



PIMPRI CHINCHWAD EDUCATION TRUST'S
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**PIMPRI CHINCHWAD COLLEGE OF ENGINEERING
AND RESEARCH RAVET, PUNE - 412101.**



PIMPRI CHINCHWAD EDUCATION TRUST
A Trusted Brand in Education Since 1990.

Department of Electronics & Communication

Electronica 2020 α

*Academic Year 2019-20
(Sem-II)*



Department at a Glance

Department of Electronics & Telecommunication

About Department :

The Bachelor of Engineering Program in Electronics and Telecommunication has commenced from the academic year 2014-15. The current student intake capacity is 60. The department is consisting of 03 class rooms and 09 well-equipped laboratories in the department. The Electronics and Telecommunication department is having online access to top journals through J-GATE. The department is having latest software's needed as per the academic curriculum. One practical batch is limited to 15 students and students are encouraged to perform practical individually. For each experiment a group of maximum 02 students performs the practical.

Vision :

* To be a premier department in the field of Electronics and Telecommunication Engineering with emphasis on hands on activities.

Mission :

- * M1 : Producing Engineers of academic excellence, ready with skill sets required to handle the state of art technologies in the field of electronics and telecommunication engineering.
- * M2 : Imparting research and innovative aptitude with moral and professional ethics for overall development of students to achieve desired outcome.

Program Educational Objectives (PEO's) :

- *PEO1: To provide learning environment and hands on training in each area of Electronics and Telecommunication Engineering to achieve skill up-gradation of the human capital.
- *PEO2: To inculcate research capabilities in the Electronics and Telecommunication Engineering and allied interdisciplinary domains and adopt themselves to rapidly evolving technology.
- *PEO3: To impart moral and professional ethics among the students so as to transform them into capable, adaptable and responsible citizens.

Program Specific Outcomes (PSOs) :

- *PSO1: Graduate will be able to identify, design, prototype and test electronics and communication systems using software and hardware tools for real life problems.
- * PSO2: Graduate will be able to develop and support systems based on embedded, automation, microwave, signal and image processing.

Message from HOD's Desk

Dear All,

Greetings for the E&TC department....

Department of Electronics & Telecommunications is located on fourth floor of Pimpri Chinchwad College of Engineering & Research, Ravet, Pune. The department works with the objective of addressing critical challenges faced by the Industry, society and the academia. The department is equipped with 04 software labs and 05 hardware labs with all necessary infrastructure and instruments for Signal Processing, Power Electronics, Antenna and wave, Digital Communication,

Embedded systems. The department faculty work with excellent team spirit with specialization in different areas like Electronics, Communication, Signal processing, VLSI, Embedded System, Wireless Sensor Network etc. Teachers give importance to quality teaching and learning process adapting various innovative techniques and soft skill programmes for students. Special care is taken about the students whose performance is poor in the examinations through counseling and extra classes.



Prof. Dr. Rahul Mapari

Faculty and Staff Members

Sr.No.	NAME OF THE STAFF	SPECIALIZATION	DESIGNATION
1.	Mr. Rahul Ganpat Mapari	PhD (Electronics & Telecommunication)	Professor & HOD
2.	Mrs. Vijayalaxmi Sandeep Kumbhar	ME (Electronics & Telecommunication)	Assistant Professor
3.	Mr. Santosh Nagnath Randive	M.Tech (Electronics)	Assistant Professor
4.	Mrs. Maithili Shailesh Andhare	ME (Electronics)	Assistant Professor
5.	Mr.Kiran Malhari Napte	ME (Electronics & Telecommunication)	Assistant Professor
6.	Mrs. Triveni Deepak Dhamale	ME (Electronics & Telecommunication)	Assistant Professor
7.	Mrs. Arti Avinash Tekade	ME (Electronics)	Assistant Professor
8.	Ms. Rupali Ramdas Kawade	ME (Electronics)	Assistant Professor
9.	Mr. Kishor Bhaskar Wane	ME (Electronics & Telecommunication)	Assistant Professor
10	Mrs. Dipali Nilesh Dhake	ME (Electronics & Telecommunication)	Assistant Professor
11.	Mr. Rahul Sopan Parbat	ME (Microwave Engineering)	Assistant Professor
SUPPORTING STAFF			
12.	Mr. N. S. Kathale	Diploma (Digital Electronics)	Lab Assistant
13.	Mr. K. D. Bhalekar	Diploma (E&TC)	Lab Assistant
14.	Mrs. S. B. Gholap	BE (E&TC)	Lab Assistant
15.	Mrs. B. L. Gawali	Diploma (E&TC)	Lab Assistant
16.	Mr. M. S. Garade	I.T.I (Electrician)	Peon

Technical Article

A convolutional neural network (CNN) is a deep learning artificial intelligence neural network designed to work with inputs structured in a grid format, such as a two-dimensional image for example. As with all artificial neural networks (ANNs), the concept comes from a biological neural network, where specific cells within the visual cortex become active during shape detection. The scientists involved in biological research of this kind developed a model that would become the basis of a CNN algorithm for image classification.

Detection and classification

Before any convolutional neural network is properly functional, it must be trained, i.e. it must learn the items it needs to detect and classify. This training involves using pairs of input and output information; for example, if the application is to identify different crop seed types, the input would be a high-resolution image of a seed, with its name as output. This might appear to be a simple exercise, but, as we already know, in nature there are many small variations; say, for surfaces, there's texture, colour and size. The addition of a third output value, that of seed quality, means that if the CNN could predict not only the seed type but also its quality and condition, this would add more commercial value to the deep learning approach.

Training, or learning, involves the neural network receiving input/output pairs for every possible seed type to be detected. This self-learning phase is computationally-intensive, and to increase the accuracy of seed and quality identification means the CNN needs to “see” a large number of samples (possibly hundreds) of each seed of varying quality and in different light conditions. Not only does training require access to a lot of computing power, but the process of photographing hundreds of images is extremely time-consuming and requires seed experts to annotate each seed image with its quality. For some applications, neural network developers can use a publicly-available database of images that can speed up this process, such as Image Net which contains over 14 million images covering everything from animals to geological features, people and vehicles.

Training a convolutional network

A CNN consists of several different convolution- and pooling-layers and a final connected layer; see Figure 1. Each layer has multiple activation neuron inputs – electronic equivalents of biological neurons. Weights strengthen the value of each neuron, placing more emphasis on an individual neuron's contribution, which is the essential element during training.

The pixel values within a given section of an image to be identified are “convoluted” into a single value, which are then summarized within the pooling layers. Filters are applied to these values to detect edges and features, such as curves and lines, in a given image. The progressive pooling layers increase the level of abstraction of the image, starting with edges, then shapes and finally objects. The final connected layer outputs what it believes to be the correct result.

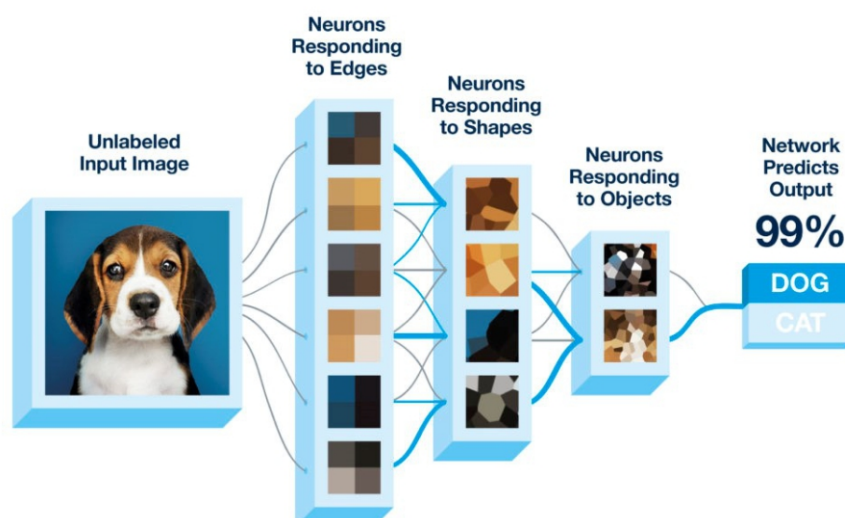


Figure 1: Convolutional neural network (CNN) architecture

The training phase uses a technique called “back propagation”, where the CNN sets the weight values mentioned earlier. Training the neural network is not a single-stage process. Once the initial training has taken place, the results need careful evaluation. Typically, this evaluation phase might be undertaken several times during the training using a number of the sample images to determine how the network is operating, and, if required, changes will be made to the algorithm's operation. The error rate in particular is an important metric of neural network performance, indicating how confident it is in identifying an image of a specific seed and its quality that it has not seen before, reliably and repeatably.

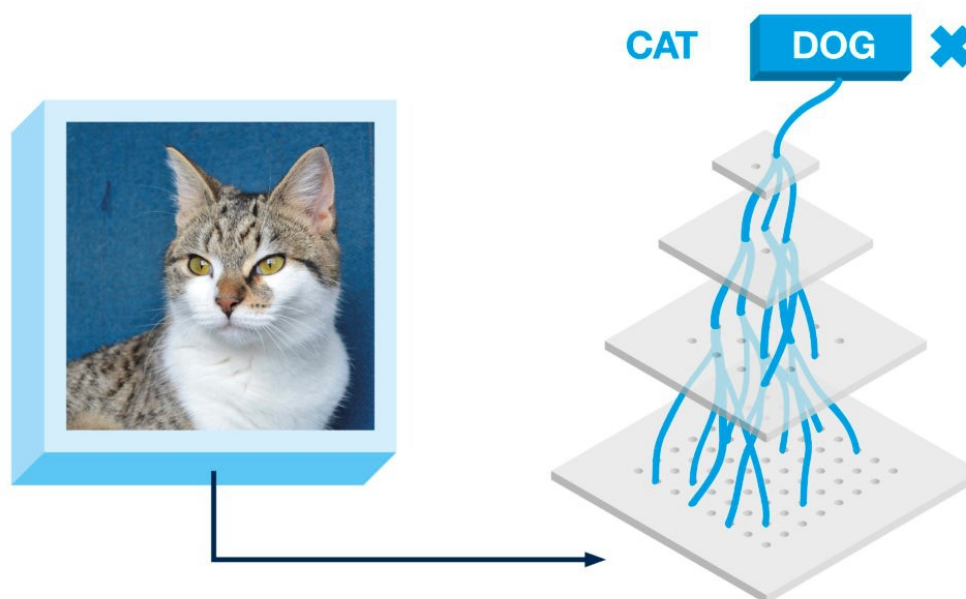


Figure 2: Training the convolutional neural network

Once the trained CNN has been thoroughly evaluated, it is ready for use. To aid this and the overall development process, there are several deep learning neural network frameworks available, including TensorFlow and Caffe. Each comprises a collection of software libraries, APIs, model examples and application tools to make the development task easier.

The frameworks are also helpful to determine the hardware resources and environment required for use in the production systems. Inference is the term used to describe an applied and running neural network. Training will typically take place on high-performance workstation and datacentre server installations, with standalone FPGA- or GPU-based equipment running the applications. Increasingly the need to provide inference on small, battery-powered or low-compute resource devices has led to so-called “inference engines”, which are highly optimised and low-power systems designed for these specific inference tasks.

A host of industrial and commercial applications now rely on CNNs, from machine-vision systems detecting defective parts on a fast-moving production line, through car license-plate recognition for car park payment systems and toll roads, to facial recognition for company security purposes. But we expect to see many more applications very soon.

Departmental Activities

One Week Workshop on Machine Learning using Python

Objectives of the Workshop :

- The objective of the workshop was to introduce students to state-of-the-art methods and modern programming tools for data analysis.
- To expose the Students in emerging technologies in the areas of Data Science & analytics.
- Participants will develop a basic understanding of the principles of machine learning and derive practical solutions using predictive analytics.

Contents Delivered in Workshop :

Day-1 : Python Programming	Day-2 : Introduction to Data Science	Day-3 : Machine Learning Initiation	Day-4	Day-5
<p>Installation and History Language basics Basic Syntax, Operators, Data Types Input and Output statements Decision Making statements if, if-else, if-elif-else Loops control statements for and while, break, continue, pass Strings, Lists Tuples, Dictionary Creating and using Functions Creating Modules and Packages</p>	<p>What is Data Science? What is Machine Learning? Data Mining and Data Analytics Uses and Abuses How do machine learn? Training the data Generalization Steps of Machine Learning Types of Machine Learning Matching data to Machine Learning Numerical Python Introduction to numpy Creating the ndarray Data Visualization Introduction to matplotlib. pyplot Plotting line graphs, bar charts Histograms Data Analytics Getting the Datasets Why csv files? Introduction to Pandas Reading Datasets Data frame & Series</p> <p>Accessing rows and columns Accessing values in data cell Data Frame operations Operating on NaN values Creating filters Exporting Datasets</p>	<p>Data Pre-processing intuition Importing Libraries Importing Dataset Handling Missing Data Categorical Data Training and Testing data Feature Scaling or Standardization Machine Learning Algorithms Linear Regression Simple example Importing Datasets (Experience) Data preprocessing Training and Testing split Characterizing regression Find coefficients and intercepts Visualization Applications Multi Linear Regression Importing Datasets (Car data) Data preprocessing Feature scaling Training and Testing split Characterizing regression Find coefficients and intercepts Finding accuracy</p>	<p>Decision Tree Classification Theoretical introduction Examples Decision Tree model Strengths & weakness Simplified Decision Tree Ex.</p> <p>Importing Datasets (Banknotes) Train the classifiers Train and test split Characterizing classifier Confusion matrix Visualizing the tree Random Forest Classification Importing Datasets (Banknotes) Train and test split Train the classifiers Feature scaling Characterizing classifier Confusion matrix K-Nearest Neighbor What is KNN algorithm? Pros and cons Importing Dataset & Libraries Preprocessing Training and test split Feature scaling Training and predictions Evaluating the algorithm Comparing error rate- k value</p>	<p>Unsupervised Learning K Means Clustering Unsupervised learning flow What is clustering? K-means clustering Generalized algorithm Limitations and use cases Importing datasets (Customers) Finding the clusters (Elbow method) The k means() function & attributes Visualize the elbow Finding the clusters Centroids Visualize the clusters Hierarchical Clustering Clustering steps How it works?</p> <p>Dendrogram Measures of distance Linkage Criteria Agglomerative vs. Divisive Sample program Checking the clusters Importing datasets (Customers) Using dendrogram and linkage Apply the clustering Visualizing clusters Data Science: Text Mining Introduction to nltk Text preprocessing Tokenizing Weighted frequency replace, summarization sorting stemming, lemmatizing, antonyms, synonyms Mini Project</p>

Target Audience and Number of Participants attended:

Target Audience : TE & BE E&TC Students.

Number of Participants : 70

Event Photos:



Session Anchoring by Student



Felicitation of the Trainer



(Group Photo with the Trainer)

One Week Workshop On Python and C++

Objectives of the Workshop :

- To understand how C++ improves C with object-oriented features.
- To learn the syntax and semantics of the C++ programming language.
- To learn how to design C++ classes for code reuse.
- To learn how to design and program Python applications.
- To understand why Python is a useful scripting language for developers.

Contents Delivered in Workshop :

Day-1 : C++ Basics	Day-2 : C++ Programming	Day-3 : Python Basics	Day-4 Python Programming	Day-5 Python Programming
Overview , Environment Setup, Basic Syntax, Comments, Data Types, Variable Types, Variable Scope, Constants/Literals, Modifier Types, Storage Classes, Operators, Loop Types, Decision Making, Functions, Numbers, Arrays, Strings, Pointers, Basic Input/output, Data Structures	Classes & Objects, Inheritance, Files and Streams, Exception Handling, Programming using C++	Overview, Environment Setup, Basic Syntax, Variable Types, Basic Operators, Decision Making, Loops o Numbers, Strings, Lists, Tuples, Dictionary, Functions, Modules, Files I/O, Exceptions	Classes/Objects, Regular Expressions, GUI Programming	Programming with Python, Importance of Python in Artificial Intelligence

Target Audience and Number of Participants attended:

Target Audience : SE E&TC Students.

Number of Participants : 65

Event Photos:



(Group Photo with the Trainer)

IETE Students' Forum Inauguration

Objectives of the Workshop : To make the students aware about IETE membership in the field of Research & Innovation.

Contents Delivered in IETE Students' Forum Inauguration :

Department of electronics and telecommunication engineering at PCCOER inaugurated IETE Students' Forum (ISF) with 62 founder student members on 17th Jan. 2020. The Institution of Electronics and Telecommunication Engineers (IETE) is India's leading recognized professional society devoted to the advancement of Science and Technology in Electronics, Telecommunication, and Computers & IT. Founded in 1953, it serves more than 60,000 members through various centers spread all over India and abroad. The Institution provides leadership in Scientific and Technical areas of direct importance to the national development and economy. Government of India has recognized IETE as a Scientific and Industrial Research Organization (SIRO) and also notified as an educational Institution of national eminence.

The inaugural function started with opening flex of ISF with controller based bot. The Chief Guest of the function was Shri K. R. Shende who is Chairman of IETE Pune Centre and Mr. S. K. Khedkar who is Vice president of IETE and Dr. S. R. Jog Professor and Head, Dept. of E&TC Dr. D. Y. Patil Inst. of Engg. and Technology, Pimpri, Pune Dr.S.R.Jog gave an introductory address about various professional societies and their importance. He motivate to the students participate and increase their membership. Mr. S. K. Khedkar elaborated on the awards given by the forum and their significance. Shri K. R. Shende briefed the students on the various financial supports that the forum offers. Dr. S. R. Jog also delivered a special talk on the topic "Radiations & Hazards-Awareness Session" for the benefit of the students.

Target Audience and Number of Participants attended:

Target Audience : SE, TE and BE E&TC Students.

Number of Participants : 77

Event Photos:



Pandemic Security System for Police using Neural Networks

K.B Wane¹, Dr. Rahul G. Mapari² and Ajin Abraham³

¹Dept of Electronic and Telecommunication, Pimpri Chinchwad College of Engineering and Research, Pune- 412101, India

²Dept of Electronic and Telecommunication, Pimpri Chinchwad College of Engineering and Research, Pune- 412101, India

³Dept of Electronic and Telecommunication, Pimpri Chinchwad College of Engineering and Research, Pune- 412101, India

¹kishore.wane@pccoer.in, ²rahul.mapari@pccoer.in, ³ajinabraham605@gmail.com

Abstract

During this global pandemic named COVID-19 where social distancing is playing a vital role in preventing the spread of this virus among the people. Even after a strong ordinance given by the government to perform a complete lockdown, citizens are being reckless and showing up on the streets. The police are patrolling the streets round the clock to avoid this situation by risking their own life. So to bring ease to their work and also to keep them safe, we have implemented a new system where we will be using a CCTV camera as a medium to detect whether a set of people are gathering in a certain place and inform the map coordinates of that place to the police control station. This will prevent a social gathering of more than 5 people in a place and help us to fight this pandemic by safeguarding the life of people and also the police officers risking their life. For detection, we will be using one of the famous techniques of Convolution Neural Network named YOLO. Through this method, we will be detecting the object (person). Once the detection is done, through certain mathematical calculations we will detect the distance between an object by keeping one object as a reference object. Once the distance between them is less than the threshold set there will be an emergency message sent to the police officials which will contain the coordinates of the location and they can prevent this kind of gathering without actually patrolling on the streets.

Keywords: COVID-19, Pandemic, Neural Network, CCTV, Map Coordinates, Social Distancing

Link for the paper: <https://sersc.org/journals/index.php/IJFGCN/article/view/28563/15880>

International Journal of Bioinformatics Research and Applications > 2020 Vol.16 No.2

Title: Intelligent model for diabetic retinopathy diagnosis: a hybridised approach

Authors: Santosh Nagnath Randive; Ranjan K. Senapati; Amol D. Rahulkar

Addresses: Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur, Andhra Pradesh 522502, India ' Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur, Andhra Pradesh 522502, India ' Department of Electrical and Electronics Engineering, National Institute of Technology, Farmagudi, Ponda, Goa, 403 401, India

Abstract: As diabetic retinopathy (DR) is considered as most common infectious diseases in humans, more researches have been already proposed under various aspects, yet the attainment of accurate DR detection seems to be an issue. This paper intends to develop an innovative contribution by introducing a novel DR detection model, and further the proposed model tells the severity of retinopathy from the given input fundus image. The proposed model comprises of stages such as Segmentation, Feature Extraction and Classification. Here, Active contour model is used for segmentation; also the GLCM and GLRM features are extracted during feature extraction process. Moreover, the classifier called neural network (NN) is used for classification purpose. As a main contribution, the extracted features (feature selection), and weight in NN model are optimally chosen by a new hybridised algorithm called whale with particle swarm optimisation (WP), which compares its performance over other conventional methods for analysis purpose.

Link: <https://www.inderscience.com/info/inarticle.php?artid=108398>

Design and Simulation of Microstrip Multiband Antenna for Wireless Applications

Akhil Adhav¹, Rushikesh Gadhave², Shweta Kakade³, Rahul Parbat⁴,
Triveni Dhamale⁵

^{1, 2, 3, 4, 5}(Dept. of E&TC Engineering, PCCOER, Maharashtra, India)

²Corresponding Author: gadhaverushikesh7@gmail.com

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Abstract: This paper proposes a compact sized dual band microstrip patch antenna with microstrip feed line. The patch of antenna is a rectangular shaped patch which has a circular slot in the patch for multiband operations. This antenna covers frequency bands, centered at 2.4GHz, 3.3GHz, which is useful for the C-band and X-band operations. In this paper, a microstrip patch antenna with compact size of 21x17x1.6 mm in rectangular shape. This antenna is designed on FR4 substrate (Dielectric constant=4.4) of thickness h=1.6mm with ground of size 25x10 mm. The proposed structure were simulated on CADFEKO simulation software. This proposed antenna is suitable for multiband wireless communication systems and mobile equipments.

Keywords: Microstrip antenna, dual polarization, CADFEKO.

<https://pdfs.semanticscholar.org/76f1/e39e8e830eece7e33f20d09bac16c256a291.pdf?ga=2.159239101.686873058.1613129071-1765142752.1611893564>



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Library Automation using Neural Networking and IoT

Ajin Abraham¹, Siddhi Sawant², Shweta Jagtap³, K. B. Wane⁴

^{1, 3, 4}Department of Electronics and Telecommunication, Pimpri Chinchwad College of Engineering and Research, Pune - 412101, India.

Abstract: Efficient automation and accurate object detection have been an important advancement of computer vision systems. With the increase in demand for deep learning techniques, the accuracy for object detection has increased periodically. Our project aims to incorporate the existing technique for object detection to achieve library automation with high accuracy with real-time performance and also interfacing it with the application of IoT. A major challenge in our project is computational hardware, which leads to slow and nonoptimal performance. In this project, we use a completely deep learning-based approach to solve the problem of object detection in an end-to-end fashion and as a result, we can automate the library using the following technique with the help of solid-state relay. The network is trained on 500 images to generate its custom weights using darknet config file. The resulting system is fast and accurate, thus making our system one of the best solutions to modern-day automation.

Keywords: Efficient automation, Deep learning, Library automation, Computational hardware

Link : <https://www.ijraset.com/files/serve.php?FID=30428>



ATM SURVEILLANCE & SECURITY USING IMAGE PROCESSING

Prajakta S. Patil^{*1}, Swamini A. Lohkare^{*2}, Rupali S. Patil^{*3}

Prof. Arti A. Tekade^{*4}, Tushar B. Kute^{*5}

^{*1,2,3}Department of Electronics and Telecommunication Engineering

Savitribai Phule Pune University, India.

^{*4,5}Associate Professor in Pimpri-Chinchwad College of Engineering And Research, Ravet.

Department of Electronics and Telecommunication Engineering, Savitribai Phule Pune University, India.

ABSTRACT

A Automated Teller Machines ATMs are widely used for cash withdrawals. This Machine plays an important role in daily life. Along with the ease in financial services, there exists a high risk of robberies; even CCTV's presence cannot give theft control. Hence we represent this project as it provides an inbuilt security System to the ATM. Also for minimizing the cost of this project, raspberry pi is used. The main target of this system is to give theft control and security to the ATMs and to monitor the system from time to time. The system consists of various sensors for perceiving the suspicious environment in the ATM booth. In our proposed system we use a face-recognizing algorithm to unlock the door. Whenever robbery occurs, Sensors will perceive that suspicious environment and the siren will beep and the door will get locked automatically. Along with this, all owners will get informed through text messages. Hence it will be easier to take necessary action.

KEYWORDS: ATM Security, IOT ATM Surveillance, Automated Teller Machine (ATM), Face detection. Accelerometer, Pi Camera.

Link: <https://irjmets.com/rootaccess/forms/uploads/atm-surveillance-&-security-using-image-processing.pdf>

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Design of Microstrip UWB Antenna for Wireless Application

Pratima Thorat
Dept.of E&TC Engineering
Pimpri Chinchwad College of
Engineering and Research Pune,
Maharashtra, India

Pranjali Wagh
Dept.of E&TC Engineering
Pimpri Chinchwad College of
Engineering and Research Pune,
Maharashtra, India

Pratik Chandgude
Dept.of E&TC Engineering
Pimpri Chinchwad College of
Engineering and Research Pune,
Maharashtra, India

Prof Rahul Prabat
Dept.of E&TC Engineering
Pimpri Chinchwad College of
Engineering and Research Pune,
Maharashtra, India

Abstract— A compact rectangular microstrip antenna for Ultra Wide Band application is designed. The antenna with dimension 40mm x 35mm (L x W) is fabricated on FR-4 epoxy dielectric with relative permittivity of 4.4 and substrate height of 1.6mm is designed and analyzed with different parameter like v_{swr} , gain, return loss, bandwidth etc. The design antenna has the capability of operating between 3.1 GHz to 10.6 GHz. Special configuration of patch antenna with slotted partial ground was designed and optimized using CADFEKO software.

Keywords— Microstrip, UWB, Patch, Results

between 110–200 Mbps within 10 m distance (FCC, 2002) [5].

II. DESIGN, ANALYSIS AND OPTIMIZATION

The proposed rectangular microstrip patch antenna, shown in Fig. 1 is built on FR4 substrate with $\epsilon_r = 4.4$ and $\tan \delta = 0.02$. The antenna dimensions (in mm) are: the substrate has $W_{sub} = 35\text{mm}$, $L_{sub} = 40\text{mm}$ and $h = 1.6\text{mm}$, the patch of $W = 15$, $L = 16$, the feed has width $W = 3\text{mm}$ and length $= 12\text{mm}$ the first patch cut has $W_1 = 10\text{mm}$, $L_1 = 10\text{mm}$ the partial ground

Link: <https://www.ijert.org/research/design-of-microstrip-uwband-antenna-for-wireless-application-IJERTV9IS070400.pdf>

ATM Security System using Iris Recognition by Image Processing

Pratiksha Shetiya
Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Mrunal Deshmukh
Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Meryl Mascarenhas
Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Prof. Dipali Dhake
Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Abstract— Iris recognition is a part of biometric identification which offers a new solution for personal identification, authentication and security by analyzing the random pattern of the iris. The iris recognition system automatically recognizes the identity of a person from a new eye image by comparing it to the human iris patterns stored in an iris template database. The iris template database is created using three steps the first step is segmentation. Hough transform is used to segment the iris region from the eye image of the CASIA database. The noise due to eyelid occlusions, reflections is eliminated in the segmentation stage. The next step is normalization. A technique based on Hough Transform was employed on the iris for creating a dimensionally consistent representation of the iris region. The last step is feature extraction. In this Local Binary Pattern and Gray level Co-occurrence Matrix are used to extract the features. At last Template of the new eye image will be compared with the iris

random patterns which are most unique and stable. Among all the biometric technologies used for human authentication today, it is generally conceded that iris recognition is the most accurate. Out of several biometric techniques such as face recognition, finger recognition, hand and finger geometry; iris recognition has been accepted as best and most accurate biometric techniques because of the stability, uniqueness and non-invasiveness of the iris pattern. The iris region, the part between the pupil and the white sclera provides many minute visible characteristics such as freckles, coronas, stripes, furrows, crypts which are unique for each individual. Even two eyes of same person have different characteristics[8]. Furthermore, the chance of obtaining two people with same characteristics is almost zero that makes the system efficient and reliable when security is concerned.

Link: <https://www.ijert.org/research/atm-security-system-using-iris-recognition-by-image-processing-IJERTV9IS070414.pdf>

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Animatronic Robot with Telepresence Vision

Dhananjay Itkal¹, Kedar Deshmukh², Rudrapratsingh Bhatti³, Prof. Dipali Dhake⁴
^{1,2,3}Student, E&TC, Pimpri Chinchwad college of engineering and research, Ravet pune
⁴Assistant Professor, E&TC, Pimpri Chinchwad college of engineering and research, Ravet pune

Abstract - We have been using tele operated robots in various industrial and military applications to reduce human efforts and avoiding endangering human life. Nearly all operating robots are controlled using a pc, keyboard or joystick and image or video captured with camera is seen on a monitor. Due to this tradition approach there is a gap between human operator wants to do and what robots do in actual. Robot can't perform exact action human want them to perform due to less interactive input system. Which reduce accuracy of the system and hence reducing the capabilities of the robot. Our project is to work on a new approach with hardware and software system which will bridge this gap. Animatronics is a field which uses anatomy, mechatronics, robotics to replicate human (or any other living subject) motion. [6],[7] Telepresence is a set of technologies which allow a person to feel as if he/she were present, to give the appearance of being present, or to

Index Terms - Animatronics, Joystick, Robot, Tele operated, Virtual Reality.

I.INTRODUCTION

Every day our security and rescue force risk their lives in various operations such boom diffusion, information gathering, and response to surprise attack, ambush and many more. And many times they have to work in dangerous environment conditions. A solution to this could be wide use of AI powered robots. But still AI technology is in development stage and robot still can't make complex and critical decisions. So, for now we need a robot who works in supervision of a human, but problem is degree of control on that robot and response of robot to human command. So, our project aims to develop a robotic vehicle for

Link: http://ijirt.org/master/publishedpaper/IJIRT150160_PAPER.pdf

Underwater Image and Signal Processing

Neha Chavan

Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Sanket Darur

Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Chinmayee Chitnis

Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Rupali Kawade

Electronics and Telecommunication Engineering
P.C.C.O.E.R, Ravet
Pune, India

Abstract— This paper proposes study of underwater image processing as well as signal processing. It is widely used in underwater applications like, underwater object detection, submarine communication, to observe the sea floor which is included in autonomous underwater vehicles (AUVs), unmanned underwater vehicles (UUVs), and in situ ocean sensor networks. This project is concerned with various techniques of underwater image and signal processing. We present an overview of various underwater image-processing approaches, such as underwater image de-scattering underwater image color restoration, and underwater image quality

II. METHODOLOGY

In this paper we have discussed the methods to achieve the Underwater Image and signal processing. For Image processing there are many methods used in practice, out of which image processing using MATLAB is used on a large scale. For underwater Images we use an Endoscopic Camera. Due to this there is no need for external light source with the camera. Once the images are captured they are sent through a GUI for Image processing. The GUI uses an algorithm which contains different MATLAB functions for image processing. After processing of Images through GUI we get a series of enhanced images from which we can choose the required result.

Link: <https://www.ijert.org/research/underwater-image-and-signal-processing-IJERTV9IS070450.pdf>

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Malaria Parasite Detection Using Deep Learning : (Beneficial to humankind)

Publisher: IEEE

Cite This

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Divyansh Shah ; Khushbu Kawale ; Masumi Shah ; Santosh Randive ; Rahul Mapari All Authors

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Full
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Abstract

Document Sections

- I. Introduction
- II. RELATED WORK
- III. WORKING
- IV. RESULT
- V. CONCLUSION

Authors

Figures

Abstract:

Malaria is one of the deadliest diseases across the globe. This is caused by the bite of female Anopheles mosquito that transmits the Plasmodium parasites. Some current malaria detection techniques include manual microscopic examination and RDT. These approaches are vulnerable to human mistakes. Early detection of malaria can help in reducing the death rates across the globe. Deep Learning can emerge as a highly beneficial solution in the diagnosis of disease. This model gives a faster and cheaper method for detecting Plasmodium parasites. The custom convolutional neural network is primarily designed to distinguish between healthy and infected blood samples. The proposed model consists of three convolutional layers and fully connected layers each. The neural network presented is a cascade of several convolutional layers having multiple filters present in layers, which yields the exceptionally good accuracy as per the available resources. The model is trained and later several blood sample images are fed to test the accuracy of the designed system. The CNN classifier has performed exceptionally well under limited computational resources giving an accuracy of 95%. Blood smear sample analysis can also aid in the detection of certain other illnesses and the application of deep learning models will help in the greater good of humankind.

Link: <https://ieeexplore.ieee.org/document/9121073>

Pandemic Security System for Police using Neural Networks

K.B Wane¹, Dr. Rahul G. Mapari² and Ajin Abraham³

¹Dept of Electronic and Telecommunication, Pimpri Chinchwad College of Engineering and Research, Pune- 412101, India

² Dept of Electronic and Telecommunication, Pimpri Chinchwad College of Engineering and Research, Pune- 412101, India

³ Dept of Electronic and Telecommunication, Pimpri Chinchwad College of Engineering and Research, Pune- 412101, India

¹kishore.wane@pccoer.in, ²rahul.mapari@pccoer.in, ³ajinabraham605@gmail.com

Abstract

During this global pandemic named COVID-19 where social distancing is playing a vital role in preventing the spread of this virus among the people. Even after a strong ordinance given by the government to perform a complete lockdown, citizens are being reckless and showing up on the streets. The police are patrolling the streets round the clock to avoid this situation by risking their own life. So to bring ease to their work and also to keep them safe, we have implemented a new system where we will be using a CCTV camera as a medium to detect whether a set of people are gathering in a certain place and inform the map coordinates of that place to the police control station. This will prevent a social gathering of more than 5 people in a place and help us to fight this pandemic by safeguarding the life of people and also the police officers risking their life. For detection, we will be using one the famous technique of Convolution Neural Networking named YOLO. Through this method, we will be detecting the object(person). Once the detection is done, through certain mathematical calculations we will detect the distance between an object by keeping one object as a reference object. Once the distance between them

Link: <https://sersc.org/journals/index.php/IJFGCN/article/view/28563/15880>

Students Corner



Samruddhi Jangam
BE E&TC



Patil Soljwal Shaligram
BE E&TC



Mrunal Deshmukh
BE E&TC

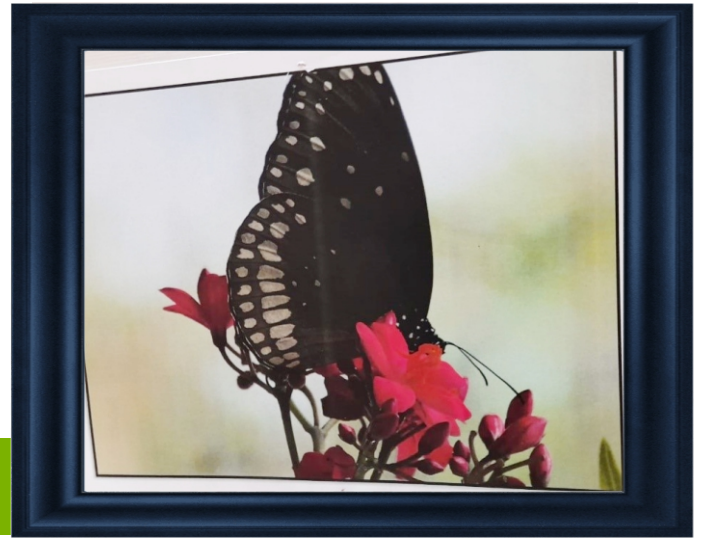


Patil Soljwal Shaligram
BE E&TC

Students Corner



Ajinkya Gaikwad
TE E&TC



Suyash Chaudhari
SE E&TC

Testimonials



Aishwarya Awsarkar
SE E&TC (2018-19)

The dedicated management team and enthusiastic faculty have always kept the student's interests in mind and created an environment where learning is fun, intensive and industry oriented. The college environment provides us a platform where we can develop our skills.



Pranita More
SE E&TC (2018-2019)

I thank my ECE department and its faculty members for encouraging me to think globally and spread my wings to take off for the land of rising Sun. My experience at PCCOE&R is great and memorable. The teachers and mentors are really helpful and helped me to improve my academic and interpersonal skills.

Alumni Feedback

I work as a Software Engineer in Bombardier Transportation. This is though the 3rd company I am selected in . I was not a bright highlight in studies but when it was about extracurricular activity , leadership activities I never missed a chance ! Although I never had backlogs (PS: Because of Our Helpful and supportive teachers. They will give you a right pathway for your future.) Though i enjoyed my engineering life to the fullest!! A just short note for juniors: Give your 100% when it comes for placement preparation time, it is like a golden hour, Make the most out of it. Dont think will do it later because that is never gonna happen !! Trust your instincts a lot and Believe in good, do good and good will happen to you certainly !! Enjoy this 4 years now to the fullest, also the summer vaccation you have now, You gonna miss the vaccation and my words later.

Laxmi Sonimindia

Software Engineer, Bombardier Transportation
(2018-2019 Batch Student)