NATIONAL ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to Anna University, Chennai.)

K.R.Nagar, Kovilpatti - 628 503.

ESTD : 1984

EEE NEWS LETTER

August 2017

VOLUME NO 5 ISSUE 2

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Dear Friends,

I thought that words, books and pens were more powerful than guns

-Malala Yousafzai

I am happy to present the Second issue of Volume 5 Issue 2 August 2017 of EEE Newsletter and I am greatly happy to meet you all through this newsletter.

Our Departments has been actively working in the august month through EEE Association and Special Interest Group. Our alumni are frequently visiting to give guest lectures from their experience. The thirst of knowledge for our faculties has also been fulfilled. The students are proudly roaring with their achievements and still many more articles can be seen in this issue

This newsletter provides evident for our work and it is accomplished when you give your valuable time through feedback….

Looking forward to see you all in the next issue…..

Good Wishes.

CONTENTS

STAFF ACTIVITIES/PUBLICATIONS/ACHIEVEMENTS

ACTIVITIES:

S.No.	Name of the Staff	Events/Guest Lecture	Topic/Event	Date	College/ Industry
1.	Ms.K.Gowthami, AP/EEE	Three days workshop	Controllers and system design using PIC microcontrollers	17th -19th August, 2017	Mepco Schlenk Engineering College, Sivakasi
2.	Mr.P.Samuel Pakianathan, AP/EEE	One day Workshop	High Voltage Engineering – Adoptability to Smart Grid	14th July 2017	Indian Institute of Technology, Madras
3.	Mr.F.Antony Jeffrey Vaz, AP/EEE	Two Day Workshop	Python Programming	21th & 22th August 2017	Regional Anna University, Tirunelveli

PUBLICATIONS:

- ✓ *T. Piraisoodi* ***Willjuice Iruthayarajan. M*** *& K. Mohaideen Abdul Kadhar*, "An Optimized Nonlinear Controller Design for Boiler–Turbine System Using Evolutionary Algorithms", IETE Journal of Research – Taylor and Francis, August 2017. **Impact Factor:** 0.909.

- ✓ *Purusothaman Mokkandi, Manivannan Jayamani,* ***Balakiruthiha Sekarbabu****, Jeya Prakash Kadambarajan, Rajini Nagarajan, M. T. H. Sultan & Rajesh Shanmugavel, "* Machinability performance of Al–NiTi and Al–NiTi–nano SiC composites with parametric optimization using GSA", Journal of Australian Ceramic Society, Springer Publications, Page no: 1 – 11. **Impact factor:** 0.744.

- ✓ ***M.Abdul Kader Riyaz, S.ArunJeyakumar M.Abdul Hameed Sharik & Ms.A.tamilarasi,*** "Graphene coated LED based automatic street lighting system using Arduino microcontroller", International Conference on Power, Control, Signals and Instrumentation Engineering (ICPCSI-2017). (Accepted for Publications)

DEPARTMENT ACTIVITIES

EEE ASSOCIATION

TOPIC OF THE GUEST LECTURE	Internet of Thing: the Connected Future
NAME OF THE RESOURCE PERSON	Mr. Venkat Subramanian (2015)
DESIGNATION OF THE RESOURCE PERSON	Internet of things (IOT), Singapore
PARTICIPANTS	III year students
VENUE	EEE Seminar Hall
DATE	07.08.2017

Mr. Venkat Subramanian started the guest lecture by giving introduction on Internet Of Things (IOT).The objective of guest lecture was to make concept clarification about IOT. He started his discussion with IOT basics and its applications.

He also explained the use of open source tools. He covered the concepts related to Hardware used for IOT and programming languages required to establish it.

The Session focused more on understanding the real world information and how to capture it. He advised the students to set their goals clearly as this was the right time to accomplish.

TOPIC OF THE GUEST LECTURE	Industrial Automation
NAME OF THE RESOURCE PERSON	Mr. SDR. SureshVarman
DESIGNATION OF THE RESOURCE PERSON	Independent Consultant In Power, Energy, Industrial Automation And Quality Control
PARTICIPANTS	Final year students
VENUE	EEE Seminar Hall
DATE	16.08.2017

SDR. Suresh Varman insisted the idea that automation is more efficient than the manual work. Also he proved those ideas with some videos and presentations. His speech mostly depended on advanced technology. He explained about automation work of milk industry.

He showed the manual production of steering rod of RANE industry. He listed the top companies in the break wire production which include RANE, TVS and HYUNDAI. After the lecture, we were inspired about automation technology.

The lecture was very useful for us to know about automation technology and we gathered information about the industrial automation.

TOPIC OF THE GUEST LECTURE	Competitive Exams
NAME OF THE RESOURCE PERSON	Dr. K. Elanseralathan
DESIGNATION OF THE RESOURCE PERSON	Professor in Pondicherry Engineering College
PARTICIPANTS	II year students
VENUE	EEE Seminar Hall
DATE	18.08.2017

Dr. K. Elanseralathan gave a motivational talk on Competitive Exams like GATE, IES. He insisted the importance of the exams. He also gave tips to prepare and crack the exam. He shared about the job opportunities available after cracking those exams. His speech inspired the students and the session became very useful to the participants.

VARIOUS EVENTS:

On 19.07.2017 a debate on the topic **GST-Goods & Services Tax** was conducted by EEE association at EEE Seminar Hall. Interested II year and III year students were participated on the debate.

SPECIAL INTEREST GROUP

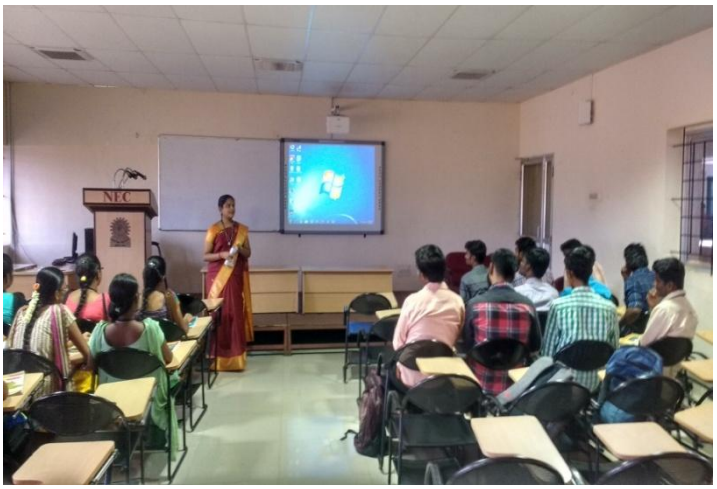
EMBEDDED SYSTEMS

An Introduction on "***Image processing***" was given by ***Mr. N.B.Prakash, Associate Professor/EEE*** on 15.07.2017 at EEE Seminar Hall for Special Interest Group (SIG) members.

Mrs.K.Gowthami, Assistant Professor/EEE started with definition of embedded system and basics of microprocessors and microcontrollers. She described the hardware and software parts used for embedded system design. Then she explained about PIC microcontroller and its applications and also the PIC Microcontroller kit was shown to the students.

Finally, ***Ms.A.Tamilarasi, Assistant Professor/EEE*** gave the basic introduction on Field Programmable Gate Array (FPGA) and IoT. She also discussed about the importance of FPGA and applications of Internet of Things and its role in real time applications.

The session was started by 10.15 AM and completed by 12.50 PM. Totally 23 students participated and got the relevant information about embedded system, basics of microprocessor and microcontroller, Programming PIC microcontroller using embedded C and FPGA.



An introduction to **"*Image Processing Enhancement &Colour Transformation*"** was given by Mr.N.B.Prakash, Associate Professor/EEE on 19.08.2017. The objectives of the session are:

- ✓ Introduction to MATLAB and image processing
- ✓ Import and export image in MATLAB
- ✓ Images and matrices
- ✓ Introduction to Image processing enhancement

The session was started by 11.00 AM and completed by 12.30 PM. Totally 8 students from third year were participated and got the relevant information about Image Processing Enhancement and color transformation.

POWER ELECTRONICS & DRIVES

The Special Interest Group on "***Power Electronics & Drives***" was held on 15/07/2017 at Computer Centre for Special Interested Group (SIG) members. Around 14 members attended the session.

The session was handled by ***Ms.MohanaLatha. P, AP/EEE*** on the topic "Recent Trends in Power Electronics and Simulation of Power Converter using MATLAB". She explained the importance of Power Electronics course and its applications in Renewable Energy Resources, the recent trends in the industries, and the real time application of Power Electronic Converters in day to day life.

She also gave an introduction to MATLAB and to simulate the Power Converters using MATLAB. Students simulated the basic Half Wave Rectifier with R, RL, RLE Load and the output voltage waveforms were analyzed

HIGH VOLTAGE ENGINEERING

The objectives of the session are:

- ✓ To understand the necessity of insulation system for power system
- ✓ To discuss the basic properties of insulating materials
- ✓ To know the recent testing techniques in high voltage engineering

Session I- (9.30 AM – 10.30 AM)

A discussion about "High Voltage Testing Techniques" was done by ***Mrs.G.Shunmugalakshmi, Assistant professor/EEE***.

Session II- (11.30 AM – 12.30 PM)

The session was continued by her in laboratory. Dry and wet pollution testing were demonstrated.

The session was started by 9.30 AM and completed by 12.30 PM. Totally 11 students from third year were participated.

POWER SYSTEMS & ENERGY ENGINEERING

The objectives of the session are:

- ✓ To give an outline about power systems and energy engineering
- ✓ To know the areas of research in power systems and energy engineering
- ✓ To discuss the recent trends in power systems engineering
- ✓ To understand the problems encountered with modernization of power systems and suitable techniques to rectify the problems.

Session I- (9.30 AM – 10.30 AM)

A general introduction about power system was done by **Ms.S.Balakiruthiha, Assistant professor/EEE**. She explained about,

- ✓ Basic outline of power systems
- ✓ Various research areas on power systems engineering which includes load flow analysis, power system protection, FACTS controllers, Distributed generation & Microgrids and Smart grids.

Session II- (11.30 AM – 12.30 PM)

The session was continued by **Ms. S. MuthuKumari, Assistant professor/EEE**. She explained about,

- ✓ Problems encountered with recent technologies in power systems
- ✓ A general introduction about various softwares, optimization techniques and control methods used for power system applications

The session was started by 9.30 AM and completed by 12.30 PM. Totally 30 students from third year were participated.

CONTROL & INSTRUMENTATION

Session : 10 to 12 AM – 19.08.2017

Venue : Control & Instrumentation (PC interfacing section)

Staff Name : Mr. J.Sivadasan, AP(SG)/EEE

- ✓ Overview of Twin Rotor MIMO system (TRMS) was elaborated.
- ✓ The importance PID controller was explained to the students.
- ✓ How computerized control of TRMS was explained to the students practically.
- ✓ Necessity of Evolutionary algorithm for tuning PID control is briefed and its practical implementation was discussed.
- ✓ Outline of Unmanned Aerial vehicles like Satellite, Helicopter, Quadrotor, Autonomous robots were explained to them

SOCIAL AWARENESS CELL

As a part of Social Awareness cell of EEE department an awareness camp was conducted for ***Idaiseval panchayat peoples, Kovilpatti*** on **31.08.2017** in the topic "Electricity usage, conservation and safety". The program was started with welcome address given by Venkatesh (final year B). Followed by that the session was started by ***K.Kumar Asst Prof/EEE*** with the comparison of renewable and non renewable energy sources and method of thermal power generation. Then he explains the Advantages and disadvantages of thermal power plant like,

Advantages:

- Fuel cost of thermal power plant is relatively low.
- We can produce thermal energy almost everywhere in the world.
- Heat production System is simple compared to other system.
- Overall system cost effective.
- Easy mechanism.

Disadvantages:

- Huge production of Carbon-di-oxide (CO2) in the atmosphere.
- Exhausted gases harms outside environment badly.
- Low overall efficiency.

Following the session Dr.M.Ravindran Asso Prof(SG) explained the need of renewable energy sources and safety aspects to handle electricity. Final year and third year students play drama related to electricity conservation and safety. Also they put video demonstration to deliver the content to the people. The session was coordinated by ***Dr.M.Ravindran, Asso. Prof(SG)/EEE, Mr.K.Kumar, Asst prof/EEE, Mr.Subburaj***, technician along with lateral entry and NCC volunteers. Around 120 members attend the program and got benefited.

ALUMNI INTERACTION

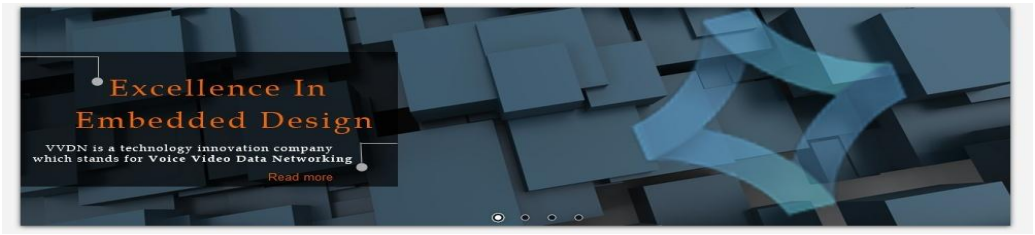
Alumni interaction program was organized and conducted on 11th August of 2017 in EEE seminar hall with **Mrs.M.Rajeswari, Technology Lead, Infosys Ltd, Chennai** and alumni (2004) of EEE department had an interaction with Final year students. The interaction went on for about one hour from 3.30 PM to 4.30 P.M.

She advised the students should be strong in coding to get placed in IT sector. She insisted the students should be updated and be bold enough to answer the interviewer. Finally she spoke about the importance of communication skills. The students interacted with her and gained more knowledge. They also clarified their doubts regarding placement. On the whole, the one hour session was very useful and the students gained many ideas about interview skills.

Alumni interaction program was organized and conducted on 24th August of 2017 in H1 hall with **Mr. Amarnath, Marine Industry, Chennai** and alumni (2016) of EEE department had an interaction with Second year students.During that session, he gave the outline about marine industry. He guided the students to concentrate the course related to marine and gave tips to crack the job. He explained the current status and job opportunities available in marine industry. Finally, the students got an idea to face interview in marine industry.

Alumni interaction program was organized and conducted on 24th August of 2017 in H6 hall with **Ms. Bavithra, Mobius Knowledge Services, Chennai** and alumni (2017) of EEE department had an interaction with Final year students for an hour. During that session, she gave the outline about C program. She encouraged the students to improve their soft skills and coding to get placed in software industries. She also explained about her interview experience. The students interacted with her and gained more knowledge. Finally, she conveyed her hearty wishes to the students to lead a successful life.

PLACEMENT DETAILS



VVDN TECHNOLOGIES

On behalf of the Chairman, Managing Director, Director, Principal, Head of the Department and staff members, we heartily congratulates the final year student **Mr. Prakash.P.R and Prabhu.S** who placed in VVDN Technologies Campus drive in our campus during the month of August 2017.

	
Mr.Prakash.P.R	Mr. Prabhu. S

- *To be Continued*

Passed out Students placement details

(2013-2017 Batch)

Sl.No	Name of the student	Company Name
1	Esakkiammal.P	Tech Mahindra Private limited, Chennai
2	Jesintha.R	
3	Jesuraj Pravin.T	Ashok Leyland ,Chennai
4	M.Jegan	TEEZLE, Chennai
5	Abdul Rahaman. S	
6	Premkumar.A	POG Engineering Consultants limited, Chennai
7	Kannan.K	
8	RathnaPrakash.P	
9	Selvakumar.S	
10	Azarudeen.N	KV power Info tech private limited, Chennai
11	Afzal Ahamed.S	
12	Sudha.M	Jilaba software private limited, Chennai
13	Vigneshwari.S	Renault Nissan Technolgies, Coimbatore
14.	Srinath.K	E-Pillar Engineering private limited, Chennai
15.	Venkata Krishnan.S	NISSI Engineering solution private limited, Chennai

STUDENTS EXPERIENCE IN FACING INTERVIEWS

VVDN TECHNOLOGIES INTERVIEW EXPERIENCE

- *P.R.Prakash, Final, EEE-B*

1ST ROUND:

The first round of the placement process was a written test that was conducted in our college.
The written test contains,

- *10 logical and reasoning questions.*
- *30 questions from basic electronics covering the areas of Linear Integrated Circuits,Digital Logic Circuits,Electronic Devices &Circuits and Circuit theory.*
- *20 questions from basic C programming*

2ND ROUND:

The second round was a ***Technical Face to Face Interview***and we were asked to report at VVDN Technologies,Chennai for the interview. For me the technical interview lasted for about 1 hour and 15 minutes. The questions asked to me are as follows:

- *They asked about the transistors and their working at the various regions and the applications of transistors.*
- *They asked me to explain the working of various diodes including Zenerand Schottky diode.*
- *What is an inductor and inductance?*
- *They asked questions from the electromagnetic induction.*
- *Explain the working principle of a transformer?*
- *What will happen when dc is applied to a transformer?*
- *Why ohm's law can't be applied in a transformer?*

After these basic questions some derivations and circuit designs were asked.

Design a AC to DCconverter:

- ✓ *I drew the circuit of a bridge rectifier and then the questions were from the rectifier circuit:*
- ✓ *Explain the working of the circuit:*
- ✓ *Derive the value of capacitance used in the filter.*
- ✓ *How will you determine the value of the resistor used in voltage regulator part of the circuit?*
- ✓ *Let the input of the circuit be 5v AC, can you draw the wave forms at the rectifier bridge, capacitor voltage and explain them?*

- Design a buffer circuit using analog devices and explain its working and applications.
- In a landline telephone what does the wire carries? Either the signal or the power supply? Explain its working.
- Design an analog circuit with all its parameters to add two signals and explain its working.
- They asked about the internal design of an operational amplifier.
- Design a circuit to satisfy the following conditions
- The input to the circuit is one pulse of 5 volt magnitude and the output must be 4 volt signal with a delay of 100 millisecs. We don't have any clock pulse. Design the circuit and the values of components used it.
- We have a 5 volt digital square wave and we need the inverse of it design a circuit for this purpose using an analog device and the circuit must contain less number of accessory components.

All the questions asked were from the subjects like Linear Integrated Circuits, Electronic Devices and Circuits, Digital Logic and circuits and Basic Electronics, a good practical knowledge about the working of various devices has to obtain to crack the interview.

VVDN TECHNOLOGIES INTERVIEW EXPERIENCE

- *S. Prabhu, Final, EEE-B*

1ST ROUND:

- ✓ 10 Aptitude Question that are asked from the area of logical reasoning
- ✓ 30 Electronics Question that are asked from the basic concepts in EDC,LIC and DLC
- ✓ 20 C-Programming Questions that are all from only basics of C (In most C Questions are not taken into account They mostly focus on APPS and Electronics Questions)

2ND ROUND:

TECHNICAL FACE TO FACE INTERVIEW

In my Technical Interview they asked Questions that are mentioned below

- ✓ First Question is what is ohms Law and then they asked IS Ohms Law is applicable to Power system? And I answered as No and they asked me what the reason is?
- ✓ They asked to draw a power supply circuit to convert 230 Volt AC to 5 Volt DC and I designed a SMPS circuit with Zener Voltage Regulator
- ✓ Then they asked me to design the series resistance that to be added to the Zener Diode
- ✓ Then they asked the basics questions in transistors about their operation in Various regions
- ✓ Then they asked the basic principles of Transformers
- ✓ They asked a Question that What happens when our television is plugged into 230 Volt DC Supply?

ANS:- TV will Work normally Since it contains Switched Mode Power Supply (SMPS)

Then they asked what are all the types of frequencies that are used in our present tele-communication.

FINAL ROUND:

In this also they ask technical questions related to Electronic Devices and Circuits, Linear Integrated Circuits and Digital Logic and Circuits. In this round they mainly focus on the Designing of circuits

- ✓ They asked me to draw a unity gain buffer
- ✓ They asked me to design a circuit with two inputs A and B and the output is A-B
- ✓ They asked me to design a Switch using to turn ON and OFF electrical equipment through Relay and they asked to design the values of R_b and$R_c$for the rated current through the relay
- ✓ They asked me to design a EX-OR gate with the use of only NOR gates alone

ALUMNI DETAILS

Immanuel was born on 1980, in a small hot dry village called Venkatewarapuram in Tirunelveli district. His initial childhood life is day dreaming in his village green fields under hot sun. He has completed his schooling in Tamil medium in the same village. Though his father wants to see him as doctor, neither the marks he scored in the school nor the family background allowed him entering in to medical college to make his father's dream true.

When he entered to ***National Engineering College Kovilpatti in 1997***, he was in very much fear against facing all the subjects in English for the first time. But he was strongly believed in the quote "*Running away from fear is the losing strategy*". When he passed all the 10 subjects in the first attempt in the 1st year, he felt it as his life time achievement and later he secured University 3rd Rank in the EEE branch during 2001 and followed by securing the gold medal in M.Tech - Micro Electronics in VTU University Belgaum during 2002-2003.

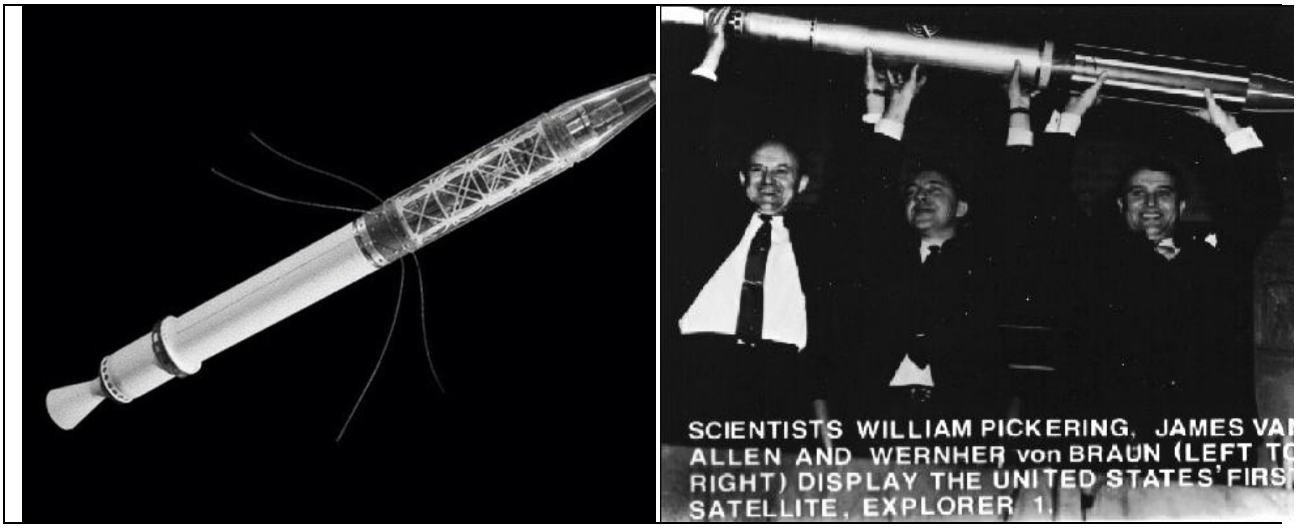
After the completion of his master degree, he joined ***iWave Systems Technologies*** at Bangalore which is a leading embedded systems hardware and software development company which provides latest cutting edge embedded computing solutions to global customers. Since from the start of his carrier, he always had the un quenching thirst to bring the company to the next stage. He is the brain child of starting the product development team in the company and had launched several competing SOM solutions to the global standards based industry latest chipsets from leading chipset vendors such as Qualcomm, Intel etc.

He had started his profession as electronics design engineer in the company in 2003 and now he heads the embedded SOM product development unit as associate director role in the same company. In the last 14 years, he had travelled to all over the globe promoting his embedded electronic products and today he remembers one of his favorite quotes for his success

- ***"Nothing happen by itself. It all comes to your way by your own exertions".***

STUDENT ARTICLES

EXPLORER 1: THE FIRST US SATELLITE



Explorer 1 was the United States' first satellite in space. The 1958 launch of the satellite — twice the size of a basketball — was an important moment for the country, as the Space Race with the Soviet Union was just beginning.

The satellite marked a moment when the United States got its confidence back after a series of unsuccessful launches and the Soviet Union's successful launch of Sputnik. The satellite also helped buttress the nation's technological confidence in the eyes of the world. It signaled that the country was ready to explore the universe.

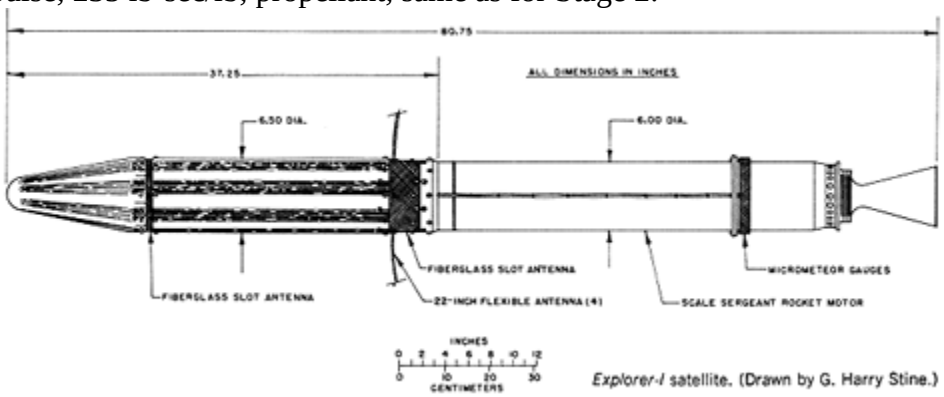
Spurred by the Soviets: S Explorer 1's ride to space came through a complicated set of circumstances. The United States had at least three main rocket options for sending the satellite into space. The ones that are most remembered today are Vanguard — under development by the Navy — and Juno. The latter rocket was based on an Army rocket designed by German scientist Wernher Von Braun, who worked on the V-2 missile program that sent bombs to England during World War II. The satellite was supposed to launch as the United States' contribution to science during International Geophysical Year (which ran from 1957-1958). Then history intervened. The Soviet Union rocketed Sputnik into space on Oct. 4, 1957. This was the first artificial satellite any nation sent out of the Earth. The launch — revealed only after it was a success — stunned most of the Western world. It was a coup for Soviet rocket technology, and led some to muse those bombs could be launched just as easily as a satellite. This accele rated the United States' plans. Rocket and satellite engineers quickly got to work trying to launch in space.

Stage 1: Rocketdyne A-7 engine--Thrust, 83,000 lb; burning time, 155 seconds; specific impulse, 235 seconds; propellants, liquid oxygen, as oxidizer, and "Hydyne" (60% unsymmetrical, dimethylhydrazine and 40% diethylenetriamine), as fuel; propellant feed, turbopump type; turbopump drive, 90% hydrogen peroxide decomposed by catalyst bed to produce steam.

Stage 2: Eleven JPL scaled-down Sergeant rockets.--Thrust, 16,500 lb; burning time, 6.5 seconds; specific impulse, 220 lb-sec/lb; propellant, polysulfide-aluminum and ammonium perchlorate (solid propellant).

Stage 3: Three JPL scaled-down Sergeant rockets.-- Thrust, 5,400 lb; burning time, 6.5 seconds; specific impulse, 235 lb-sec/lb; propellant, same as for Stage 2.

Stage 4: One JPL scaled-down Sergeant rocket.-- Thrust, 5,400 lb; burning time, 6.5 seconds; specific impulse, 235 lb-sec/lb; propellant, same as for Stage 2.



Explorer-I satellite. (Drawn by G. Harry Stine.)

Of Explorer 1's 30 pounds, more than 18 pounds of that was made up of instruments. Besides the cosmic ray detectors, it also carried experiments such as temperature sensors (both internal and external) and a microphone to listen for micrometeorites hitting the satellite. NASA painted the instrument portion of the satellite white and dark green, which was supposed to regulate temperatures on the section. Dark colors absorb more heat, and white absorb less. The agency notes that the satellite was simple by design, as they wanted to ensure it was as reliable as possible. On that count, NASA succeeded. Explorer 1 sent data back to Earth for four months, ceasing communications on May 23, 1958. The satellite remained aloft for more than a decade before re-entering Earth's atmosphere on March 31, 1970.Explorer 1 spawned a series of other satellites. While Explorers 2 and 5 failed due to rocket stage problems, Explorers 3 and 4 both launched successfully in 1958 and transmitted science from orbit. Even though the satellites are no longer working, their legacy remains. They launched the United States into space and showed that it was possible to do science from orbit.

- *Ms. K. Cherma Jeya, II Year EEE*

Plasma: The Fourth State of Matter

Plasma is not a common state of matter here on earth, but may be the most common state of matter in the universe .plasma consists of highly charged particles with extremely high kinetic energy. The noble gases (helium, neon, argon, krypton, xenon and radon) are often used to make glowing signs by using electricity to ionize them to the plasma state. Stars are essentially superheated balls of plasma.

A plasma is a hot ionized gas consisting of approximately equal numbers of positively charged ions and negatively charged ions and negatively charged electrons .the characteristics of plasma are significantly different from those of ordinary neutral gases so that plasmas are considered a distinct" fourth state of matter ". For ex, because plasmas are made up of electrically charged particles .they are strongly influenced by electric and magnetic fields, while neutral gas are not.an example of such influence is the trapping of energetic charged particles along geomagnetic field lines to form the allen radiation belts.

In addition to externally imposed fields such as the earth's magnetic field or interplanetary magnetic field ,the plasma is acted upon by electric and magnetic fields created within the plasma itself through localized charge concentrations and electric currents that result from the differential motion of ions and electrons . the forces exerted by these field on the charged particles behavior a coherent ,collective quality that neutral gases do not display { despite the existence of localized charge concentrations and electric potential a plasma is electrically " quasi-neutra", because in aggregate , there are approximately equal numbers of positively and negatively distributed so that their charges cancel}.

- *Ms. A. Poorna Pushkala, II Year EEE*

Augmented reality

Augmented reality (**AR**) is a live direct or indirect view of a physical, real-world environment whose elements are "augmented" by computer-generated or extracted real-world sensory input such as sound, video, graphics or GPS data. It is related to a more general concept called computer-mediated reality, in which a view of reality is modified (possibly even diminished rather than augmented) by a computer. Augmented reality enhances one's current perception of reality, whereas in contrast, virtual reality replaces the real world with a simulated one. Augmentation techniques are typically performed in real time and in semantic context with environmental elements, such as overlaying supplemental information like scores over a live video feed of a sporting event

Hardware

Hardware components for augmented reality are: processor, display, sensors and input devices. Modern mobile computing devices like smart phones and tablet computers contain these elements which often include a camera and MEMS sensors such as accelerometer, GPS, and solid state compass, making them suitable AR platforms.

Software and algorithms

A key measure of AR systems is how realistically they integrate augmentations with the real world. The software must derive real world coordinates, independent from the camera, from camera images. That process is called image registration which uses different methods of computer vision, mostly related to video tracking. Many computer vision methods of augmented reality are inherited from visual odometry.

Usually those methods consist of two parts. The first stage is to detect interest points, fiducially markers or optical flow in the camera images. This step can use feature detection methods like corner detection, blob detection, edge detection or thresholding and/or other image processing methods. The second stage restores a real world coordinate system from the data obtained in the first stage. Some methods assume objects with known geometry (or fiducial markers) are present in the scene. In some of those cases the scene 3D structure should be recalculated beforehand. If part of the scene is unknown simultaneous localization and mapping (SLAM) can map relative positions. If no information about scene geometry is

available, structure from motion methods like bundle adjustment are used. Mathematical methods used in the second stage include projective (epipolar) geometry, geometric algebra, rotation representation with exponential map, kalman and particle filters, nonlinear optimization, robust statistics. Augmented Reality Markup Language (ARML) is a data standard developed within the Open Geospatial Consortium (OGC), which consists of XML grammar to describe the location and appearance of virtual objects in the scene, as well as ECMAScript bindings to allow dynamic access to properties of virtual objects.

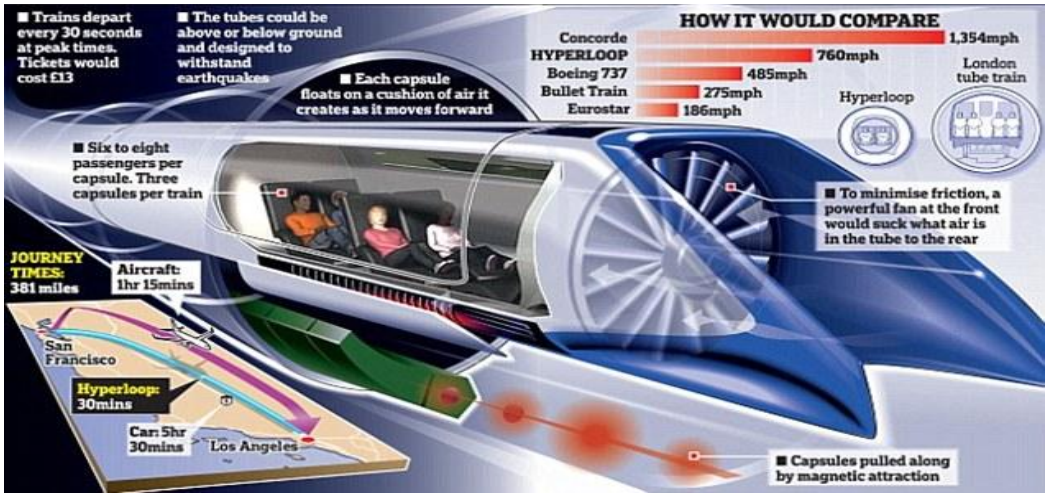
- Mr.P.R.Prakash, Final EEE

Hyperloop

Hyperloop is a new mode of transportation that moves freight and people quickly, safely, on-demand and direct from origin to destination. Passengers or cargo are loaded into the Hyperloop vehicle and accelerate gradually via electric propulsion through a low-pressure tube. The vehicle quickly lifts above the track using magnetic levitation and glides at airline speeds for long distances due to ultra-low aerodynamic drag. Hyperloop systems will be built on columns or tunneled below ground to avoid dangerous grade crossings and wildlife. It's fully autonomous and enclosed, eliminating pilot error and weather hazards. It's safe and clean, with no direct carbon emissions.

Technology Behind Hyperloop

The system would propel a pod-like vehicle through a near-vacuum steel tube, with most of its air removed, at more than airline speed. The alpha version of the Hyperloop, published on the SpaceX website, describes claims of the design of the system, as well as its function. The pods would accelerate to cruising speed of up to 1,200kph gradually using a linear electric motor and glide above their track using passive magnetic levitation or air bearings. The tubes could also go above ground on columns or underground, eliminating the dangers of grade crossings. It is hoped that the system will be highly energy-efficient, quiet and autonomous. It would be powered by solar panels and, because it was so lightweight, could be elevated on concrete pylons along existing highways, reducing the cost of acquiring land.



History of Hyperloop

This idea was initially proposed by the renowned serial Entrepreneur Elon Musk in July 2012 at a PandoDaily event in Santa Monica, California. The name Hyperloop was chosen because it would go in a loop. Elon Musk declared the project open source as he was already quite busy with Tesla and SpaceX.A start-up in Los Angeles called Hyperloop One, formerly known as Hyperloop Technologies, was incorporated in June 2014 and has since raised $160 million and built a team of 200 engineers and technicians to bring a complete autonomous transport system to market. Hyperloop One engineers have modified several key technical elements of Musk's original design, including replacing the air bearings with passive magnetic levitation and eliminating the compressor.

- *Mr. S.Prabhu, Final EEE*

TECHNICAL ARTICLE BY EXPERT MEMBER/ALUMNI

Data Science /Data Analytics

What comes to our mind on seeing the word science-Physics, Chemistry isn't…. yes !!!
What is this Data Science ?
Is there a science with data ? The answer is yes- A new science and young science, probably the science of the 21st century.
What's the "sexiest job of the 21st century"?
According to Harvard Business Review, it's data scientist. A job devoted to giving structure to large quantities of formless data. Ever-changing, ever-challenging big data. Data analytics is the pursuit of extracting meaning from raw data using specialized computer systems. These systems transform, organize, and model the data to draw conclusions and identify patterns.

What do I need to know about data analytics?
While data analytics can be simple, today the term is most often used to describe the analysis of large volumes of data and/or high-velocity data, which presents unique computational and data-handling challenges. Skilled data analytics professionals, who generally have a strong expertise in statistics, are called data scientists.

Is data analytics only for big data?
No, data analytics is a general term for any type of processing that looks at historical data over time, but as the size of organizational data grows, the term data analytics is evolving to favor big data-capable systems.
How has big data changed data analytics?
The era of big data drastically changed the requirements for extracting meaning from business data. In the world of relational databases, administrators easily generated reports on data contents for business use, but these provided little or no broad business

What is the status of the data analytics marketplace?
Today the field of data analytics is growing quickly, driven by intense market demand for systems that tolerate the intense requirements of big data, as well as people who have the skills needed for manipulating data queries and translating results. Global businesses are facing increasing complexity and market volatility. In response, all business functions are turning to data-driven analytics and insights as a means to manage this increasing uncertainty, while better understanding their organizations' customer bases and growing their businesses. The move to data-driven insights is being forced by continued business reliance on technology and automation throughout the enterprise. Growth in digital technologies is driving the ability to analyze more data. This, in turn, is fueling the enterprise's appetite for better data, more advanced analytics skills and the implementation of best practices. Analytics is the primary enabler to derive truth and meaning from data that drives the business growth.

In March 2017, Dun & Bradstreet and Forbes Insights explored the current state of analytics adoption across the enterprise via a survey of more than 300 executives in North America, the U.K. and Ireland across a range of industries. A recent report, "Analytics Accelerates Into the Mainstream," sponsored by Dun & Bradstreet, analyzes the survey results.

Some key findings:

- ✓ Senior executives finally understand the value of analytics and are making investments in technology, people and processes.
- ✓ Data analytics skills gaps persist across the enterprise, as 27% of analytics professionals surveyed cite this skills gap as a major impediment in their data initiatives.
- ✓ Today's data-driven enterprise has a never-ending appetite for more data.
- ✓ Analytical methods and tools trail both the appetite and ambition of most business leaders: 23% of analytics professionals are still using spreadsheets as their primary tool for data analysis.
- ✓ There is a dire need for better data analytics best practices, with 19% using only basic data models and regressions.
- ✓ People capital is a major factor for data analytics success.
- ✓ While data analytics has gone mainstream, the C-suite and senior leadership need to do more to drive the cultural change needed for better utilization of analytics, as 38% of those surveyed say their companies need to do more.
- ✓ Enterprises that plan to achieve data analytics excellence need to embrace a hybrid expertise model. Of the companies surveyed, 60% are using third parties to support organizational bandwidth while 55% are outsourcing some or all of their analytics needs.
- ✓ The hybrid expertise model can help enterprises improve the quality of their data analytics, as 55% of those surveyed said that third-party analytics partners execute work of higher quality than analytics work completed in-house.
- ✓ To move to a data-driven enterprise, business leaders need to do more with all the data their teams are consuming and analyzing. Only 38% of respondents strongly felt that business leaders took full advantage of their analytics initiatives.

- *R S Saravanakkumar (2016 Batch),*
Data Analyst,
Certified Tableau professional.
(saravanasoundar@gmail.com)

STUDENTS ACHIEVEMENTS

SEMINAR FOR THE FIRST YEAR STUDENTS

We the students of final year EEE department took classes on various topics like building up self confidence, Indian constitution, mock interview, group discussion etc., for the management students on every Thursdays during the month of july-2017.

The students who took seminar are:

N.Shameema Farhana-1413101
S.Suriya-1413110
P.Pon sharmila-1413076
K.P.Shanmuga sundar-1413102
S.Bala Abirami-1413013

ENTREPRENEUR AWARENESS II CAMP – (08.08.2017-10.08.2017)

Sl.No	Roll.No	Name	Year/Sec
II year			
1	163005	Amarnath.S	II-A
2	163022	Ashfaaq Mohamed.S.A	II-A
3	163115	Arun Gomathi.R	II-A
4	163063	Nalla Selva Prakash.V	II-B
5	163027	Muralitharan.R	II-B
6	163100	Madhumitha.K	II-B
7	163064	Leela Nivashini.M	II-B
8	163037	Shanmugavel.S.J	II-C
9	163038	Solaiprakash.R	II-C
10	163075	Subaragavan.M	II-C
11	163052	Sinduja.M	II-C
III year			
1	153032	Anandhi.R	III-A
2	153018	Arun Kumar.S	III-A
3	153035	Divya.D.R	III-A
4	153036	Jebisha Gnanadeepam.I	III-A
5	153092	Mohamed Farook.M	III-A
6	153020	Ramesh Moorthi.I	III-B
7	153069	Selvakumar.T	III-B

8	153003	Surendaran.B	III-B
9	153111	Shiva.G.P	III-B
10	153039	Sreevidya Chidambara Vadivoo.T	III-B
11	153101	Rajashree.M	III-B
IV year			
1	143082	Abdul Hameed Sharik.M	IV-A
2	143023	Abdul Kader Riyaz.M	IV-A
3	143066	Arun Jeyakumar.S	IV-A
4	153419	Ashik.A	IV-A
5	143033	Muthupandi.G	IV-B
6	143041	Praveen Kumar.D	IV-B
7	143026	Vignesh.S	IV-B
8	153401	Rajkumar.R.K	IV-B
9	153409	Venkatesh.D	IV-B
10	153416	Seenivasakan.A	IV-B
11	143059	Ranjitha.S	IV-B

S.No	Name	Events	Achievements	Venue
1	A.Poorna Pushkala	Essay Writing	Participated	National Engineering college, Department of Fine arts Kovilpatti
2	A.G.Naveen Kumar			
3	A.Priya darshini	Debate		
4	A.Meenakshi			
5	S.Meenakshi	Drawing		
6.	V.Nivedha	Paper presentation	Participated	Ramco Institute of technology, Rajapalayam

PRIZE WINNERS - EXTRA CURRICULAR ACTIVITIES - ASSOCIATION ACTIVITIES

S.NO	NAME	EVENTS	VENUE	DATE
1.	S.Reshma priyadharshini	Dance	EEE, Seminar Hall	12.8.2017
2.	T.Sreevidya Chidambara Vadivoo			
3.	J.Sankari			
4.	M.Sugashini			
5.	K.Vishnupriya			
6.	S.Priyadharshini			
7.	R.A.Ranjitha			
8.	G.Viswanath			
9.	K.Vishnu priya	Debate (GST)	EEE, Seminar Hall	12.8.2017

CAMP

S.NO	NAME	CLUB	VENUE	DATE
1.	C.V.Suryakumar	Basic leadership camp (NCC)	Tanjore	07.08.2017-18.08.2017
2.	C.V.Suryakumar	THALSAINIK camp (NCC)	Madurai	1.6.2017-14.6.2017
3.	G.Ranjith Kumar			
4.	S.Sivakumar			
5.	R.Ragu ram			

CULTURAL PERFORMANCES

S.NO	NAME	EVENT	VENUE	DATE
1.	R.A.Ranjitha	Dr. MGR century birthday celebration dance	Auditorium	27.6.17
2.	C.Shibana			
3.	K.VishnuPriya			
4.	M.Sugasini			

CLUB ACTIVITIES

S.NO	NAME	EVENT	VENUE	DATE
1.	T.Sreevidyachidambaravadivoo	ECO CLUB-MIME	S&H Department	26.07.17
2.	S.Reshmapriyadharshini			
3.	M.Sugashini			
4.	K.Shenbagadevi			
5.	J.Sankari			
6.	K.Santhiyalakshmi			
7.	K.vishnupriya			
8.	R.Pavithra	ECO CLUB – SKIT		
9.	S.Priyadharshini			
10.	B.Radha	Rotract Club-Rally Tribute To Dr.APJ Abdul Kalam		
11.	K.NSakthi			
12.	M.Sugashini			
13.	V.Padmavathi			

EXTRA CURRICULAR ACTIVITIES - CAMPS

S.NO	NAME	CAMP	VENUE	DATE
1.	S. Kathirvel Mari	NSS	TUTICORIN	12.8.17
2.	D.Murugan			
3.	S. Gopinath			

PAPER PRESENTATIONS

S.NO	NAME	TITLE OF PAPER	VENUE	DATE
1.	M.Divya Bharathi	VISION 2020,YRC CLUB	CSE SEMINAR HALL	18.08.17
2.	Jamunadevi			
3.	Gowsalya			
4.	S. Nithyasree			

COMPETITIONS

S.NO	NAME	EVENT	VENUE	DATE
1.	Deepika Rajam	ESSAY WRITING	CSE SEMINAR HALL	18.08.17

WORKSHOPS

S.NO	NAME	TOPIC	VENUE	DATE
1.	S.Abishek	C,C++	IT DEPT	13.07.17
2	S.Gopinath			
3	S.Govindaprasadh			

EXTRA CURRICULAR ACTIVITIES - ASSOCIATION ACTIVITIES

S.NO	NAME	EVENT	VENUE	DATE
1.	M.Jeffrin Anisha	DANCE	EEE SEMINAR HALL	12.08.17
2.	E.Kalaiarasi			
3.	R.Nishanthi			
4.	T.Manikandaprabhu			
5.	A.Nithiyasree	DEBATE		12.08.17

CAMPS

S.NO	NAME	CLUB	VENUE	DATE
1.	M.Anitha	ECO CLUB SKIT	S&H DEPT	26.07.17
2.	K.R.Jeniba			
3.	M.Anju Abinaya			
4.	A.Aasha			
5.	M.Jothi Basu	ROTRACT CLUB RALLY		
6.	M.Jeya Kumar			
7.	C.Gurunathan			
8.	K.Mariraj			
9.	M.Karan			

FINE ARTS CLUB

S.NO	NAME	CLUB	EVENT	DATE
1.	S.P.Sunanthaa	Independence Day Celebration	Singing	15.08.2017
2.	K.P.Shunmuga Sundar			

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