FR. CONCEICAO RODRIGUES INSTITUTE OF TECHNOLOGY, VASHI

SILICON VALLEY

BANDWIDTH 2019
VOL-22

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATIONS

COVER PAGE DESIGNED BY:
CHINMAY THAKRE

SEM 7 Industrial Visit

SEM 5 Industrial Visit

SEM 3 Class Photo

HOD'S MESSAGE

Develop a passion for learning. If you do, you will never cease to grow" by Anthony J. D'Angelo.

Dear Readers,

Greetings on behalf of Department of Electronics and Telecommunication Engineering!

It gives me a great pleasure to release another issue of the Department Newsletter Bandwidth in the month of August-2019. This newsletter gives us the opportunity to update us about the recent staff and student achievements, newly introduced policies, feedback from the alumni, etc. for the academic year 2018-19.

First of all, please join me in congratulating the Department for the following achievements:

1. Our Department is re-accredited by the National Board of Accreditation, New Delhi, and this accreditation is valid till 30-06-2021.
2. Dr. Pranali Choudhari has successfully completed her Ph. D. from VJTI, Mumbai, in November-2018.
3. Our Department has received AICTE grant worth Rs. 15.0 lacs for purchasing Vector Network Analyzer.

I am happy to share with you that this year apart from IETE-ETSA and SEED councils, we had introduced one more council called Alumni Committee with the objectives to establish linkage with all the alumni, to arrange alumni activities, to explore their contribution to the department in various ways, etc.

HOD'S MESSAGE

I would like to sincerely request all the students to get actively involved in teaching-learning process being followed by the department and secure above 6.75 CGPA in all the semester examinations without any ATKT so that you become "eligible" for placement in the final year. Also, please actively get involved in all the department and institute level co-curricular activities organized under various platforms which will be useful to you for enhancing your technical skills and overall personality.

I sincerely request students to introspect on following front: (a) Am I sincerely involved in regular teaching-learning process? (b) Do I have clarity regarding my short-term and long-term objectives? (c) Based on my current academic performance am I eligible for the placement? (d) Am I actively involved in carrying out course projects, participation in co- and extra-curricular activities at National level, etc? If you introspect and take corrective action, then we are confident you will ensure success in your professional life at every stage of your career.

Wish you all the best!

Dr. Milind Shah

Professor, Department of Electronics and Telecommunication Engineering.

BANDWITH 2019 ORGANISING COMMITTEE

PATRONS

REV. FR. S. ALMEIDA	REGIONAL SUPERIOR, M.D., ATEC, VASHI
REV. FR. L. DIAS	PROCURATOR, ATEC, VASHI
DR. S.M.KHOT	PRINCIPAL, FR. C.R.I.T, VASHI

DEPARTMENT REPRESENTATION

DR. MILIND SHAH	PROFESSOR AND HEAD, EXTC DEPARTMENT

MAGAZINE CO-ORDINATOR

MRS. PUSHPA U.S.	ASST. PROFESSOR, EXTC DEPARTMENT

EDITING TEAM

DISHA DEEPU

MERYL JACOB

NEHA V.B.

VARTIKA SINGH

Department Vision

To create professionally competent, research oriented, disciplined, socially and environmentally sensitive Electronics and Telecommunication engineers.

Department Mission

1. To achieve academic excellence by imparting quality education and training in science, electronics, and telecommunication engineering fields.
2. To create an environment for overall personal development of the students including creative and innovative thinking, team work, professional ethics, and improved communication skills.
3. To create awareness among the students about their social, environmental and ethical responsibilities to make the world a better place.

Program Educational Objectives (PEO)

Graduates of the program...

1. Will demonstrate the core competency in electronics telecommunication, and allied fields.
2. Will have successful professional careers at the national and international levels.
3. Will be competent and capable of pursuing lifelong learning in technical and allied fields.
4. Will be responsible citizen of the society and will adhere to professional ethical practices.

Program Specific Outcomes (PSO)

1. Apply knowledge in signal processing, communication theory, and microwave engineering for analysis of telecommunication network for services such as voice, data, image & video transport.
2. Analyse, design, and synthesize electronic components based circuits, embedded systems - related hardware/software, and VLSI circuits.

OUR FACULTY

Professor

Dr. Milind Shah
(HOD)
Dr. RPRC Aiyar
Dr. Binoy Goswami

ASSOCIATE PROFESSORS

Ms. Sadhana Pai
Ms. Megha Kolhekar

Assistant Professors

Ms. Savitha Upadhya
Ms. Pushpa U.S.
Mr. Ashish Harsola
Mr. Yogesh Chandurkar
Ms. Anita Jadhav
Ms. Sreedevi Nair
Ms. Sneha Revankar
Ms. Nishan Patnaik

Dr. Pranali Choudhari
Ms. Smita Chopde
Ms. Nilashree Wankhede
Ms. Smita Hande
Ms. Manita Rajput
Ms. Amruta Pabarekar
Mr. Jatin Desai

Non Teaching Staff

Mr. Vijay S
Mr. Sameer J
Mr. Prashant M

Ms. Sreekala N
Mr. Santosh M

IETE-ETSA COUNCIL 2019

Faculty Incharge: Ms. Sneha Revankar

IETE | ETSA

CHAIRPERSON

CHINMAY THAKRE | RUTUJA KOTHURKAR

VICE-CHAIRPERSON

HRITIK MEHROTRA | APARNA SHRIVASTAV

SECRETARY

SUDHANSHU KURLE | VAIBHAV DUBEY

JOINT SECRETARY

SHRIDHAR BONDA | MERYL JACOB

TREASURER

TANVI DESAI | BALARAM MOHANTY

MEMBERS

IETE	ETSA
NEHA NERURKAR	CYNTHIA PATIL
SAUMITRA JAGDALE	DISHA DEEPU
KALICHARAN JALUI	CHINMAY PATIL
JACOB PANICKER	KEDAR KULKARNI

CO-OPTED MEMBERS

IETE	ETSA
AKANKSHA CHANDAWAR	DATTAJI GOSAVI
NEHA V.B.	VARTIKA SINGH

ALUMINI COUNCIL

Faculty Incharge: Ms. Smita Hande

CHAIRPERSON

SAUMITRA JAGDALE   CYNTHIA PATIL

VICE-CHAIRPERSON	ANASHWARA PILLAI
SECRETARY	ABHISHEK JADHAV
JOINT SECRETARY	REBA FERNANDES
TREASURER	PRANAV DEEPAK
HEAD OF CURATION	GEO ROCKY
DOCUMENTATION HEAD	SIDDHIKA PATIL

PLACEMENT CO-ORDINATORS

Faculty Incharge: Mr. Jatin Desai

FOURTH YEAR

SWAPNIL MANE   RUTUJA KADAM

TARANPAL SINGH PANESAR   AYUSHI SUBASH CHANDER

THIRD YEAR

VAISHNAVI EACHE   TRESA BIJU   MAHIMA BECK

SECOND YEAR

ADITI AMBADKAR   ARPITA KUNTAGERI

CHAIRPERSON: SHWETHA SALIMATH
SECRETARY: SELVIN FURTADO
TREASURER: AVELINO PEREIRA
DOCUMENTATION HEAD: SAURABH GAWAS

MEMBERS:
VISHRUTH BHAT
SUMEDH BANGAR
TRIPARNA CHATERJEE
AISHWARYA BHATT
VAISHNAVI GAIKWAD

ADVISORY MEMBERS:
PRACHI YERAM
MAITREYEE LIKHITE
JAYA PRASAD
SIDDHESH GAWLI
VAIBHAV TIWARI

STAFF ACHIEVMENTS

R&D Publications in EXTC Department

Sr No	Name	International/ Online Journals	International Conferences	National Conference	Total
1.)	Dr. Milind Shah	16	15	12	43
2.)	Ms. Sadhana Pai	4	10	8	22
3.)	Ms. Megha Kolhekar	7	7	9	21
4.)	Ms. Savitha Upadhya	15	9	3	27
5.)	Dr. Pranali Choudhari	10	11	2	23
6.)	Ms. Pushpa U. S.	5	6	3	14
7.)	Ms. Smita Chopde	8	2	6	16
8.)	Mr. Ashish Harsola	6	13	2	21
9)	Ms. Nilashree Wankhede	9	7	7	23
10.)	Mr. Yogesh Chandurkar	5	6	4	15
11.)	Ms. Smita Hande	4	4	3	11
12.)	Ms. Anita Jadhav	5	6	5	16
13.)	Ms. Manita Rajput	3	7	5	15

STAFF ACHIEVMENTS

R&D Publications in EXTC Department

Sr No	Name	International/ Online Journals	International Conferences	National Conference	Total
14.)	Ms. Sneha Revankar	2	10	5	17
15.)	Ms. Sreedevi Nair	4	4	3	11
16.)	Ms. Amruta Mhatre	3	3	3	9
17.)	Mr. Jatin Desai	4	4	3	11

TOPPERS' LIST (2019)

SEMESTER 4

Shwetha Salimath
SGPA- 10

Apurva Narvekar
SGPA- 10

Sumedh Bangar
SGPA- 9.92

Cynthia Patil
SGPA- 9.84

Vaishnavi Choudhari
SGPA- 9.84

TOPPERS' LIST (2019)

SEMESTER 6

Vaibav Tiwari
SGPA- 9.68

Siddhesh Gawali
SGPA- 9.68

Jaya Prasad
SGPA- 9.20

Maitreyee Likhite
SGPA- 9.20

Humera Khan
SGPA- 9.04

TOPPERS' LIST (2019)

SEMESTER 8

VALLIYAKKARA JETIN
CGPI-9.60

PATIL VAIBHAVI
CGPI- 9.49

YADAV NAMBINAYAGAN
CGPI-9.45

Oscillations 2018

- Oscillations is an annual 2-day technical fest organised by the IETE-ETSA council for the 2nd and 3rd year students of the EXTC department. The first day kicked off with LOGIC PLAY and VISUAL QUIZ in the morning slot.
- LOGIC PLAY involves simplification of Boolean algebra to get the final equation and then implementation of the said equation. Sounds straightforward, but it was anything but. VISUAL QUIZ is a game of technical knowledge with a healthy dose of memory techniques mixed into the fold to make it that much more challenging!
- The afternoon session consisted of an all new event for OSCILLATIONS called CRYPTIC and the fan favourite JUNKYARD.
- CRYPTIC is a whole new take on quizzing in which the participants choose which question of which topic they wish to answer, and points are awarded according to difficulty of the question.
- JUNKYARD returned for another year of "frugal" engineering, creativity and amalgamation of ideas and thought unlike any we have ever seen before.
- The second day consisted of the highlight event, called JUDGEMENT DAY. Mock group discussions, job interviews etc were conducted for all the students of the 2nd and 3rd year to choose a final "winner" or the ideal candidate.
- Finally, to round up the day on a lighter note, there was a seminar on EAGLE simulation software conducted by Mr Jatin Desai designed to ease the burden of having to learn EAGLE from scratch in the higher semesters for all our project needs.

Extacy 2019

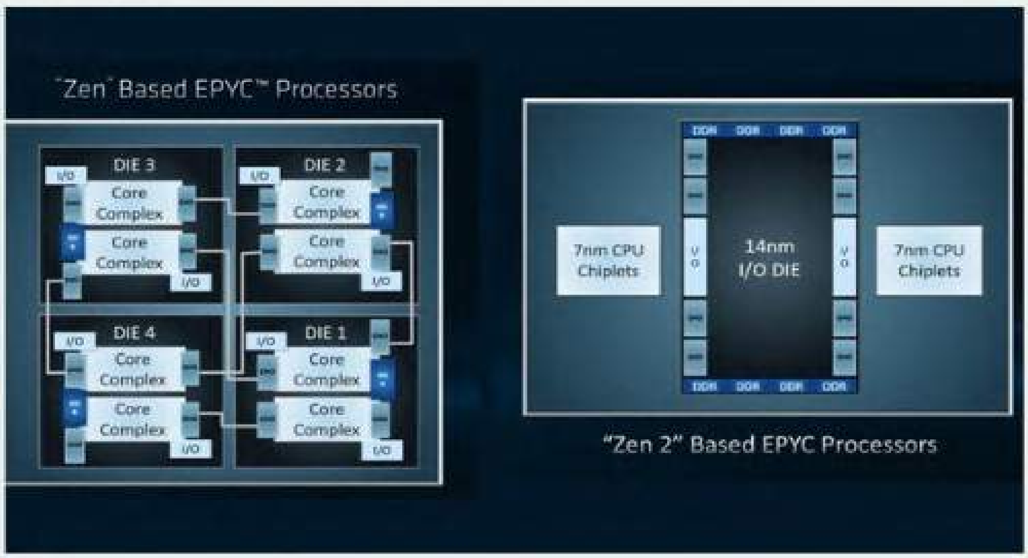
- Our flagship departmental festival, EXTACY 2019 was held on the 1st and 2nd of February 2019.
- The first day of EXTACY kicked off with the robo events. In the morning slot we had ROBO Turbo and ROBO Zone running parallelly.
- ROBO Soccer kicked off with great anticipation as probably one of the most anticipated events of the day.
- At the same time, at the other end of the foyer, ROBO Sumo was shaping up to be an equally competitive event. With this, the events of the first day of EXTACY came to a close
- On the second day, we had scheduled an event called "Mind Boggler" and "Green Newton"
- The winners of 'Robo Turbo' were Aadesh and his group form EXTC SEM 6 while the runners up were Sumedh and his group from EXTC SEM 4.
- Eventually, Jaya and her group from EXTC SEM 6 were declared the winners while Ashly and her group from EXTC SEM 6 were the runners up in the 'Robo Zone'.
- Aadesh and his group from EXTC SEM 6 were declared the winners with Nobin and his group from EXTC SEM 6 the runners ups in the 'Robo Soccer' event.
- Siddhesh and his group from EXTC SEM 6 were declared the winners in 'Robo Sumo'. In second place, we had a tie with Prachi and her group from EXTC SEM 6 and Suraj and his group from EXTC SEM 4 sharing the podium.
- In 'Mind Boggler',Merin's team from EXTC SEM 6 were the winners with a tie between Vaibhav's team from EXTC SEM 4 and Aadesh's team from EXTC SEM 6 in second place.

STUDENT ARTICLES

Let AMD's ZEN 2 be your new ZEN

- Dattaji Gosavi (SEM 5)

Advanced Micro Devices(AMD) created a lot buzz about its 7nm products. Thenanometer is the size of transistors that goes into the chip. The smaller the transistor better is the power consumption efficiency.
At Computex 2019 AMD unveiled its next generation Ryzen 3000 series desktop CPU's built on Zen 2 architecture , which are built on TSMC 7 nm node.



Due to the 7 nm architecture the price of AMD's processors are similar to Intel latest gen processors with Ryzen processors giving better prize to performance ratio.The number of cores offered by Ryzen 9 3900X is 12 (24 threads) whereas, Intel Core i9 offers 8 cores. One of the other upgrade in Zen 2 is the implementation of PCIe 4.0, which doubles the bandwidth from 32 GBps(previous generation) to 64 GBps. The level three Cache(which helps in extremely fast data access) is double that of the previous generation. AMD already has a 16-core desktop chip coming in September, bit it may not scale as well as its Thread-ripper equivalent due to limited memory bandwidth.

The Ryzen 9 3900X costs $499, whereas the Intel 12 core processor costs $1199. As pictured above, the 39000X comes with AMD's Zen 2 micro-architecture which is spread across two small 7nm eight-core compute chiplets tied together with the Infinity Fabric interconnect via a larger 12nm.

I/O die (IOD). Each small 3900X compute chiplet, referred as a CCD (Core Chiplet Die), comes with eight physical cores spread across two four-core Core Complexes (CCXes). Each CCX has 16MB of shared L3 cache, totaling 32MB of L3 cache per CCD, and 64MB of total cache for the entire chip. AMD disables two cores per CCD to create the 12-core 3900X. Each 7nm CCD measures ~74mm2 and has 3.9 billion transistors, while the 12nm IOD is ~125mm2 and has 2.09 billion transistors. That means the 3900X comes with ~273mm2 of silicon that sports ~9.89 billion transistors.

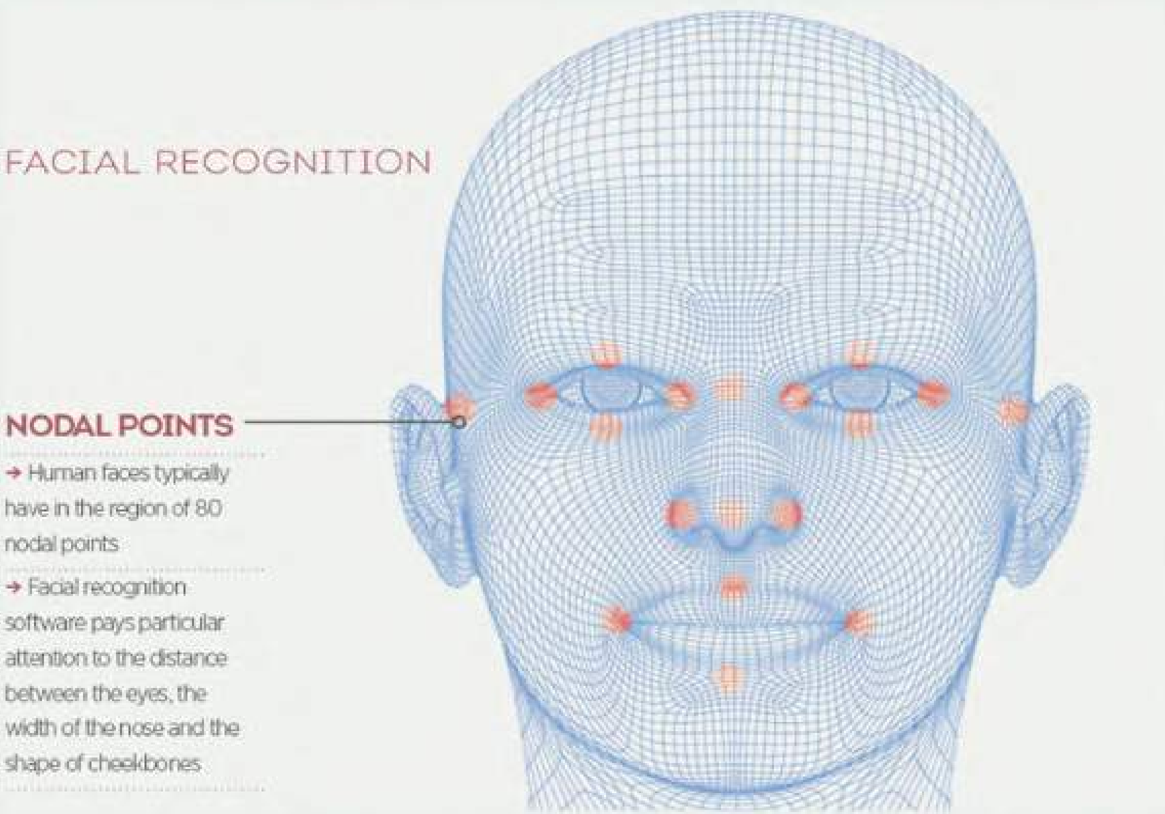
Ryzen 3000 chips support dual-channel DDR4-3200 while the previous-gen's support is DDR4-2966. That should boost performance significantly because the Zen 2 micro-architecture, benefits heavily from increased memory performance (particularly in gaming).AMD supports up to 128 GB RAM and enables ECC support.

A MD's new Navi GPU's Radeon(Based on RDNA) 5000 series expected to deliver a 25% better performance per clock and a 50% faster performance per watt compared to its older Graphics Core. AMD showed its Radeon RX 5700 outperforming NVIDIA's 12 nm RTX 2070 in some games.

Facial Recognition

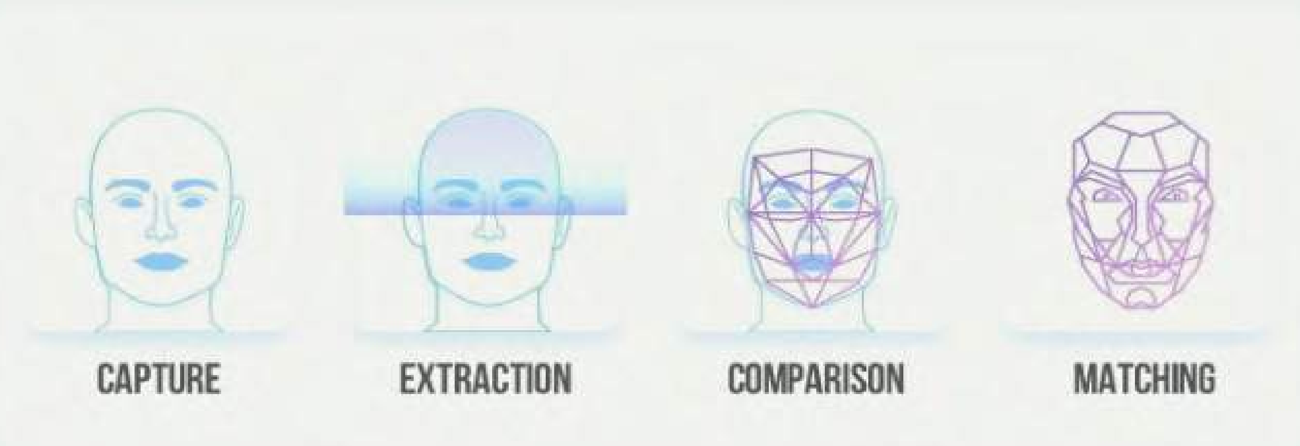
- Saumitra Jagdale (SEM 5)

This technology identifies 80 nodal points on a human face. In this context, nodal points are endpoints used to measure variables of a person's face, such as the length or width of the nose, the depth of the eye sockets and the shape of the cheekbones. The system works by capturing data for nodal points on a digital image of an individual's face and storing the resulting data as a face-print. The face-print is then used as a basis for comparison with data captured from faces in an image or video.



HOW DOES IT WORK?

- CAPTURE
- EXTRACTION
- COMPARISON
- MATCHING



Face recognition technology has come a long way in the last twenty years. Today, machines are able to automatically verify identity information for secure transactions, for surveillance and security tasks, and for access control to buildings etc. These applications usually work in controlled environments and recognition algorithms can take advantage of the environmental constraints to obtain high recognition accuracy. However, next generation face recognition systems are going to have widespread application in smart environments, where computers and machines are more like helpful assistants.

Brain Teasers

1.) Many have heard it, but nobody has ever seen it. It will not speak back until spoken to. What is it?

2.) What is black when you buy it, red when you use
it and gray when you throw it away?

3.)What can eat a lot of iron without getting sick?

4.)When I take five and add six, I get eleven, but when I take six and add seven, I get one. What am I?

5.)A man is in his car. He sees three doors; a golden one, a diamond one and a silver one. Which door does he go through first?

Answers

1.)Echo
2.)Charcoal
3.)Rust
4.)A Clock
5.)His car door

PROJECT ABSTRACTS 2019-20

REAL TIME DETECTION OF BRVO

Jaya Krishna Prasad
Roy Reema Anne
Chriso Christudhas
Abin Sam
Kora Monish Mohan

Under the guidance of:
Dr. Pranali Chaudhari

The problem of sudden vision loss arises mainly because of Diabetic Retinopathy and Occlusion. Diabetic Retinopathy is seen in diabetic patients. Occlusion is basically obstruction in blood flow through a vein. Branch retinal vein occlusion (BRVO) is most commonly seen. The hardware will be designed to capture retinal images. Data received in the form of images is fed to a system consisting of artificial neural networks which would process the data and would likewise differentiate between a normal eye and an occluded one. This project would reduce the involvement of humans significantly and would need a doctor's opinion only for verification.

GARBAGE MONITORING AND WASTE SEGREGATION SYSTEM

Khan Humera
Shendge Tejashree Ashok
Khan Mohammadrashid Moazzam
Patil Pankaj Pandurang
Deshmukh Swaraj Anand

Under the guidance of:
Ms. Amruta Pabarekar
Co-guide: Ms. Sadhana Pai

Abstract: Efficient waste collection is the need of the hour as increase in population has led to an increase in the amount of waste generated every year. Proper segregation and management of the waste is important to curb the spreading of diseases. Moreover, the workers are also prone to various diseases and infections. In metropolitan cities, like Mumbai, large amount of waste is collected daily and not properly segregated. This would help in contributing to some extend in Swachh Survekshan 2019.

An efficient method is garbage monitoring and waste segregation system to detect the state of the garbage bins and send trucks to only those areas where the bins are full, ensuring that the truck's fuel is not wasted and the garbage is collected on time. The location of the bin that is fully loaded is taken using GSM module. The waste segregation involves separation of biodegradable and non-biodegradable materials. It is done using sensors and applying machine learning

FREIGHT COST CALCULATOR USING MACHINE LEARNING AND VEHICLE MONITERING SYSTEM

Ayushi Subhas Chander
R Kaushik
Bhalekar Anurag Sanjay
Arava Kevin Soloman
Under the guidance of:
Mr. Jatin Desai

In this project, we will design and implement internet application where in the customer will feed information such as- the type of goods he wants to transport, source, destination and type of vehicle required (body type) ...etc. After we acquire this information, it is fed as a source to freight cost calculator which will work on machine learning algorithm wherein, we will be estimating the cost of the trip by taking into consideration parameters like fuel cost, distance, mileage to be covered, seasonality, vehicle body type so on.

We are also fabricating and collaborating a vehicle monitoring system which will be able to track the vehicle location, detect crash of the vehicle, its halt, speed and other parameters which will be used to display it with live updates on the map. Also, the driver will be rated based on his driving which will be considered in future freight cost calculation.

SPATIAL ANALYSIS IN 3D SPACE USING 2D IMAGES

Likhite Maitreyee Nilesh
Annie Benjamin
Kanase Pradhumn Pramod
Noronha Noella Nelson
Under the guidance of:
Ms.Anita Jadhav

This project is an extension of the previously published works on virtual 3d models of a panoramic image of a one room which is input to the neural network, by specifying the positions, orientations and heights of walls, relative to the camera center. It aims to build a software which would incorporate 2D images of rooms and build a 3D model of it. Softwares intended to be used are Linux, NVIDIA GPU + CUDA CuDNN, Torch7, and Matlab. The application would be in gaining the remote access of the 3D model of a room being designed by an interior designer.

SMART WATER AND ELECTRICITY MANAGEMENT USING LORA TECHNOLOGY

Yeram Prachi Adinath
Elizabeth Abraham
Patil Vinay Satish
Gonsalvez Nobin Raju
Dsouza Clinton MIchael
Under the guidance of:
Ms. Sneha Revankar

The objective of this project is to implement the newly emerging LoRa (Long Range) technology in IoT based applications. LoRa Technology's low power consumption and ability to penetrate dense building materials make it an ideal platform for IoT-connected smart home and building devices. Sensors in smart home can optimize utility usage and improve the safety and convenience of everyday living. Due to the wastage of scarce resources such as water and electricity it has become essential to make effective use of the same.

So smart systems need to be made and implemented to curb the wastages.The aim of the project is to monitor and control the flow of water and electricity using various sensors and traverse the sensor data via LoRa technology. The basic blocks used in the process can be sensors (water flow/amount detecting sensor etc) , LoRa module, control unit, etc It transmits the data collected to a cloud based database. According to the database results, a controlled amount of water will be supplied to the users.

SECURED RAILWAY SYSTEM

Shete Omkar Shankar
Panesar Taranpal Singh
Hande Shubham Shankar
Kalaskar Rohan Pravin
Thekkumpeedika Agnel Francis

Under the guidance of:
Ms. Pushpa U S

In an over populated city like Mumbai the most used mode of transport is railways, but on the other hand the accidents occurring due to railway has increased gradually. In a recent survey it was found that 18,423 people died and 18,847 people were injured in suburban train-related accidents between January 2013 to August 2018.In order to improve the safety of Indian railways the proposed system will be able to identify the presence of humans, cars, animals on the railway track. For this system Arduino will be used as controller and a camera will be used for capturing Realtime video.

Detection and image processing techniques such as optical flow or background subtraction will be used to detect the obstacle and in order to perform transmission of output RF transmitter and receiver will be used. Some projects are done to decrease the rate of accidents by using crack detection techniques but in our system the motorman will be able to detect the presence of obstacle on track hundreds of meters before so accidents can be minimized.

INFORMATION EXTRACTION FROM CHEQUES

Dhanawade Aniket Suresh
Rao Aadesh Dinesh
Drode Abhishek Dilip
Gifty Johnson
Noel Sundar Rao Manukonda
Under the guidance of:
Ms. Savitha U

Among the various modes of payment and settlement, still a large number of people prefer using cheques for transactions. This project is based on segregating features of a scanned cheques, presenting it in a proper tabular format and then perform signature verification. Text data present in cheques contain useful information. However, extraction of this information involves detection of different features, cropping of image according to the features, enhancement and recognition of the text from a given image using optical character recognition. However, variations of text due to differences in size, style, orientation, and alignment make the problem of automatic text extraction extremely challenging. Verification of signature using feature extraction is proposed in this project.

FULLY HOMOMORPHIC ENCRYPTION-DECRYPTION FOR APPLICATION IN NEURAL NETWORKS

Tiwari Vaibhav Yogesh
Shelar Vaidehi Vilas
Raina Ayushi
Pandey Ashish Rakesh
Thomas Rijin Raju
Under the guidance of:
Ms. Megha Kolhekar

Homomorphic encryption is an algrebraic method of cloud secure computing.We would like to investigate security of these algorithms for image encryption in clouds.

SMART EXAM CELL

Sreya THomas
Merin Jose
Ashly Sara Roy
Dalwi Shwetha Sukhadeo
Beena Muthumani Jayasudha

Under the guidance of:
Ms. Manita Rajput

Zigbee based information transmission system from the classroom to the exam cell. And combined to that is a rfid based student information system where in all the details of the student gets recorded.

CROP INFORMATION AND MONITORING SYSTEM

Gawali Siddhesh Rajendra
Muvvala Venkata Akhil
Acharya Abhijit Mohan
Dhopavkar Ruhi Rajesh
Kadam Rutuja Pandurang

Under the guidance of:
Mr. Ashish Harsola

In India, agriculture is the major sector involving as large as 50% of the population but still has a low share in GDP of the country, only about 17.1%. In today's advanced technological era, almost every sector has been modernised to maximise efficiency and yield except agriculture in India. Recently several attempts has been made to modernise this sector but hasn't reached the proper audience effectively with minimal market penetration. Our project aims to fill this gap with a notion of supporting the government's aim to double the farmer's income by 2020.

Our project involves the development of two processes; the first uses image processing on python which would identify the type of disease of the plant via the leaf photograph and then suggest remedies based on already available authentic sources. Initially, the system will be developed only for one crop and one alternate local language which after scrutinizing can be expanded.

The second process involves developing a mobile application and website along with the backend. The farmer will be able to see various existing government policies, essential details of various crops and also get a suggestion of alternate crops based on current crop rates. The farmer can chat with agriculture experts and other farmers using the chat service on Firebase and Django backend and get weather updates all under one roof.

THOUGHT TO TEXT CONVERSION USING DEEP LEARNING

Swami Omkar Umesh
Mane Swapnil Tukaram
Nath Tiasha Debaprasad
Shobin Thomas
Joseph Tijo
Under the guidance of:
Dr. Pranali C
Co Guide: Smita C

The aim is to design a very simplified model of the human brain that learn tasks by mimicking the behaviour of brain patterns. An EEG (Electroencephalography) is the recording of the electrical activity of the brain from the scalp. The recorded waveforms reflect the cortical electrical activity. The intensity of this signal is quite small, measured in microvolts (uv). This signal will be used to detect the electrical activity of the brain. There are three types of waves, namely- Alpha, Beta, Theta and Delta. This EEG signal will be acquired by placing the electrode at frontal lobe position which is then sampled and amplified using Original Muse.

We will be using MATLAB or Python (open source libraries) for the classification of raw EEG signal. This raw EEG signal denoting a band of thought impulse is fed to deep learning framework by threshold sampling. The network will be trained by supervised learning algorithm and simultaneously made to learn robust high level feature from the processed EEG signal. We will be testing our neural network with few predefined words under numerous test conditions.

DETECTION AND CLASSIFICATION OF SPEECH DISORDERS

Singh Ashutoh Ramji
Sonawane Kalpesh Prashant
Kittur Abhishek Mahesh
Divya Bhole

Under the guidance of:
Ms. Savitha U

Speech disorder is a type of communication disorder that affects a person's ability to produce speech sounds. The detection and classification of speech disorders such as Dysarthria, Apraxia and Stuttering can be done by looking for the dissimilarities between the speech features of a normal healthy person and the abnormal one. The steps involved are pre-processing, feature extraction and classification using ANN (Artificial Neural Networks). These algorithms will be implemented using Python.

PAIN MANAGEMENT THERAPY FOR RESTLESS LEG SYNDROME

Alishnivetha Joseph
Lidiya Dominic
Nadar Jesline Shilba M
Jobin Samson
Gosavi Rajan Dineesh

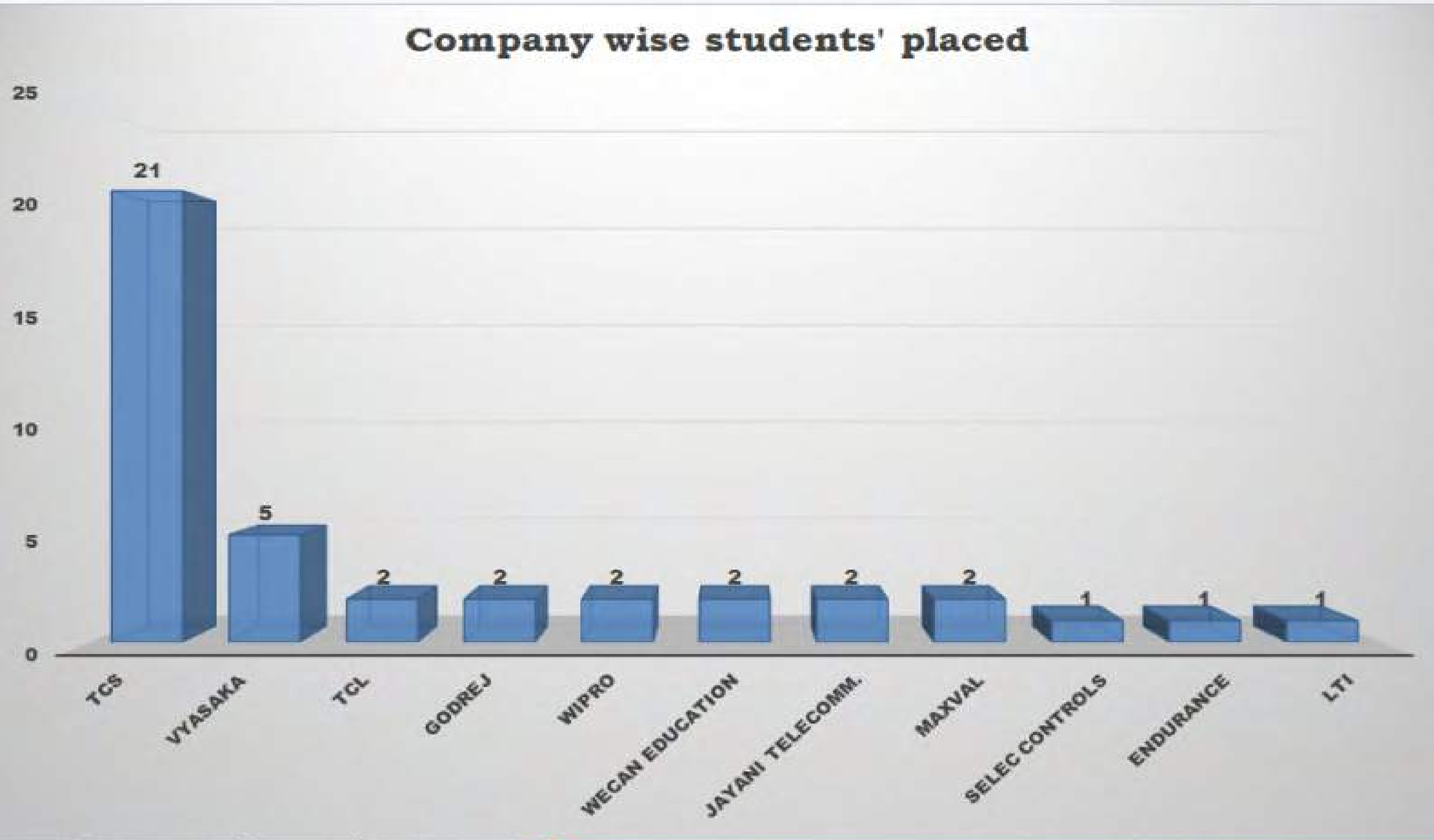
Under the guidance of:
Mr. Yogesh Chandurkar

Restless leg syndrome, also known as Willis-Ekdom disease, is a common condition of the nervous system that causes an overwhelming irresistible urge to move the legs. The ever growing technology has made the biomedical devices electronically more viable, flexible and innovative. Yet the pain has remained one of the toughest challenges for mankind. The powerful painkillers have lifelong side effects. Due to this people turned to alternate methods for treatment and that's where TENS therapy (Transcutaneous Electrical

Nerve Stimulation) came in.TENS therapy is well established therapy used under physiotherapist guidance for drug free pain relief.Use of Music for healing has been known in the history of medicines in almost all cultures. It is interesting approach to integrate music with electrotherapy like TENS to promote healing of Restless leg syndrome and provide effective pain management.

Placement Activity 2018-19

41 out of 55 eligible students placed
Biggest package received:4.82 lakhs



Student Achievements 2019

Saumitra Jagdale
EXTCsem 5

I thank our Head of Department Dr Milind Shah for selecting me to be part of a training program of Livewire, Vashi. I was privileged to represent our college FCRIT for the same. It helped me build my technical skills by working on industrial project simulations and SSD based code development. This experience made me bridge the gap between the university based learning and actual industrial application.
Experience :
Used Proteus 8.0 to design microcontroller-based circuits and learned to program simulations with Keil Software in Embedded C language. Simulating Circuits with deeper understanding of microcontroller based coding.

Dattaji Gosavi
Research Internship at University of Arkansas,Little Rock.

I got the internship through introduction made by FCRIT ,Vashi college for the UG Fellowship Program offered by Vishwaniketan Institute. The fellowship offered me a way to experience the teaching process in USA . It also gave me an understanding about working with a group of new people with different skill sets. I worked on a project in which we had to send and receive data using Universal Software Radio Peripheral about a driver being drowsy. It was a completely new introduction to software defined radios and protocols used in transmissions. We used GNU radio on Ubuntu with few libraries like gr-foo and gr-ieee 802.11. My background in telecommunication and electronics helped in understanding the theory behind the connections and the different aspects that were being implemented in the project

HOW IS LIFE AFTER GRADUATING FROM AGNELS?

THE JOURNEY AHEAD

Alumni Thoughts

EX STUDENTS SHARE THEIR EXPERIENCES

It is my honor to have studied and graduated from FCRIT & become an Agnelite.
The benevolent professors at Agnels taught me values and morale which directly improves efficiency and productivity towards achieving my goals in life.
Agnels prepares you to practice discipline through thick and thin of life and take wise decisions to open new fronts.
As Jim Rohn says, "Discipline is the bridge between goals & accomplishment."

-**Sayli Chinchole**
2011-2015

Overall, this college has given me an experience that I may not have always wanted, but I definitely needed. I hope that this institution finds a way to manage its time, students, teachers and alumni relations, such as to keep up with the ever-changing generations. Thank you for all that I've learnt, Agnels, the memories I'll be sure to cherish forever.

-**Urvi Kachole**
2015 - 2019

I am very proud to be a part of FCRIT college. This college gives the best education along with the discipline. It also has good placement records. It provides advance techniques for developing student's skill and proper guidance towards self-appraisal by means of motivating the students to participate in a various activity. Last but not the least Agnelite can survive anywhere in the world because the kind of qualities and skills we have got during this course.

-**Vaishali naikare**
2012-2016

I wish to thank all the faculty members of EXTC department for their valuable support and encouragement throughout. The lessons learnt from them has definitely helped in my post graduation studies.
Also, the discipline that the college has instilled in us is no doubt helping me in the long run.
The four years at the college has given lifelong memories and amazing friends. Being in the corporate for more than a year now, I realise how beautiful the college life was!!
I wish all the best to all juniors. Study and enjoy to the fullest. Thank you.

-Tanvi Pulekar
2012-2016

Always remember do what your heart says, and don't rush into making decisions. Many of us will be still confused whether to go for higher studies or get a job and settle, believe in yourself push the limits because no one is going to do it for you.

"Dont downgrade your dream just to fit your reality. Upgrage your conviction to match your destiny".

Finally don't forget to enjoy your college life because these are the golden period of your life and surely they are never gonna come back how hard you try.
Thank you.

-Yash shah
2013-2017