SARANATHAN COLLEGE OF ENGINEERING
PANJAPUR TRICHY

Department of
Electronics &
Communication
Engineering

proudly presents

Wizardzz - 2k16 Sep

FROM THE HOD'S DESK

I am very enchanted that our ECE department is releasing our department e-magazine version. 9.0.1 named "WIZARDZZ V.9" for the Odd semester of 2016. Department of ECE has been releasing e-magazine once per semester since November, 2012. This e-magazine is surely a channel to prove the hidden talents of both our faculty members and our students not only in technical but also in literature. Our ECE Department aims at keeping students abreast of the current technological trends and due consideration is also paid to enhance their skills in communication, fine arts, etc. I hope this e-magazine provides an opportunity to the students and staff members to lend free expression to their pioneering and imaginative thoughts.

This e-magazine plays an active role in gaining latest developments in the field of Engineering and also presents the achievements of the department. This e-magazine would surely help in building our promising Engineers to become expertise in the field of Electronics and Communication Engineering. This EMagazine is the window to our departmental activities.This emagazine includes a wide range of facts, riddles, quotes, paintings and some informative and inspirational articles apart from technical articles.

A flower makes no garland. This magazine is not the outcome of the effort put in by an individual. I extend my sincere thanks to the persons who have contributed to this issue and enhance its perfection and beautification through their articles.I congratulate the entire editorial team for their hard work and dedication that has resulted in the publication of this issue of our department e-magazine WIZARDZZ v9.I wish them All the Best for all their future accomplishments.

DR.M.Santhi
HOD/ECE

Our Vision

To become a leading department of Higher Learning and a Research Center of Excellence in Electronics and Communication Engineering.

Our Mission :-

- ✓ To enable budding engineers to obtain technical exposure in various areas of Electronics and Communication Engineering.
- ✓ To nurture career improvement
- ✓ To initiate and sustain research activities in the department in cutting edge areas of Electronics and Communication Engineering
- ✓ To develop professional and ethical attitude in the students.

PROGRAMME EDUCATIONAL OBJECTIVES

The Graduates of Electronics and Communication Engineering will

❑ have a strong foundation in the required sciences in order to pursue studies in Electronics and Communication Engineering.

❑ have a broad exposure to the students in various topics related to Electronics and Communication Engineering fields, to enable them to excel in their professional career/higher studies.

❑ possess innovative skills in order to solve the technical problems which will arise in their professional life.

❑ have professional and ethical attitude and an ability to visualize the engineering issues in a broader social context.

PROGRAMME OUTCOMES

Engineering Graduates will be able to:

❑ **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

❑ **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

❑ **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

❑ **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

❑ **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

❑ **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

- ❑ **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.

- ❑ **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

- ❑ **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

- ❑ **Communication:** Communicate effectively on complex engineering activities with the **engineering** community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- ❑ **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

- ❑ **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES

Graduates of Electronics and Communication Engineering will be able to:

❑ Comprehend and demonstrate the principles and concepts of Semiconductor theory, Signal Processing & Embedded systems in the fields of Consumer Electronics, Medical Electronics and Defense Electronics

❑ Apply emerging Information and Communication Engineering Techniques to solve real time problems
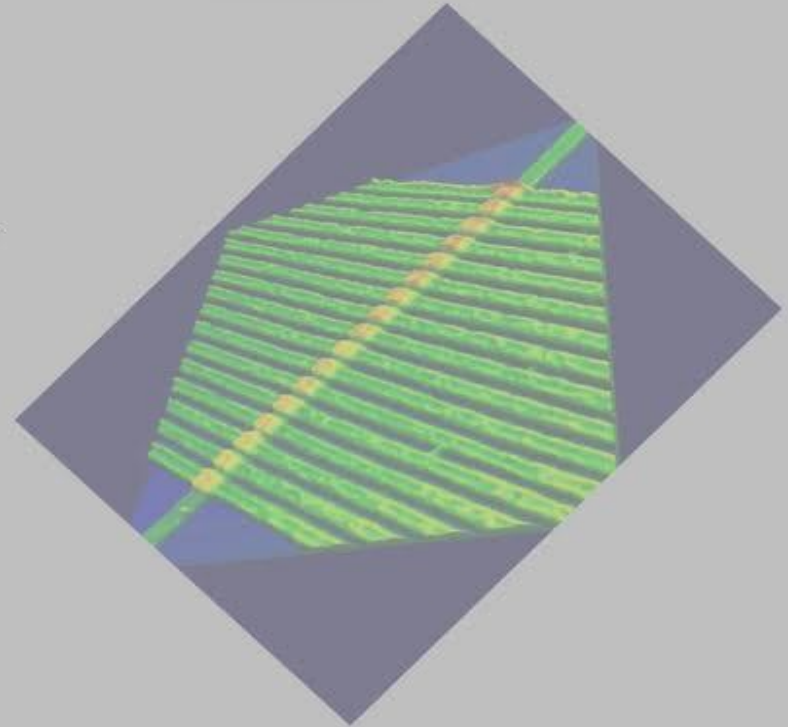
Publications of our faculty

DR. M. SANTHI M.E., PH.D
Professor & Head

▪Dr.M.Santhi,"Optimal Implementation of Adaptive Bimodal Personal Authentication System in FPGA" , Australian Journal of Basic and Applied Sciences , Vol 1.No.1 (2016)

▪Dr.M.Santhi, "High Performance Implementation of Biometric Authentication System in FPGA" , Middle-East Journal of Scientific Research

▪Dr.M.Santhi and R.Vaishanavi ," Efficient VLSI Design Of constant Multiplier Architecture Based on Vertical-Horizontal Binary Common Sub-Expression Elimination Algorithm For reconfigurable FIR Filter Synthesis", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

▪Dr.M. Santhi and C.T. Nallammai," Low Power Low Complexity Implementation of Direct Form LMS aaptive Filter", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

▪Dr.M. Santhi and R. Vaishanavi," An Efficient VLSI Architecture for Pulse Shaping FIR Interpolation Filter of Multistandard DUC", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

▪Dr.M. Santhi and C.T. Nallammai,"_Low Complexity Implementation of LMS/ZALMS Adaptive Filter For Sparse System Identification", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016
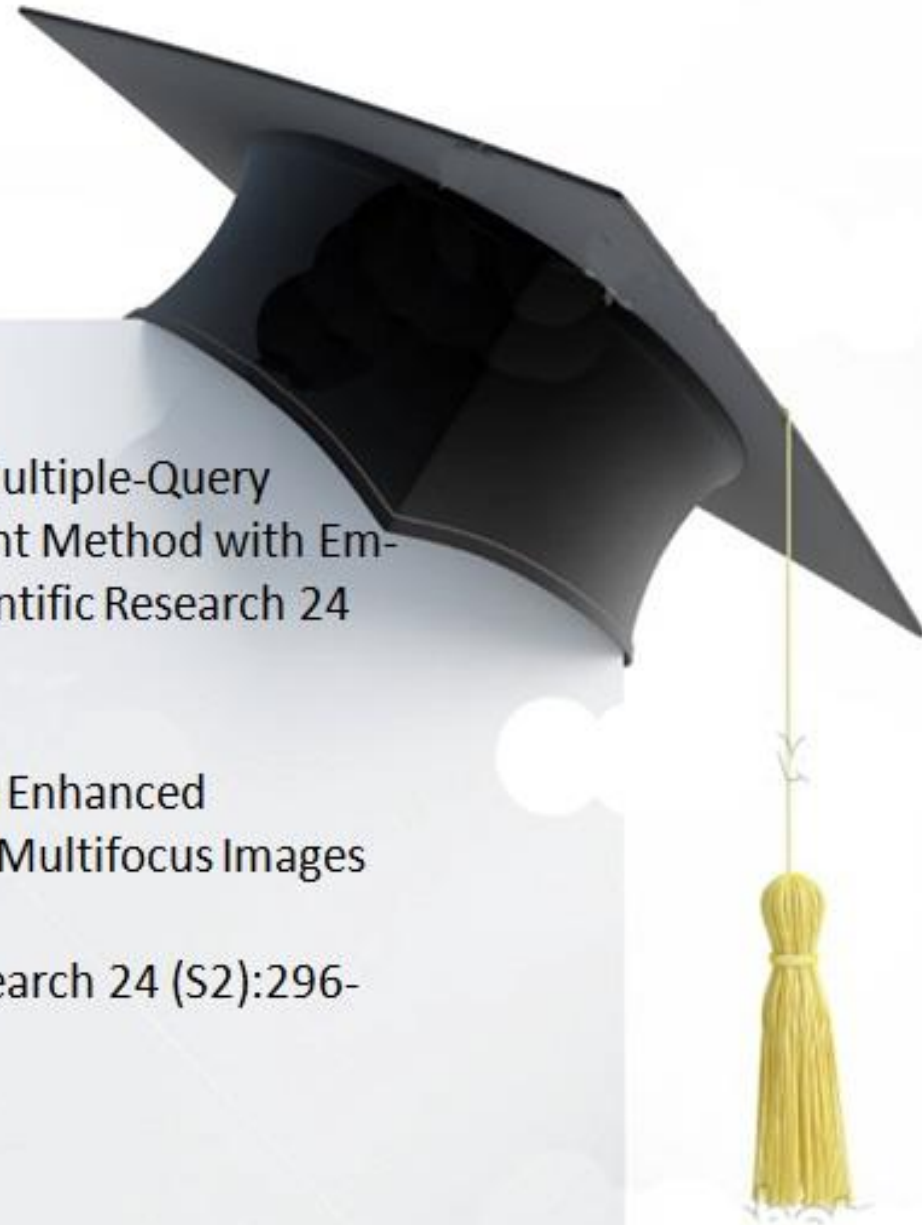
DR.C.VENNILA ,M.E., PH.D.
Professor

▪Dr.C. Vennila and M. Madhura," An Energy-Efficient Attack-Resistant Trust Model for Underwater Wireless Sensor Networks", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

▪Dr.C. Vennila and B. Rama prabha," An Energy Efficient Distributed Algorithm for Maximizing Life Time of Wireless Sensor networks", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

▪Dr.C.Vennila,S. Subathradevi, "An efficient delay minimization in system design using micro blaze with BRAM", International Journal of Research and Reviews in Applied Sciences And Engineering (IJRRASE), Vol 8. No.1 –2016 PP.197-203.

▪Dr.C.Vennila ,S. Subathradevi, "Novel design for BCD adder with minimized delay" International Journal of Research and Reviews in Applied Sciences And Engineering (IJRRASE) Vol 8. No.1–2016 Pp.211-218.

▪Dr.C.Vennila ,S. Subathradevi, M.Lakshmiprabha, B.Logeshwari, S.Malathy "FPGA based modified architecture of FFT with reduced delay using MACRO" International Journal of Research and Reviews in Applied Sciences And Engineering (IJRRASE) Vol 8. No.1 –2016 PP.204-210.

▪Dr.C.Vennila,Herald A, (FEB 2016) Comparison of Modulation Techniques for Underwater Optical Wireless communication at Mallipattinam,TamilNadu ,in the proceedings of ICETETS'16

DR.M.PADMAA ,M.E.,PH.D
Associate Professor

▪Dr.M.Padmaa, I.sherli axceelia," Implementation of Image Fusion using NIHS Transform and DCT for Multifocus Images", International Journal of Advanced Research Trends in Engineering and Technology (IJARTET) Volume 3,Special Issue 20,414-418 (2016)

▪Dr.M.Padmaa, T.Noorul binoona,""pareto depth with em-ranking for Multiple-query image retrieval" ,International Journal of Advanced Research Trends in Engineering and Technology (IJARTET) Volume 3,Special Issue 20,51-55 (2016)

▪Dr.M.Padmaa, T.Noorul binoona,"Multiple-Query Image Retrieval Based on Pareto Front Method with Em-Ranking",Middle-East Journal of Scientific Research 24 (S2): 127-131, 2016

▪ Dr.M.Padmaa, I.sherli axceelia," An Enhanced Implementation of Image Fusion for Multifocus Images Using Nihs Transform and DC" at
Middle-East Journal of Scientific Research 24 (S2):296-300,2016.

DR. S.RAJESWARI, M.TECH., PH.D
Associate Professor

- Dr.S.Rajeswari ,Dr.Arunmozhi, SA & Venkataramani Y, 'Analytical Model for Improved QoS and Security in Wireless Ad Hoc Networks,' Journal of Electronics and Communication Systems, vol.1, no.2, pp. 1-11, 2016.

- Dr.S.Rajeswari ,Dr.Arunmozhi.SA & Venkataramani Y , 'Weighted Fair Queuing for AEERG Protocol in MANET', Journal of Electronics and Communication Systems, vol.1, no.2, pp. 1-17, 2016.

DR. S.A. ARUNMOZHI ,M.B.A, M.TECH., PH.D
Associate Professor

• Dr.SA. Arunmozhi , Dr.Rajeswari S, & Venkataramani Y, 'Analytical Model for Improved QoS and Security in Wireless Ad Hoc Networks,' Journal of Electronics and Communication Systems, vol.1, no.2, pp. 1-11, 2016.

• Dr.SA.Arunmozhi,Venkataramani Y & Rajeswari S, 'Weighted Fair Queuing for AEERG Protocol in MANET', Journal of Electronics and Communication Systems, vol.1, no.2, pp. 1-17, 2016.

• Dr.SA.Arunmozhi, "A Cross Layer Approach to Improve QoS in Mobile Ad hoc Networks", Journal of Network Security Computer Networks, vol.2, no.2, pp.1-10, 2016.

DR.V.MOHAN ,M.E.,PH.D
Associate Professor

▪Presented a paper titled-changed detection using temporal features and feedback loop in international conference on computer and communication system at sri venkateswara college of technology(2016).

▪Attended workshop on writing Research papers for SCI indexed journals and preparing proposals for funding agencies on February 8 ,2016.

▪Dr.V.Mohan and S.Rupa –"medica or image compression based on segmentation" @ International conference of communication and signal processing,Adhiparasakthi engineering college, Melmaruvathur.

DR.P.SHANMUGAPRIYA ,M.TECH.,PH.D
Associate Professor

- Dr.P. Shanmugapriya and N. Priscilla Vilma Manorathi," Feature Extraction and Classification for Segmentation of Overlapping Cervical Cells by Multiple Level Set Functions Optimization",Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016.

- Dr.P. Shanmugapriya and N. Priscilla Vilma Manorathi," Segmentation of Overlapping Cervical Cells by Multiple Level Set Functions Optimization", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

- Dr.P.Shanmugapriya-"FLVQ based GMM in speaker verification"- journal of applied science.

DR. M.BARITHA BEGUM ,M.E.,PH.D
Assistant Professor

▪Dr. M. Baritha Begum and F. Melisha Sharon ," Codeword Substitution Technique for Hiding Data in Encrypted H.264/AVC Video", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016.

▪Dr. M. Baritha Begum and C. Abirami," Biometric Cryptosystem Based on Delaunay Quadrangle Structure for Fingerprint Template Protection and Person Identification", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

Mr.S.HARI PRASATH ,M.E.
Assistant Professor

- Mr.S.Hariprasath, Dr.M.Santhi: Optimal Implementation of Adaptive Bimodal Personal Authentication System in FPGA",,Australian Journal of Basic and Applied Sciences,Vol 1.No.1 (2016)

- Mr.S.Hariprasath, Dr.M.Santhi, "High Performance Implementation of Biometric Authentication System in FPGA,Middle-East Journal of Scientific Research,

- Mr. S.Hariprasath and V.S.P.Padmini;Multistage Denoising Based On DWT Thresholding".Middle-East Journal of Scientific Research

MS. A SHAMIM BANU, M.E
Assistant Professor

▪Presented paper titled —Survey on speech recognition at National conference on —Recent Trends in Advanced Communication System and Signal Processing (2016).

Mr. M.MAHENDRAN, M.E.
Assistant Professor

▪Attended a one day workshop on INTERNET OF THINGS AND ITS APPLICATION IN WSN. Venue: Anna university.

Ms. V.AARTHI ,M.E.
Assistant Professor

Ms.V. Aarthi, N.S. Pradeep and S. Prasanna Ajay," Joint Source and Channel Coding for Image Transmission Using Improved Turbo Codes in Awgn Channel", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

MS. P SIVAGAMASUNDHARI ,M.E.
Assistant Professor

Ms.P.Sivagamasundhari," Joint Source and Channel Coding for Image Transmission Using Improved Turbo Codes in Awgn Channel", Middle East Journal of Scientific Research, Volume 24 Number (S2), 2016

Mr. K. MALAISAMY ,M.E.
Assistant Professor

▪Presented apaper titled —Design of microstrip patch array antenna for KV-band application at International conference on computer and communication system on 2016 at Sri Venkateswara college of technology.

Mr. G.SIVAKANNU ,M.E.
Assistant Professor

▪Attended one day workshop on writing Research papers for SCI indexed journals and preparing proposals for funding agencies(2016).

Ms. V.RAMYA ,M.E.
Assistant Professor

▪Football transmit video   -International conference IJRTS Volume-3 issue /ISSN(online):2348-1439.

Ms. M.LAKSHMI PRABHA ,M.TECH.
Assistant Professor

▪Attended two days workshop on "signal and image processing" at sona college of technology, Salem.

STUDENTS ACHIEVEMENTS

Student Achievement :- (TECHNICAL EVENTS)

U.STEVE ARUL	ECE-B, IV YEAR	PAPER PRESENTATION, MAM COLLEGE, TRICHY	1ST PRIZE
		QCRYPTICS, VELAMMAL INSTITUTE, CHENNAI	1ST PRIZE
R.PRINCY SHEEBA	ECE-B, IV YEAR	ICTACT, YOUTH PRESNTATION	REGIONAL WINNER, TRICHY. NATIONAL RUNNER.
		QCRYPTICS, VELAMMAL INSTITUTE, CHENNAI	1ST PRIZE
S.DIANA EVANGELINE	ECE-A, III YEAR	BRAIN BLITZ, JJ COLLEGE OF ENGINEERING, TRICHY	1ST PRIZE
S.AFRIN SULTHANA	ECE-A, III YEAR	BRAIN BLITZ, JJ COLLEGE OF ENGINEERING, TRICHY	1ST PRIZE
R.AAYISHA	ECE-A, III YEAR	PROJECT EXPO, JJ COLLEGE OF ENGINEERING, TRICHY	3RD PRIZE
J.BALAJI	ECE-A, III YEAR	PROJECT EXPO, JJ COLLEGE OF ENGINEERING, TRICHY	3RD PRIZE

S.KAOVYA SAI SRI	ECE-A, III YEAR	PROJECT EXPO, JJ COLLEGE OF ENGINEERING,TRICHY	3RD PRIZE
M.ELAKKIYA	ECE-A, III YEAR	PROJECT EXPO, JJ COLLEGE OF ENGINEERING,TRICHY	3RD PRIZE
S.PRIYADHARSHINI	ECE-B, III YEAR	PPT , MAM COLLEGE	1ST PRIZE
		PPT, ANNA UNIVERSITY, TRICHY	PARTICIPATED
		PPT , JJ COLLEGE OF ENGINEERING	1ST PRIZE
		QUIZ, INDEPENDENCE DAY.	PARTICIPATED
		PPT,NIT, TRICHY	PARTICIPATED
S.VASIM HASINA	ECE-B, III YEAR	PPT , MAM COLLEGE	1ST PRIZE
		PPT, ANNA UNIVERSITY, TRICHY	PARTICIPATED
		ICTACT YOUTH TALK	PARTICIPATED
		WORKSHOP ON "S&S USING MATLAB" AND "LABVIEW" IN SCE	ATTENDED
		PPT , JJ COLLEGE OF ENGINEERING	1ST PRIZE

R.RAKSHANA	ECE-B, III YEAR	WORKSHOP ON "MATLAB" IN K.RAMAKRISHNA COLLEGE OF ENGINEERING	ATTENDED
		WORKSHOP ON "ROBOTICS" AND "HACKING" IN KESHAV INFOTECH	ATTENDED
M.VINODHINI	ECE-B, III YEAR	PPT, JJ COLLEGE OF ENGINEERING	PARTICIPATED
S.SWETHA	ECE-B, III YEAR	PPT, JJ COLLEGE OF ENGINEERING	PARTICIPATED
C.VINODHINI	ECE-B, III YEAR	PPT, JJ COLLEGE OF ENGINEERING	PARTICIPATED
VISHAL	ECE-B, III YEAR	PPT, JJ COLLEGE OF ENGINEERING	PARTICIPATED
SHANTHI PRIYA	ECE-B, III YEAR	PPT, JJ COLLEGE OF ENGINEERING	PARTICIPATED
VINCIYA PREETHI	ECE-B, III YEAR	PPT, JJ COLLEGE OF ENGINNERING	PARTICIPATED

Student Achievement :- (SPORTS)

S.ESHWARA PRASATH	ECE-A, III YEAR	CRICKET, ANNA UNIV ZONALS	SILVER
G.ANAND RAVISEKAR	ECE-A, III YEAR	CHESS, ANNA UNIV ZONALS	GOLD
R.BALASUBRAMANIYAN	ECE-A, III YEAR	BASKET BALL, ANNA UNIV ZONALS	GOLD
R.ARAVIND KUMAR	ECE-A, III YEAR	FOOT BALL, ANNA UNIV ZONALS	BRONZE
S.GOKULA VANI	ECE-A, III YEAR	BASKET BALL, ANNA UNIV ZONALS	SILVER
J.SAKTHIVEL AVINASH	ECE-B III YEAR	BASKET BALL, ANNA UNIV ZONALS	GOLD
M.SAMINATHAN	ECE-B III YEAR	HAND BALL, ANNA UBIV ZONALS	THIRD
P.VISHNU VARDHAN	ECE-B III YEAR	HAND BALL, ANNA UBIV ZONALS	THIRD
T.PRIYANKA	ECE-B, II YEAR	CHESS, ANNA UNIV ZONALS	GOLD
S.MONISHA SHREE	ECE-A, II YEAR	BASKET BALL, ANNA UNIV ZONALS	SILVER

Participated Events :- (Technical & Non-Technical Events)

K.NAVEEN KUMAR	ECE-A, IV YEAR	DANCE	PARTICIPATION
G.KRISHNA KUMAR	ECE-A, III YEAR	QUIZ, FESTEMBER,NIT TRICHY	PARTICIPATED
ANTO CLINTON	ECE-A, III YEAR	QUIZ, FESTEMBER,NIT TRICHY	PARTICIPATED
G.ANAND RAVISEKAR	ECE-A, III YEAR	QUIZ, FESTEMBER,NIT TRICHY	PARTICIPATED
J.ISSAC CLERENCE DENZIL	ECE-A, III YEAR	QUIZ, FESTEMBER,NIT TRICHY	PARTICIPATED
T.MUKESH RAJ	ECE-A, III YEAR	QUIZ, FESTEMBER,NIT TRICHY	PARTICIPATED
M.MOHAMED YASIR	ECE-A, III YEAR	QUIZ, FESTEMBER,NIT TRICHY	PARTICIPATED
M. THENMOZHI	ECE-B, III YEAR	IPT ON "IMAGE PROCESSING EMBEDDED SYSTEM"	ATTENDED

SARANATHAN COLLEGE OF ENGINEERING
DEPARTMENT OF ECE - LIST OF EVENTS
ACADEMIC YEAR-2016-2017

S. No	Events Conducted	Target Participants	Date
1	Hands on training of planar antenna using RF software tools and Fabrication of Antenna	Third year students	1.6.2016 - 4.6.2016
2	Circuit Design and development		20.6.2016 - 24.6.2016
3	Certificate course on signals and systems using Matlab	Second year Students	1.6.2016 - 4.6.2016
4	Programming and Interfacing Peripherals in Arduino Board		20.6.2016 - 24.6.2016
5	Guest Lecture on Emotional Intelligence for Professionals by Dr.S.N.Ragavendra, Professor, Bharathidasan Institute of Management	Third year students	07.09.2016

Expand your wisdom

DIGITAL JEWELLERY

Digital

Jewelery :-

#The latest computer craze has been to be able to wear wireless computers. The Computer Fashion Wave, "Digital Jewelry" looks to be the next sizzling fashion trend of the technological wave. The combination of shrinking computer devices and increasing computer power has allowed several companies to being producing fashion jewelry with embedded intelligence. Today's, manufacturers place millions of transistors on a microchip, which can be used to make small devices that store tons of digital data... The whole concept behind this is to be able to communicate to others by means of wireless appliances. The other key factor of this concept market is to stay fashionable at the same time. Digital Jewelry is the fashion jewelry with embedded intelligence. "Digital Jewelry" can help you solve problems like forgotten passwords and security badges. "Digital Jewelry" is a nascent catchphrase for wearable ID devices that contain personal information like passwords, identification, and account information.

They have the potential to be all-in-one replacement for your device's license, key chain, business cards, credit cards, health insurance card, corporate security badge, and loose cash. They can also solve a common dilemma of today's wired world - the forgotten password. By the end of the decade, we could be wearing our computer instead of sitting in-front of them.
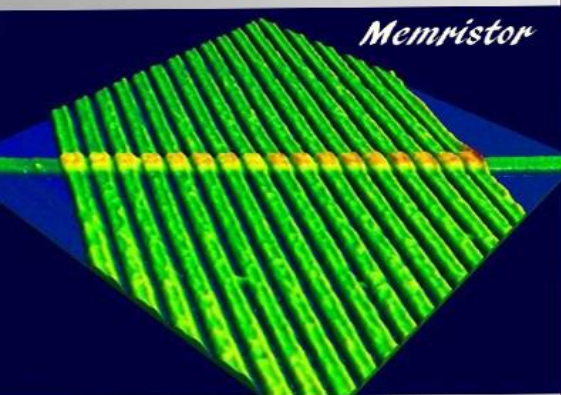
- S.Gokulavani
3rd year ECE 'A'

MEMRISTOR

Memristor

Memory + Resistor

Memristor

Memristors

In 1971 Leon Chua reasoned from symmetry arguments that there should be a fourth fundamental electronic circuit-board element (in addition to the resistor, capacitor and inductor) which he called memristor, a portmanteau of the words memory and resistor. Although Chua showed that memristors have many interesting and valuable properties, it wasn't until 2007 that a group of researchers from Hewlett Packard Labs found that the memristance effect can be present in nanoscale systems under certain conditions. Many researchers believe that memristors could end electronics as we know it and begin a new era of "ionics".

While commonly available transistor functions use a flow of electrons, the memristor couples the electrons with ions, or electrically charged atoms. In transistors, once the flow of electrons is interrupted (for example by switching off the power) all information is lost. Memristors "memorize" and store information about the amount of charge that has flowed through them, even when the power is off.

Memristor

The discovery of memristors paves the way to better information storage, making novel memory devices faster, safer and more efficient. There will be no information loss, even if the power is off. Memristor-based circuits will allow us to switch computers on and off instantly, and start work straight away.

For the past several years, Hewlett Packard has been working on a new type of computer based on memristor technology. HP plans to launch the product by 2020.

- Vishnu Varadhan
3rd yr ECE 'B'

ELECTRONIC WASTE MANAGEMENT

What should we do about electronic waste?

Welcome to Madre de Dios, or 'Mother of God' in Spanish. Located in the Peruvian Amazon basin and home to the famous Tambopata National Reserve and Lake Sandoval, Madre de Dios has aptly earned the sobriquet of "Paradise of Biodiversity" for being one of the richest forest ecosystems on our planet.

However, peeking through its lush exterior, one sees the toll that decades of illegal and unchecked artisanal gold mining have taken on this region. Over 100,000 acres of expansive virgin rainforests in this region have been ravaged into toxic wastelands. Reports suggest that over 500,000 people are directly and indirectly engaged in illegal mining across Peru, and mining camps in Madre de Dios are at the epicenter of this activity.

Today, Peru is the sixth largest gold producer in the world (and the largest in South America). Yet over 20% of the gold produced in Peru is illegally mined; in fact, gold surpasses cocaine as Peru's largest illegal export.

In order to extract gold, miners combine mercury, a known neurotoxin, with gold-containing silt. They tread on the mixture with their bare feet so that the gold clings on to the mercury forming an amalgam. The amalgam is then heated over open flames to recover gold, often in cooking utensils inside homes, releasing toxic mercury fumes into air and water streams. It is estimated 45–50 tonnes of mercury are used each year in Madre de Dios to recover gold. A Carnegiestudy found that nearly 80% of adults and 60% of fish in the region had levels of mercury in their blood higher than international safety limits.

The catastrophic impacts of gold mining in Madre de Dios go far beyond the health consequences. The illicit gold mining activities have created a hot bed for flagrant human-rights abuses: rampant exploitation of desperate locals, forced child labor and sex trafficking of teenage girls coerced into the service of illegal miners

More than 11,000 miles away, on a different hemisphere and continent, lies Guiyu in the Guangdong province of China. Guiyu is also inflicted with 'the Golden Curse, but its urban rendition.

Fifty years after Gordon Moore first speculated his now-famous law (that microprocessors would get smaller, faster), his prediction has meant different things to different people. To Silicon Valley technophiles, it means sexy and sleek new phones, watches, tablets and phablets every eighteen months. To residents of Guiyu, it means 1.6 million tonnes of electronic waste (e-waste) at their doorstep every year.

The UN estimates that nearly 50 million tonnes of e-waste are generated globally each year. With nearly 10% of the world's gold supply (and over quarter of the world's silver supply) used in fabrication of electronics annually, end-of-life electronics represent a gold mine – literally.

Yet, today, over 80% of e-waste is landfilled, resulting in the leaching of toxic elements such as mercury and lead into the ground. Most of the e-waste that doesn't end up buried underground is illegally shipped to places like Guiyu, where scenes of children sitting on piles of our defunct laptops and keyboards foretell a dystopian WALL-E-esque reality.

Further, locals use primitive and hazardous recovery methods, such as cyanide leaching and open burning of circuit boards, to recover precious metals. In the process, they release highly toxic dioxins and furans, destroying their own health and the environment. Guiyu has historically been cited as one of the most toxic places on the planet, alongside Chernobyl in Ukraine. Despite a crackdown by local governments,reports suggest that over 80% of the children in Guiyu are at risk of lead poisoning and nearly 90% of adults suffer from neurological damage.

If someone from another world tuned into Channel Earth, the juxtaposition of the two tragedies would be mindboggling: people die from digging for gold. And then they die from melting it and burying it.

And this whole time, the solution stares us in the face – to source 10 ounces of gold (the same as 30 shiny 18 karat wedding bands), we could continue to dig up 100 tonnes of dirt and gold ore. Or responsibly recycle a single tonne of cell phones.

Electronics Waste

- Aksharaa
  3rd yr ECE 'A'

THE INTERNET of THINGS

HOW IoT CAN CHANGE THE WORLD??

The Internet of Things is creating quantifiable world, where people and businesses can manage their assets in better informed ways, and can make more timely and better informed decisions about what they want or need to do. By sensing our surrounding environment, the IoT will create many practical improvements in our world, increasing our convenience, health and safety, while at the same time improving energy efficiency and comfort.

IoT devices can be classified in three categories:

(1) wearables,

(2) smart home devices, and

(3) M2M devices.

The first two categories are the most important for consumers. 'Wearables' are the devices that people carry with them, which usually connect via Bluetooth to a smart phone, and from there to the Internet. This category includes devices such as smart watches, fitness bands and devices to help people to live more 'mindfully' – increasing the wearer's awareness of how well they sleep, how much they move around, monitoring their vital signs, etc.

Smart home devices are also part of the IoT and usually connect to the Internet via ZigBee low power wireless communication and the home router. These include all domestic devices, from lights and light switches to motion sensors, thermostats, door locks and automated curtains. Via its Wi-Fi connection to the router, the smart phone also becomes an online dashboard and control device for Smart Home applications.

The third category, M2M (Machine to Machine) devices, comprises devices that are directly connected to the cellular network, such as cars that can report their location (in case of an accident or theft), or vending machines that can call in when their stocks are running low.

Useful information extracted from the data can coach people by reaffirming when things go as planned or by alerting or taking action if something goes wrong and data analytics can be used to compare situations, to coach and to provide feedback to help make improvements. People are interested in the IoT if it helps them to improve aspects of their lives.

We will be able to make better informed, more accurate and more timely decisions; and decisions that will improve our lives, save us money, and may even save our planet. The IoT will make the difference.

-.Krishna kumar
3rd year ECE 'A'

Building Human Organs

Building Human Organs

Oganovo is a company based in San Diego, California.

Their latest science invention is a technology (novogen) which allows living tissue cells to be assembled into patterns and complex structures, such as organs. Organovo has partnered with Invetech. a company based in Australia, to develop a bio-printer.

The device prints (places) human cells in a three-dimensional matrix to construct human tissue.Building human organs cell-by-cell was considered science fiction not that long ago," says Fred Davis of Invetech. Currently, the bio-printer can grow blood vessels. It is anticipated that within five years the device will construct arteries and by 2020 sophisticated organs will be built by the device.

- Vishnu Varadhan 3rd yr ECE 'B'

AN APP TO HELP
DEMENTIA PATIENTS
TO FIND MEMORIES

AN APP TO HELP DEMENTIA PATIENTS TO FIND MEMORIES

People suffering from Alzheimer's and other forms of age related dementia sometimes have trouble recognizing friends and family or knowing what to talk about when they visit. A new app created by a group of Cornell students offers to help patients stay connected to their memories and thus to their friends and family.

"REMEMBER ME" is a smart phone app developed by an Engineering master's degree graduates.At some point of time we interact with people who suffer from memory loss. This app was build to help them to bring back their memories.

* The app is installed on the phones of the patient and their friends, family and caregivers. Using GPS tracking and a connection to the cloud, the app can flash an alert to the patient when one of the group members is nearby. The phone tells the patient who is approaching and his or her relationship to that person, and it displays a slide show of previously uploaded pictures. If the patient receives a text or phone call from registered in the app, a screen pops with similar information.

*The app can assist with reminders based on the stored facts and previous conversations, perhaps suggesting questions to ask based on information it has about life events.

* The developers plan apply natural-language processing techniques on the patient's speech patterns to predict what the patient might say next. The app also reminds the patient about important life events with "Call this person" suggestion.

* Caregivers can send reminders to take medicine, make phone calls or complete particular tasks and they can use the GPS feature to locate the patient."REMEMBER ME" is currently an Android app, with an ios version in development.

- S.Priyadharshini
3rd year ECE'B'

SECOND EARTH

Scientists use a telescope . This telescope is called the Kepler telescope. It is powerful.The scientists find a planet with it. The planet is 1,400 light years away. The planet is called Kepler-452. It is 60 per cent bigger than Earth.The planet moves around a star. This star is like our sun. The planet is at a good distance from the star. There can be liquid water on the planet. Maybe, life exists on the planet. Difficult words: telescope (a thing for looking at stars and planets), distance (the space between two things; how far something is), liquid (when something is like water—it is not ice and it is not gas).

2nd Earth

- A.Vignesh
3rd year ECE 'B'

Transparent Phone

Eco Mode

Transparent Smartphones

Inventors, Jung Won Seo, Jae-Woo Park, Keong Su Lim, Ji-Hwan Yang and Sang Jung Kang, who are scientists at the Korean Advanced Institute of Science and Technology, have created the world's first transparent computer chip.

The chip, known as (TRRAM) or transparent resistive random access memory, is similar to existing chips known as (CMOS) or metal-oxide semiconductor memory, which we use in new electronics.

The difference is that TRRAM is completely clear and transparent. What is the benefit of having transparency?

"It is a new milestone of transparent electronic systems," says Jung Won Seo. "By integrating TRRAM with other transparent electronic components, we can create a total see-through embedded electronic systems."
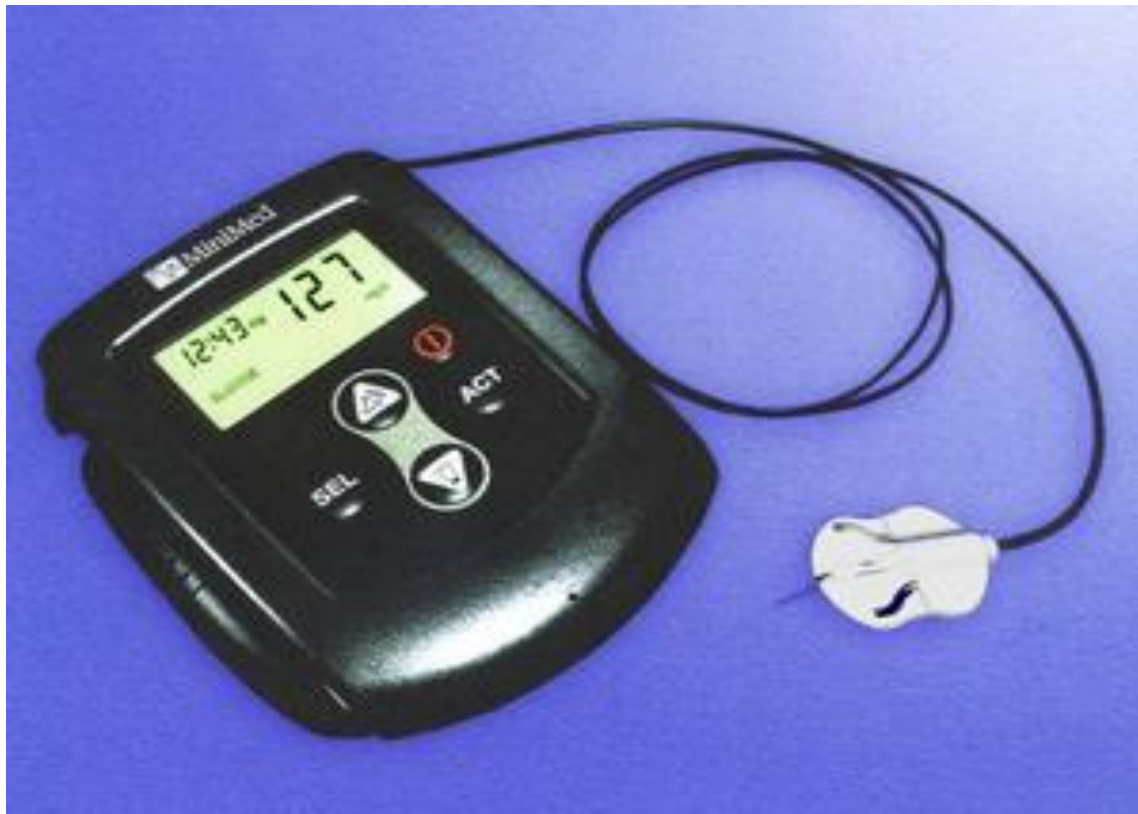
The technology could enable the windows or mirrors in your home to be used as computer monitors and television screens.

This technology is expected to be available within 3 to 4 years

-M.K.Keshavarajan
3rd year ECE 'A'

CONTINUOUS GLUCOSE MONITORING

CGM:-

Continuous Glucose Monitoring (CGM) is an FDA-approved device that provides real-time glucose readings, throughout the day and night, allowing people with diabetes to see their glucose levels and track how quickly they're increasing or decreasing. It is the one type of the wearable body network system. CGM has been an established technology since 2006 and performance and advances throughout the years have made today's system increasingly accurate. CGM systems use a tiny sensor inserted under the skin to check glucose levels in tissue fluid. The sensor stays in place for several days to a week and then must be replaced. A transmitter sends information about glucose levels via radio waves from the sensor to a pager like wireless MONITOR.

The user must check blood samples with a glucose meter to program the devices. Because currently approved CGM devices are not as accurate and reliable as standard blood glucose meters, users should confirm glucose levels with a meter before making a change in treatment. A typical CGM provides upto as many as 288 glucose readings per day (once every 5 minutes). CGM does not completely eliminate the need for blood glucose meter readings but provides additional information for more informed treatment decisions and improved glucose control. CGM can be used by people with type-1 or type-2 who are concerned with their diabetes management. To successfully managed diabetes, a monitoring a system is needed to consistently check the glucose levels.

- J.L.Lincy vanthana
3rd yr ECE 'B'

HUGE TELESCOPE :-
TO LISTEN TO THE ALIENS...

Will you believe that when I say PROMETHIUS, INTRUDERS, XTRO are gonna happen in the real world???..yes its happening...

CHINA is constructing a huge, world's gigantic radio telescope of 500 meters(1,640 feet)which is set at the top of the remote mountain quiannan region to listen to the weak messages from outer space it is headed by NAN RENDONG, the chief scientist of fast project who says that 'radio telescope is like a sensitive ear listening to tell meaningful radio messages from white noise in the universe' signals are believe to be coming from the planet GLIESE 581d which is 22light years from earth beyond our solar system it would be reached in 22 years if space craft travels at the speed of light (ongoing research)....

Huge Telescope

-S.Vasim Hasina
3rd ECE 'B'

Smart City

The capacity for storage is fast becoming a vital component of smart city infrastructure

Automated road traffic management systems, surveillance systems and storage for the vast amount of data being generated will make up a core part of the future smart city infrastructure. Much of this information is sensitive so the storage technology used needs to be the best available.

Understanding how storage works and how end users can access it is now the focus for storage companies as they look to facilitate the adoption of cloud-based data centres. As smart cities grow, video surveillance is set to become a key target for storage companies over the next few years and as the cost of network video surveillance cameras drops below $100 so the cost of implementation will fall. As a result, the most difficult task for storage companies is ensuring the cost of storage or cost per gigabyte falls in-line with this while maintaining high standards of performance, compliance and security over those data management and storage systems.

There is an accelerated demand for security cameras in cities around the world and, according to a recent IHS report, the global market for video surveillance will grow by 7% in 2016 with some 66 million network cameras shipped globally, of which 28 million will have high definition capabilities. This proliferation of security cameras is set to see one camera deployed for every 14 people in London and body-worn cameras being used in Beijing as part of its Metro project. Overall, the video surveillance industry is set to grow at a Compound Annual Growth Rate (CAGR) of 10% to $24.2 billion by 2019.

This increasing demand subsequently means the need for RAW capacity is going to increase (RAW is a file format, much the same as a JPEG). Surveys suggests that the total RAW capacity of enterprise storage use for video surveillance is set to increase by 48 per cent this year, and while this demand doesn't just affect the cost per gigabyte and required performance of storage, flexibility is also a necessity for data centre providers. They need to service an oscillating consumer audience demanding open API access for seamless integration into a plethora of technology systems and integrated services – and provide end-to-end security too.

This demand for open API access also comes with an expectation of performance quality and a high IOPS desirability. Demands which mean that it is essential that storage operates with Edge-Core architecture, typically used in flash, which uses an Edge filer or Edge filer clusters to provide low-latency data writes and reads - rather than using traditional NAS architecture which has much greater latency and requires data to be transferred through a network to a filer and then to repositories and back again

- Srivatsan
  3rd yr ECE'B'

jolt of poor

Jolt of Poor :-

*There was a poor Clerk worked with very meagre salary. He had a small house without proper shelter .He had a very good wife. After several years of his marriage, he was blessed with a daughter. They lived like "poor as a Church mouse". The daughter was very active. The poor Clerk always goes his office by walk. His daily life was like "do or die" status.

*Opposite to his house there was a rich Macho. He was a Chief Executive Officer. He had a very big house. He too had a wife, also a twelve year old daughter. He lived a luxurious life. He had a luxurious car. He was called "Avaricious" by others.

Summer holidays arrived. The poor Clerk's daughter played with the Macho's daughter. The Macho's daughter was elder to the Clerk's daughter. The Clerk's daughter had discovered some activity followed by the Macho's family. She came back home. She told her father about what she had observed. Immediately the Clerk wrote a letter to his superior officer for the rise of his salary. He described his letter as follows, "I am afraid that you might lower value me that I requested you salary rise for luxurious life, for a beautiful house, for a luxurious car or bike. But I requested salary rise, just for my daughter that she observed with jolt that there are some people who will have food for three times a day".
(This Story does not contain the alphabet"N")

- S.Bharathan.
  II year ECE-A

Electronics software

- **know the list of design softwares**

  CAD software

  OpenCascade (OSS)

  Alibre Xpress (Free edition, need to register)

  Google SketchUp (freeware)

  A9CAD (General purpose 2D, freeware)

  BRL CAD (solid modelling system, OSS)

  ECAD software

  KiCad (OSS)

  Eagle (Free edition)

Mathematics/Numerical

  Scilab (sorta OSS, alternative to MATLAB)

Analysis

  Spectrogram Version 16 (Wave analysis. Freeware)

  CANDE- Culvert ANalysis and DEsign (design and analysis of buried structures. Free version)

  SNAILZ (stability analysis of slopes. Free version)

Circuit Analysis and Schematics

PSpice (student edition)

Circuit Maker 6 (student edition)

Multisim Designsuite 9 (freeware edition. Im not sure of the limitations yet)

SwCADIII (free version)

TINA-SPICE-Based Analog Simulation Program from TI (Circuit Simulator)

Compiler

Dev C++ 5 beta (OSS)

Dev C++ 4.9.9.2 Portable (OSS. It can run off a USB, pretty useful)

Visual Basic 2008 Express, Visual C++ 2008 Express (Freeware IDE's from Microsoft. Has some limitations, but ideal for students and hobbyists)

Microcontroller stuff

- PIC

MPLAB IDE (free version)

HI-TECH PICC-Lite (freeware with some limitations, quick registration)

WinPic800 (firmware burner)

PIC16F87x / 16F87xA bootloader (freeware)

Proton Development Suite (PICBASIC, free version available)

FlashMagic (Free. Programming Tool For NXP Semiconductors)

Code Warrior (Product Summary Page)

Code Warrior (Development Studio,free version with some limitations)

Bascom AVR (IDE)

Some Softwares Related to 8051

Embedded RTOS

Salvo Lite (free version with some limitations)

PuTTY (great free telnet and SSH client)

PuTTYCM (useful connection manager for multiple tabs and instances)

Wireshark (awesome network protocol analyzer)

GNS3 (cisco network simulator based on Dynamips. Note: Still need a licenced IOS)

Robotics

Microsoft Robotic Developer Studio (Express edition. Robot control and simul
Roborealm 1.0 (freeware version. Latest one is a trial version)
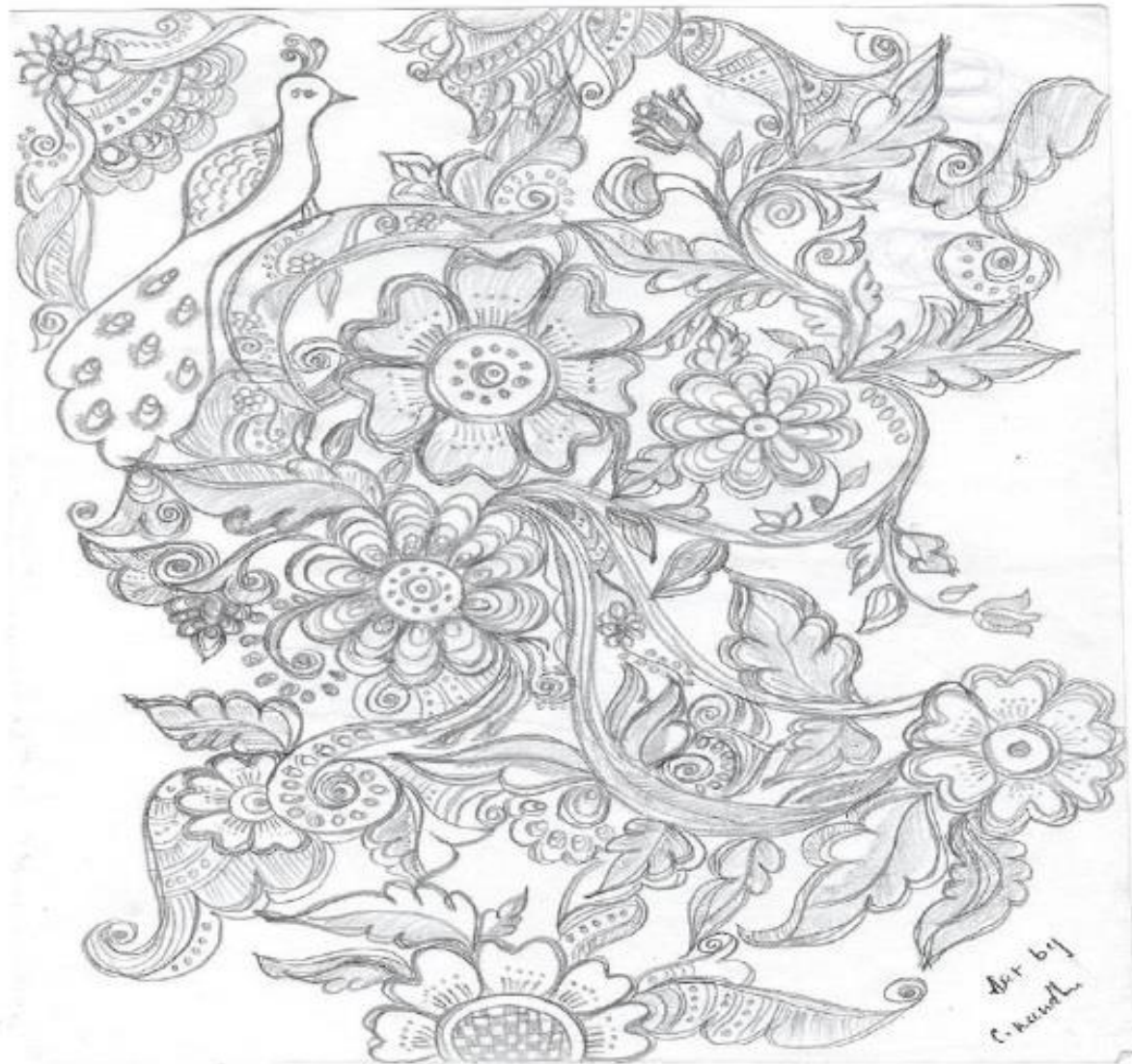PHUN (a super fun physics simulator. xhx used it for our CE bot project)

Testing Tools

Selenium (web application testing tool. Discussion Thread ⇢

- Aksharaa
3rd yr ECE 'A'

Our Picasso :-

C. Nandhini
3rd year ECE'B'

— BY
PRIYADHARSHINIS

S.Priyadharshini
3rd year ECE'B'

R.Siva Chandiran
3rd year ECE'B'

M.Vinodhini
3rd year ECE'B'

A.Vignesh

3rd ECE'B'

FLOWER FAIRY

ART BY
P. JENCY LEENA
ME-CS-II yr

P.Jency Leena

M.E(C.S) 2nd year

EYES ARE THE MIRRORS OF — SOUL

Art by: S. Yasaswene

S.Yasaswene

3rd year ECE'B'

Kavithai.....

சாலை விபத்தில் மரணம் கண்ட
மாணியின் ஒருவனின் மனசாட்சி...,

கதிரவன் தன் கதிர் சுருக்கும் நேரம்...,
அக்காரிணியுள் மறைந்து கொண்டிருந்த
                                    மேகம்.,
சிறுமழை துளிகள் தந்த இனிர்காற்றுமாய்
இப்படியாய் கிளைந்த ஒரு மாலை நேர வானிலையில் அன்று...,
எந்தன் சிறு நெடுஞ்சாலை பயணம்...,

ஸ்கூட்டின் வாசல் ஓரமாய் நின்ற என் கிரு சக்கர
                                    வாகனம்
அதை, ஏவுகணையாய் பாய்த்தி,
         விண்ணையில் ஊசி இடம்பிடித்தேன்...,
              கயிறுறான கணைதனாய்...,

விண்ணில் பறக்கும் மாயையில் எந்தன்
                         மதி மயங்கி,
கை விரல் தலை மயிர் கோதிய படி
              எந்தன் வாகனமோ விரைய...,
சீறுன சிறுங்கிம் செல்போன் ஊசி
கார்றுள் பரவி சந்தன் செவிமினா சுணாக்க.,
செவலை எடுத்து செவிலில் வைத்தால்
         அழைத்ததோ நொடி...,

மதி மயக்க என் வண்டி ஓட்டத்தில்
அக்கணம் ரெடியும் மயாங்க...,

சிறு நெடுஞ்சாலை சந்திப்பில்.,
சிவப்பு ஒளியை காணல் கடந்து போன கணப்பொழுதில்.,
தூக்கி எறிந்த சிறு பந்தாய்
         காற்றில் பறந்து போனேன் உணர்வுகளின்றி.,

தரைமேல் வந்து தலைமோதும் கணமே உணர்ந்தேன்.,
மெலிர்ந்திற வாகனம் ஒன்று என்னை
              வானில் தூக்கி விட்டதெனா.,
நெடு ஊரம் காட்டும் கிராந்து விகிதைதக்க
              நெடும் கூட்டமாய்
ஒரு கூட்டத்திற்கு விதை பொருளாய் ஆனேன்
                         அன்று !

பெய்யும் சிறு மழைதுளி நீரில் எந்தன்
              கரைந்த கூறுகள் கரைந்து கொண்டிருக்க
மெய்யு ஸோ அதிரி மிகந்தபடி...,
இதய இயக்கத்திலொ சிறு மாற்றம்.,
சுடி வீழ் பார்வைக்கோ எதோ ஒரு சுமார்ந்தம்...,

அரைஞாண் நேர சமயத்தில்
    ஆம்புலன்ஸ் ஒளியுடன் ஆள் பதிநிறி
அணைந்தது எந்தன் மெய்யில் மடம்..,

அம்மாவின் அழாலும்
    அப்பாவின் கதறலும்.,
அரைமின் சுவரை மோதி எந்தன்
        காலிணை இரண்டு
ஐயகோ மரத்து மரத்து போனது என்
            இதயம்..;

விசிபிடம் மணிஇல ஒரு ஏலாக்கம் கேட்டால்..,
விடை உன் வசம் என்று எடுத்து சென்றது
            நரகத்திடம்....,

இன்னொ நான் விடை கண்டிட்டேன்.., இன்னும்
விடை உணரா திரியும் மானிடர்களில்
        சரிரா இலாக்கிகளேன்,
        என்னை பாருங்களேன்..!

விடை புரிந்தால் !!)

அன்று சுவைகோத மரந்திரிந் தால்.,
        தலைகவசம் அணிந்திருபேன்..,
இசைல அணைந்திருந்தால்
        மினினை உணர்ந்திருபேன்....,
வேகம் குறைந்திருந்தால்
        என் விதியண வென்றிருபேன்...,
சாலை விளிகளை பயின்ன
        நடைபிடித்திருந்தால்
உங்களோடு உயிரோடு
        வென்றிருபேன்...,
என் இடுபேரிடோடு மகிழ்ந்திருபேன்...,

லெட்சியம் பல கண்டிருபேன்..., அதனால்
சாலை விதி மரந்து போய்
        என் விதி மணி போனதே!!!

                    I
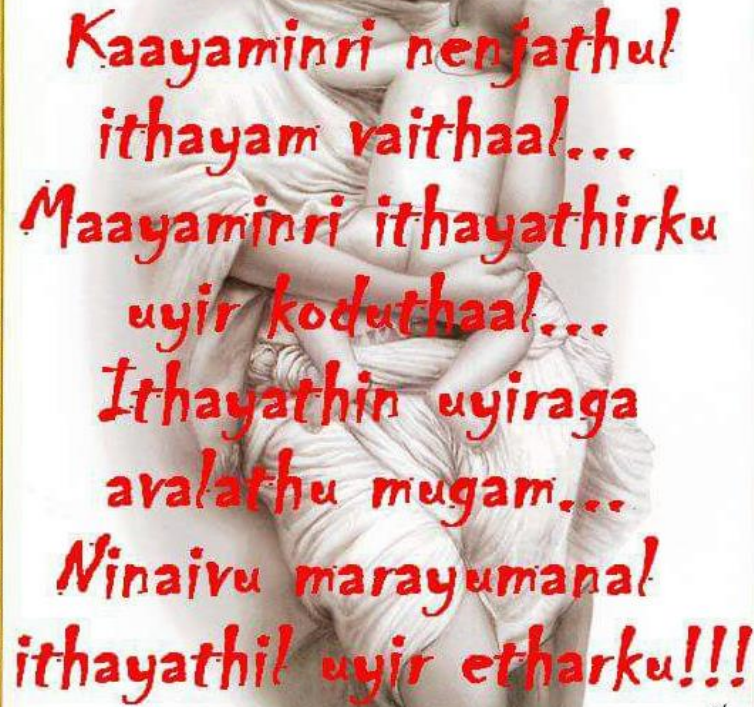!! MISS MA FRIEND
(இந்த கவிதைக்காக வாரணமு
மானிடப் பாலி.)
MISS U MUTHU

- *Purusothaman*

3rd yr ECE'B'

Mother's love

Kaayaminri nenjathul
ithayam vaithaal...
Maayaminri ithayathirku
uyir koduthaal...
Ithayathin uyiraga
avalathu mugam...
Ninaivu marayumanal
ithayathil uyir etharku!!!

R.Siva Chandiran

3rd year ECE 'B'

Picturesque..

P.Thiruma Valavan
3rd ECE 'B'

S.Padma
3rd ECE 'B'

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