	ITRPI04	AN IOT-BASED FIRE DETECTOR USING RASPBERRY PI.	The fire safety is the important aspect in many places. The fire detection can be monitored by using raspberry pi and updates the information to the rescue team.	2021
63.	ITRPI05	DRIVER ASSISTANCE SYSTEM USING RASPBERRY PI.	The driver assistance system helps to monitor the driver and updates the data to the owner.	2021
64.	ITRPI06	IOT-BASED SMART HEALTH MONITORING SYSTEM.	The smart health monitoring system helps to identify the health parameters of a patient and intimates to the doctor.	2021
65.	ITRPI07	DEVELOPMENT OF A VOICE-CONTROLLED INTELLIGENT WHEELCHAIR SYSTEM USING RASPBERRY PI.	The voice controlled wheel chair helps the patient to control the wheel chair using voice commands.	2021
AGRICULTURE				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
66.	ITAGRI01	A SENSOR BASED IOT FOR PRECISION AGRICULTURE.	The agriculture field is automated using sensors. This method helps the farmers to monitor their field area. The pump is automatically switched according to the soil moisture and the rain sensor values.	2021

67.	ITAGRI02	AN IOT BASED SMART GREENHOUSE FOR SUSTAINABLE AGRICULTURE.	In Greenhouse environment the crops are to be monitored regularly, so various sensors are implemented to monitor the crops and automatic supply of water to them is provided through the data's from the sensors. The overall process is monitored through IOT.	2021
68.	ITAGRI03	IOT BASED PATTERN RECOGNITION FOR CROP DISEASE MONITORING SYSTEM.	Through MATLAB image processing the disease in the crops are diagnosed and corresponding pesticides are pumped according to the data values .This can be controlled using IOT.	2021
69.	ITAGRI04	ONLINE WATER QUALITY MONITORING SYSTEM USING IOT	The water quality is monitored automated using sensors. This method helps to farmers to monitor their water bodies like well, sump, etc. The waters pH, turbidity can be monitored by this method.	2021
70.	ITAGRI05	MONITORING AGRICULTURE FIELD USING INTERNET OF THINGS.	The agriculture field is automated using sensors and using Image processing technique to monitor the soil and water levels by which the farmers can plan their cultivation. This can also help in the detection of diseases and this overall process is managed and controlled by IOT.	2021

MATLAB-IMAGE PROCESSING

IMAGE CLASSIFICATION

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
1.	ITIMP01	CONCEPTUAL OF THE HEPATIC TRANSPLANATION SYSTEMS USING IMAGE PROCESSING TECHNIQUES	Liver transplantation is the replacement of a diseased liver with the healthy liver from another person. Liver transplantation is a treatment option for end-stage liver disease and acute liver failure, although availability of donor organs.	2021
2.	ITIMP02	ACCURATE DETECTION AND RECOGNITION OF GLAUCOMA	A group of eye conditions that can cause blindness.	2021
3.	ITIMP03	HEART DISEASE PREDICTION USING DEEP LEARNING	HEART DISEASE DETECTION: Enhanced Deep learning assisted Convolutional Neural Network (CNN) has been proposed to assist and improve patient prognostics of heart disease.	2021
4.	ITIMP04	LIVER TUMOR DETECTION USING FULLY CONVOLUTIONAL NEURAL NETWORK BASED ON DEEP LEARNING FRAMEWORK	Fully Convolutional Neural Network (FCNN) has been classified for liver tumor segmentation, which has been modeled mathematically to resolve the current issue of liver tumor.	2021
5.	ITIMP05	DETECTION AND SEGMENTATION OF SATELLITE REMOTE SENSING BUILDING DEFECTS USING CONVOLUTIONAL NEURAL NETWORK	In this paper satellite images used for the identification of damaged buildings in the large-scale disaster in image processing system.	2021
6.	ITIMP06	SPECIES IDENTIFICATION USING DNA BARCODE SEQUENCES THROUGH SUPERVISED LEARNING METHODS	DNA barcode is a short sequence taken from organism's DNA which can be used as marker for species identification purpose.	2021
7.	ITIMP07	FOOD AND INGREDIENT DEEP LEARNING FOR FINE GRAINED RECOGNITION	This work focuses on the food recognition, specially, the ingredients identification from food images.	2021

IMAGE SEGMENTATION

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
8.	ITIMP08	CONVOLUTIONAL NEURAL NETWORK USING BRAIN TUMOR DETECTION	Diagnosing a brain tumor usually undergoes a very complicated and time consuming process. The MRI images of various patients at various stages can be used for the detection of tumors.	2021
9.	ITIMP09	FABRIC DEFECTS CLASSIFICATION USING MACHINE LEARNING	A novel algorithm that uses supervised learning to classify textile textures in defect and non-defect classes based on suitable feature extraction and classification.	2021
10.	ITIMP10	MR IMAGE CLASSIFICATION USING CNN BREAST CANCER DETECTION	Breast cancer is one the most critical disease and suffered many people around the world. The efficient and correct detection of breast cancer is still needed to ensure this medical issue In this study, Due to the high performance we the diagnosis of breast cancer and its types.	2021
11.	ITIMP11	MR IMAGE CLASSIFICATION AND SEGMENTATION USING CNN LUNG CANCER DETECTION	Lung cancer (LC) is one of the most serious cancers threatening human health. For the current problem of diagnosis the lung cancer this study included samples for the method based on histopathological images of CT, lungs and predicts the stages of lung cancer.	2021
12.	ITIMP12	IMAGE CLASSIFICATION BASED ON MACHINE LEARNING SYSTEM TO DETECT COVID-19 DETECTION	Coronavirus Disease 2019 (COVID-19) has become a major health problem causing severe acute respiratory illness in humans. It has spread rapidly around the globe.	2021

BIOMETRIC SECURITY OF IMAGE PROCESSING

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
13.	ITIMP13	FACIAL EXPRESSION RECOGNITION USING CONVOLUTIONAL NEURAL NETWORK WITH NOISY DATA	The cascade object detector uses the Viola-Jones algorithm to detect people's faces, noses, eyes, mouth,	2021

			or upper body. You can also use the Image Labeler to train a custom classifier to use with this System object. ... To detect facial features or upper body in an image: Create the vision.	
14.	ITIMP14	IRIS RECOGNITION BIOMETRIC USING CONVOLUTIONAL NEURAL NETWORK	Iris recognition is a biometric recognition technology that utilizes the pattern recognition techniques based on the high quality images of iris. ... In this research paper, we have presented the simulation results of the biometric image processing algorithm that we have developed for the iris recognition system.	2021
15.	ITIMP15	DEEP CONVOLUTIONAL NEURAL NETWORKS FOR TO IDENTIFY THE HUMAN SIGNATURE VERIFICATION	Signature Recognition is the procedure of determining to whom a particular signature belongs to. Among the different forms of biometric recognition systems such as fingerprint, iris, face, voice, palm etc. signature will be most widely used.	2021
16.	ITIMP16	OWNERSHIP CLASSIFICATION VERIFICATION USING FACIAL IMAGES	An ownership verification approach verified all the co-owners with a secret sharing. It pointed out this extension reduces the scheme security and image quality also. This Ownership scheme was also extended to confirm partial ownership watermarks.	2021
17.	ITIMP17	DESIGN OF BIOMETRIC RECOGNITION SOFTWARE BASED ON IMAGE PROCESSING	To preserve certain visual features in images and hide all other information, to balance privacy and usability in the context of cloud-based image storage services. We introduce a special case of format-TPE preserving encryption.	2021
18.	ITIMP18	EFFICIENT QUANTUM INFORMATION HIDING USING 2D BARCODES	Information hiding security is to protect data or keep data secure from unauthorized access.	2021

SYSTEMATIC AND STRATEGIES				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
19.	ITIMP19	BRAIN AGE PREDICTION USING BRAIN MR IMAGES VIA DEEP LEARNING	BAE is performed on Magnetic Resonance Imaging (MRI) images to compute the brain ages. Studies based on brain MRI shows that there is a relation between accelerated aging and accelerated brain atrophy. This refers to the effects of neurodegenerative diseases on brain structure while making the whole of it older.	2021
20.	ITIMP20	SALIENT OBJECT DETECTION USING MACHINE LEARNING	RGB Salient object detection is a task-based on a visual attention mechanism, in which algorithms aim to explore objects or regions more attentive than the surrounding areas on the scene or RGB images.	2021
21.	ITIMP21	TRAFFIC FLOW PREDICTION FOR ROAD TRANSPORTATION NETWORKS	Traffic estimation and prediction system has the ability to reduce traffic congestion and improve road capacity effectively.	2021
22.	ITIMP22	IMAGE FOGGY AND SUNNY ENHANCEMENT USING IMAGE PROCESSING TECHNIQUE	Image based fog and sunny detection and visibility estimation for driving assistance systems. After detecting the presence of fog in the image and based on the fog's density we are able to compute the visibility distance and inform the driver about the environment's weather conditions.	2021
IMAGE ENHANCEMENT				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
23.	ITIMP23	DISCRETE WAVELET TRANSFORM-BASED OIL PALM TREE DETECTION USING VERY-HIGH-RESOLUTION (VHR) SATELLITE IMAGES	In order to obtain this information, an approach for palm tree detection using high resolution satellite images is proposed. This approach makes it possible to count the number of oil palm trees in a plantation. The index having highest discriminating power is	2021

			then used as the primary feature for palm tree detection.	
24.	ITIMP24	UNDERWATER IMAGE ENHANCEMENT BASED ON IMAGE REDUCE HAZING ALGORITHM	Underwater Image Co-Enhancement with Correlation Feature Matching and Joint Learning. Considering that images photographed in the same underwater scene usually share similar degradation, related images can provide rich complementary information for each other's enhancement.	2021
25.	ITIMP25	CONVOLUTIONAL NEURAL NETWORK BASED VIDEO FIRE IDENTIFICATION USING MACHNE LEARNING	Fire Detection Using Image Processing Techniques with Convolutional Neural Networks. ... In this paper, an image-based fire alarm system is designed, using a laptop and webcam as the main equipment. The method for using Convolutional Neural Networks (CNN) to identify fire.	2021
26.	ITIMP26	A NEW IMAGE SEQUENCE HAZE REMOVEL SYSTEM BASED ON IMAGE PROCESSING TECHNIQUES	The quality of an image is generally affected by haze. To obtain a well-quality image we are going to remove haze using different technique.	2021

AGRICULTURE USING IMAGE PROCESSING

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
27.	ITIMP27	PLANT LEAF DISEASE DETECTION USING CONVOLUTIONAL NEURAL NETWORK	Disease detection involves the steps like image acquisition, image pre-processing, image segmentation, feature extraction and classification. This paper discussed the methods used for the detection of plant diseases using their leaves images.	2021
28.	ITIMP28	ESTIMATING SOIL MOISTURE OVER WINTER WHEAT FIELD DETECTION USING DEEP LEARNING METHODS	Soil moisture is vital for the crop growth and directly affects the crop yield. Deep learning methods were applied to estimate soil moisture over winter wheat fields during its growing season.	2021

3D-IMAGE PROCESSING

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
29.	ITIMP29	IMAGE CLASSIFICATION USING ML BASED ON RETINAL LAYER BOUNDARIES DETECTION	The thickness of retinal layers. Thickness measurement of retinal layers is important as it provides useful information for detecting pathological changes and diagnosing retinal diseases.	2021
30.	ITIMP30	A TECHNIQUE IN DIGITAL IMAGE PROCESSING FOR FINDING SMALL PARTS OF AN IMAGE MATCH A TEMPLATE	Template matching is a technique in computer vision used for finding a sub image of a target image which matches a template image. This technique is widely used in object detection fields such as vehicle tracking, robotics, medical image and manufacturing.	2021

VIDEO USING IMAGE PROCESSING

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
31.	ITIMP31	OBJECT VIDEO DETECTION USING CNN	Video object detection became a new task of the Image Net Large Scale Visual Recognition. A major role in the growth of video object detection are autonomous driving and video surveillance	2021
32.	ITIMP32	DEEP: SPECIES RECOGNITION FROM UNDERWATER VIDEOS	The image captured in water is hazy due to the several effects of the underwater medium. These effects are governed by the suspended particles that lead to absorption and scattering of light during image formation process.	2021
33.	ITIMP33	SELFIE VIDEO STABILIZATION	Selfie video has become one of the major video types thanks to the recent development of social media. However, selfie videos taken usually by due to the lack of stabilizing equipment. Recent state-of-the-art works have been developed for general video stabilization tasks and integrated into commercial tools.	2021

34.	ITIMP34	REAL TIME SURVEILLANCE VIDEOS DETECTION	Surveillance videos is an important task in the computer vision community since rain/snow existed in videos can severely degenerate the performance of many surveillance system. Various methods have been investigated extensively, but most only consider consistent rain/snow under stable background scenes.	2021

AUDIO USING IMAGE PROCESSING

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
35.	ITIMP35	ONE-TIME PASSWORD FOR BIOMETRIC SYSTEMS SPEECH EMOTION RECOGNITION	Speech emotion recognition is one of the popular topics in the world. Many researchers are engaged in developing systems to recognize different emotions from human speech. We have stated the basic of speech emotion recognition system in security proposes also.	2021
36.	ITIMP36	COMPUTER ASSISTED CLASSIFICATION FOR DRIVER DROWSINESS DETECTION	Automatic driver drowsiness detection based on visual information and Artificial Intelligence and to analyze both the drivers face and eyes to measure PERCLOS, a scientifically supported measure of drowsiness associated with slow eye closure.	2021

POWER ELECTRONICS

RENEWABLE ENERGY

CYCLOCONVERTER

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
1.	ITPW01	A NOVEL MATRIX CONVERTER MODULATION WITH REDUCED NUMBER OF COMMUTATIONS	The matrix converter is an AC/AC converter constituted by an array of controlled bidirectional semiconductor switches that connects directly three-phase source to a three-phase load.	2021
2.	ITPW02	LOW MOSFET COUNT ISOLATED DC–AC CONVERTER	The proposed single-stage dc–ac converter topology is shown. It consists of a half bridge at the dc side and a low MOSFET count cycloconverter at the ac side. These units are isolated through two transformers each rated for half of the power rating.	2021

DC-DC CONVERTER

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
3.	ITPW03	A NON ISOLATED SOFT SWITCHING INTERLEAVED CONVERTER WITH EXTENDED DUTY CYCLE AND LOW OUTPUT CURRENT RIPPLE	Two novel ultra-high step-down interleaved converters combining by coupled inductors and series capacitors, the voltage conversion ratio is improved significantly.	2021
4.	ITPW04	A NOVEL FULL SOFT-SWITCHING HIGH-GAIN DC/DC CONVERTER BASED ON THREE-WINDING COUPLED INDUCTOR	The equivalent circuit of the proposed converter is composed of a TWCI, a single power switch, an input inductor, four diodes, and five capacitors to get the high voltage at single stage.	2021
5.	ITPW05	ZERO-VOLTAGE TRANSITION NON ISOLATED BIDIRECTIONAL BUCK–BOOST DC–DC CONVERTER WITH COUPLED INDUCTORS	This work proposes a new non isolated BDC with the ZVT condition that can be operated in buck and boost modes. The suggested topology has a simple structure with high efficiency in both modes.	2021

6.	ITPW06	A DUAL ACTIVE CLAMP DC–DC CONVERTER WITH HIGH VOLTAGE GAIN	The active clamps' switches turn ON and OFF under zero-current switching (ZCS). In addition, the main switch turns ON under ZCS condition as well. Therefore, switching losses are significantly reduced.	2021
7.	ITPW07	A RECONFIGURABLE BIDIRECTIONAL ISOLATED LLC RESONANT CONVERTER FOR ULTRA-WIDE VOLTAGE-GAIN RANGE APPLICATIONS	A new bidirectional isolated LLC resonant converter without adding extra switches and resonant components is proposed for ultra-wide voltage-gain range operation in this work.	2021
8.	ITPW08	HYBRID HIGH VOLTAGE GAIN TRANSFORMERLESS DC-DC CONVERTER	The placed position of the components of the proposed converter is an important feature to decrease their current and voltage stress, increase their voltage gain, and also maintain the simplicity of operation.	2021
9.	ITPW09	ULTRAHIGH STEP-UP DC-DC CONVERTER COMPOSED OF TWO STAGES BOOST CONVERTER, COUPLED INDUCTOR AND MULTIPLIER CELL	The proposed converter is composed of two stages boost converter, a multiplier cell and a clamp circuit. Furthermore, a shared coupled inductor is utilized between the second boost stage and the multiplier cell. The two stages increase voltage gain similar to quadratic boost converter.	2021

ENERGY MANAGEMENT & ELECTRIC VEHICLE

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
10.	ITPW10	A NOVEL THREE-LEVEL CLLC RESONANT DC–DC CONVERTER FOR BIDIRECTIONAL EV CHARGER IN DC MICRO GRIDS	The proposed three-level CLLC resonant converter. It consists of two three-level full bridges, an intermediate frequency transformer, two resonant inductors, and two resonant capacitors.Lr1 andLr2 represents the sum of the resonant inductance and the transformer leakage inductance in the primary side and the secondary side, respectively.	2021

11.	ITPW11	A WIDE RANGE UNIDIRECTIONAL ISOLATED DC-DC CONVERTER FOR FUEL CELL ELECTRIC VEHICLES	A wide voltage range step up isolated dc/dc converter for fuel-cell electric vehicles was proposed in this article to satisfy the voltage requirements from both fuel cell and battery system in the automotive application as well as provide reliable galvanic isolation.	2021
12.	ITPW12	POWER FACTOR PRE REGULATION IN INTERLEAVED LUO CONVERTER-FED ELECTRIC VEHICLE BATTERY CHARGER	An I-Luo converter cascaded by an isolated converter for EV charging is designed for PF pre regulation at mains at steady state and at sudden varying range of operating voltages. The EV charger with interleaving technique reduces the switch current stress and input as well as output side ripples.	2021
13.	ITPW13	A HIGH-EFFICIENCY ZVS WIRELESS POWER TRANSFER SYSTEM FOR ELECTRIC VEHICLE CHARGING WITH VARIABLE ANGLE PHASE SHIFT CONTROL	Tight current/voltage regulation and high efficiency are the fundamental objectives of wireless power transfer systems (WPTSs) for electric vehicle (EV) chargers. To achieve high efficiency and minimize electromagnetic interference, it is necessary to ensure zero-voltage switching	2021
14.	ITPW14	IMPROVED POWER QUALITY TRANSFORMERLESS SINGLE-STAGE BRIDGELESS CONVERTER BASED CHARGER FOR LIGHT ELECTRIC VEHICLES	This configuration implements a single-phase single-stage transformer less ac–dc converter for the LEVs charging application with additional high step-down gain capabilities and improved power quality performances at the supply side.	2021
15.	ITPW15	MULTIPHASE INTERLEAVED BIDIRECTIONAL DC/DC CONVERTER WITH COUPLED INDUCTOR FOR ELECTRIFIED-VEHICLE APPLICATIONS	A multiphase interleaved bidirectional dc/dc converter utilizing a CI is presented with high power-density capability. Theoretical analysis was described in each operation mode, including output characteristics. Moreover, the comparison with concurrent solutions, a simplified design example, and the mains parameters were addressed.	2021

FOURTH ORDER CONVERTER				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
16.	ITPW16	SOFT-SWITCHING HIGH STATIC GAIN MODIFIED SEPIC CONVERTER	A ZVS soft-switching technique applied to the Modified SEPIC dc-dc converter is presented in this work. The inclusion of an auxiliary switch can ensure the soft-switching operation in all output power range. The proposed technique can be extended to others very high static gain structures and ac-dc applications based on the Modified SEPIC converter.	2021
17.	ITPW17	A NEW PUSH-PULL DC/DC CONVERTER TOPOLOGY WITH COMPLEMENTARY ACTIVE CLAMPED	Natural soft-switching push-pull DC/DC converter topology with complementary active clamped is proposed in this letter. The energy stored in the leakage inductor is absorbed by the clamping capacitor after the switch is turned off, and the switches actively clamp each other by this capacitor.	2021
18.	ITPW18	GAN-BASED ZVS BRIDGELESS DUAL-SEPIC PFC RECTIFIER WITH INTEGRATED INDUCTORS	All the inductors, including one input inductor and two output inductors, have been integrated into the E-I-E core, reducing the total ferrite volume and making the converter more compact. The inductance design and magnetic modeling for the coupled inductor have been analyzed.	2021
MULTI LEVEL INVERTER				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
19.	ITPW19	A 7-LEVEL SWITCHED CAPACITOR MULTILEVEL INVERTER WITH REDUCED SWITCHES AND VOLTAGE STRESSES	In this paper, a novel 7-level switched capacitor multilevel inverter has been proposed for renewable energy conversion. It has inherent capacitor voltage balancing and boosting abilities. It does not require an H-bridge circuit for polarity generation at the load end.	2021

20.	ITPW20	A HIGH STEP-UP SWITCHED-CAPACITOR 13-LEVEL INVERTER WITH REDUCED NUMBER OF SWITCHES	The proposed 13LSCI. It consists of one dc source, three capacitors, one diode, and only 14 power switches. The 13LSCI topology can generate up to 13 voltage levels, and the number of output levels can be further expanded by connecting multiple (N) modules in series.	2021

MULTI PORT CONVERTER

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
21.	ITPW21	A DOUBLE-INTEGRAL SLIDING MODE-BASED HYBRID CONTROL FOR A SINGLE-INPUT-MULTIPLE-OUTPUT BUCK CONVERTER	This is the first article to design a feedback control for the hybrid SIMO buck converter. The idea of using DISMHC with the hierarchical structure to control those types of hybrid SC-based converters has never been reported. Another verification of superior dynamic performance of SMC over linear control.	2021
22.	ITPW22	TWO-MODE CONTROLLED SINGLE/DUAL-INPUT DC–AC INVERTER WITH WIDE-RANGE DC INPUT	The proposed TMCSI, which consists of n T-networks and a full-bridge inverter. The more the number of T-network is, the higher the voltage gain, i.e., the lower input voltage that the inverter can have.	2021
23.	ITPW23	MAXIMIZING RIPPLE CANCELLATION IN INPUT CURRENT FOR SIDO BOOST CONVERTER BY DESIGN OF COUPLED INDUCTORS	This paper proposes a method to design the coupled inductors to achieve maximum ripple cancellation. The coupled inductors are proposed to be designed in sectors 5A, 5B, or 5C, and 5D, depending on whether the sum of duty ratios for two boost converter is less than one or equal to one or greater than one, respectively	2021
24.	ITPW24	AN INTERLEAVED BOOST AND DUAL ACTIVE BRIDGE-BASED SINGLE-STAGE THREE-PORT DC–DC–AC CONVERTER WITH SINE PWM MODULATION	The proposed converter is primarily based on the dual active bridge topology where the secondary bridge is composed of four quadrant bidirectional switches, which allows it to be	2021

			directly connected to an ac port. The primary bridge can also be used as an interleaved bidirectional boost converter by connecting two inductors across the transformer primary, which forms an additional input DC port.	
25.	ITPW25	AN INTERLINKING CONVERTER FOR RENEWABLE ENERGY INTEGRATION INTO HYBRID GRIDS	The general concept of the proposed interlinking converter architecture for hybrid grids, the converter has two dc ports and one ac port, where the low-voltage dc (DCL) side can be PV panels, batteries, or other RESs, and the high-voltage dc(DCH) side can be connected to a dc grid or loads (also storages).	2021

RENEWABLE ENERGY

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
26.	ITPW26	PREDICTIVE HIERARCHICAL CONTROL OF POWER FLOW IN LARGE-SCALE PV MICRO GRIDS WITH ENERGY STORAGE	A hierarchical predictive controller is proposed for a large scale PV microgrid to increase utilization of available PV resources, reduce the variability of power flow between the microgrid and the main grid, and control power flow fluctuations at the point of connection.	2021
27.	ITPW27	A MULTIPORT BIDIRECTIONAL DC–DC CONVERTER FOR HYBRID RENEWABLE ENERGY SYSTEM INTEGRATION	The contribution of this article is to propose a new bidirectional four-port dc–dc converter for hybrid energy system integration with the least number of switches, i.e., six. The proposed converter has two bidirectional ports for the battery and the dc link. The battery not only can supply the power to the microgrid but also can be charged by both energy sources and the dc microgrid.	2021

RESONANT CONVERTER				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
28.	ITPW28	MODULAR ISOLATED LLC DC/DC CONVERSION SYSTEM FOR OFFSHORE WIND FARM COLLECTION AND INTEGRATION	In this work, an offshore wind farm with all dc collection and transmission system has been presented. A modular isolated DC/DC converter is proposed to boost the MVDC voltage to transmission level while also realizing the MPPT of the wind generators.	2021
29.	ITPW29	RESONANT LLC DC–DC CONVERTER EMPLOYING FIXED SWITCHING FREQUENCY BASED ON DUAL-TRANSFORMER WITH WIDE INPUT-VOLTAGE RANGE	To improve the performance of LLC resonant dc–dc converter in a wide input-voltage range, a fixed-frequency LLC resonant converter using two transformers is proposed in this work. The topology of the proposed converter is a combination of a half bridge (HB) and an FBLLC converter sharing one leg. Thus, only four active switches are needed.	2021
VSI				
S.N	**P.CODE**	**PROJECT TITLE**	**DESCRIPTION**	**IEEE YEAR**
30.	ITPW30	HIGH GAIN DC-AC HIGH-FREQUENCY LINK INVERTER WITH IMPROVED QUASI-RESONANT MODULATION	A sine-wave inverter for low voltage DC sources realized with the high gain HF-link inverter topology. The approaches described allow for the realization of the inverter featuring a high turn's ratio transformer with a low value of leakage inductance that is based on standard components.	2021
31.	ITPW31	THREE-PHASE TO SINGLE-PHASE MULTI RESONANT DIRECT AC–AC CONVERTER FOR METAL HARDENING HIGH-FREQUENCY INDUCTION HEATING APPLICATIONS	Three sets of bidirectional switches operate under the two phase modulation, and achieve soft switching over the wide range of source voltage without any dc-link large-volume capacitor.	2021

POWER SYSTEMS

S.N	P.CODE	PROJECT TITLE	DESCRIPTION	IEEE YEAR
1.	ITPS01	A NEW PV-OPEN-UPQC CONFIGURATION FOR VOLTAGE SENSITIVE LOADS UTILIZING NOVEL ADAPTIVE CONTROLLERS	In this article, the development and implementation of proposed PV-O-UPQC was carried out. The focus was for improvement of the power quality in presence of various voltage quality issues along with elimination of current quality issues.	2021
2.	ITPS02	AN IMPROVED FAULT RIDE THROUGH SCHEME AND CONTROL STRATEGY FOR DFIG-BASED WIND ENERGY SYSTEMS	This paper proposed an improved fault ride through scheme for DFIG-based wind energy systems. The design integrates the robustness properties of sliding mode control with the active/ reactive power control capability of DVR and instantaneous power availability of SMES.	2021
3.	ITPS03	AN IMPROVED FAULT-TOLERANT CONTROL SCHEME FOR CASCADED H-BRIDGE STATCOM WITH HIGHER ATTAINABLE BALANCED LINE-TO-LINE VOLTAGES	In order to improve the attainable line-to-line voltages under SM faults, this article proposes an improved fault-tolerant control method, especially for CHB STATCOM application.	2021