SARANatHAN COLLEGE of ENGinEERinG

PROUDLY PRESENTS



E-MAGAZINE FROM THE DEPARTMENT of ELECTRONICS and COMMUNICation ENGINEERING

AN HALF YEARLY PUBLISH BY STUDENTS of ECE



FROM THE HOD's DESK -

I am delighted to see the department e-magazine getting released for this semester (2019-2020). It's been customary for our department to release an e-magazine once every semester. This initiative is an excellent way to prove and exhibit the skills of the staff and the students in technology and artistic capabilities. I really hope this would kindle a spark in the minds of the students who are yet to contribute towards the progress of the initiative in the upcoming years. I extend my sincere thanks to the people who have contributed to this publication to enhance its perfection and beauty through their articles, drawings and photography. I congratulate the entire editorial team for their hard work and dedication that has resulted in this publication of our department e-magazine "WIZARDZZ V.16."

All the best students!

FROM THE EDITOR'S DESK

We would like to thank the Management and all the staff who have supported the 'WIZARDZZ' and for having trust in the Editorial board by giving us full freedom to choose the contents and design for our magazine. We hope that this e-magazine serves as a pillar of motivation for each and every other student who is yet to be recognized as an Achiever and to carry this legacy forward. The student fraternity has wonderfully supported us in making this magazine a huge success.





Nithya G

This E-MAGAZinE would have been impossible to accomplish without the impeccable support from the family of Electronics and communication department. We extend our thanks to our beloved HOD Dr. M.Santhi for giving us this opportunity and Dr. S.A.Arunmozhi for guiding us in this venture. THANK YOU ③





Moohammed Sattar

DEPARTMENT of ELECTRonICS and COMMUNICation ENGinEERinG

Vision of the Department

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

Mission of the Department

1. M1: To enable budding engineers to obtain technical exposure in various areas of Electronics and Communication Engineering.

2. M2: To nurture career improvement.

3. M3: To initiate and sustain research activities in the department in cutting edge areas of Electronics and Communication Engineering.

4. M4: To develop professional and ethical attitude in the students.

Program Educational Objectives (PEOs)

Graduates of Electronics and Communication Engineering will

PEO1:

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

PEO2:

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.

PEO3:

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

PEO4:

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

PROGRAM OUTCOMES (POS)

Engineering Graduates will be able to:

1. Engineering knowledge:

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

2.Problem analysis:

Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3.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.

4. 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.

5. Modern tool usage:

Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. 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.

7. 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. 8. Ethics:

Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. individual and team work:

Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. 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.

11. 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. 12. 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.

Program Specific Outcomes (PSOs)

Graduates of Electronics and Communication Engineering will be able to:

PSO1:

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

PSO2:

Apply emerging information and Communication Engineering Techniques to solve real time problems

Achievements

Student Name	Competition	Venue and Date	Position
Asik Babu A, 3 rd Year, A Section	Project Presentation	PSG institute of Technology and Applied Research, Coimbatore on 2/6/2020	First Place
T.Vaishnavi, 3rd Year, B Section	Paper Presentation	K.Ramakrishnan College of Engineering on 1/24/2020	Second Place
T.Vaishnavi, 3rd Year, B Section	Paper Presentation	M.I.E.T Engineering College on 2/22/2020	First Place
Sowmiya K, 3 rd Year, B Section	Euphoria	PSG institute of Technology and Applied Research, Coimbatore on 2/6/2020	First Place
Vanitha K, 3 rd Year, B Section	Paper Presentation	K.Ramakrishnan College of Engineering on 1/24/2020	Second Place
Vanitha K, 3 rd Year, B Section	Paper Presentation	M.I.E.T Engineering College on 2/22/2020	First Place
Vanitha K, 3 rd Year, B Section	Just A Minute	K.Ramakrishna College of Engineering on 1/24/2020	First Place

Student Name	Competition	Venue and Date	Position
S. Rakshana, 2nd Year, B Section	Talenzia2020	Saranathan College of Engineering on 2/2/2020	First Place
Bharath Hari S, 2nd Year, A Section	Project Expo Chemistry	Project Expo Chemistry on 2/28/2020	Third Place
Karthiga Devi .G, 2nd Year, A Section	Competition,"paper Azzic "	Paper Azzic, Karur on 3/9/2020	First Place
Priya.S, 2nd Year, B Section	,"Project Expo""- RYOTZ'20	Mahendra College of Engineering-namakkal on 2/4/2020	First Place
Thenmozhi A, 2nd Year, B Section	Project Expo	Mahendra Engineering College, Namakkal on 2/4/2020	First Place
Thenmozhi A, 2nd Year, B Section	"Brain Teaser	Ryotz '20, Mahendra Engineering College, Namakkal on 2/4/2020	Second Place
K.Vaishnavi, 1st Year, B Section	Sports (team) event, Khokho	Saranathan College of Engineering	First Place
Jenifar Sheeba.A , 1st year, A Section	Sports (team) event, Khokho	Saranathan College of Engineering	First Place
Akila G, 1st Year, A Section	Sports (team) event, Khokho	Saranathan College of Engineering	First Place

Student Name	Competition	Venue and Date	Position
Afrah Zainab Khan , 1st Year, A Section	Talenzia 2020 English Quiz	Saranathan College of Engineering on 2/29/2020	First Place
S.Kawsika, 1st Year, A Section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020	First Place
S.Rengalaxmi, 1st Year, B Section	Maths Paper Presentation	Talenzia at Saranathan College of Engineering on 2/29/2020	Second Place
S Sarulatha, 1st Year, B Section,	Ad-wizards	Care College on 2/28/2020	Second Place
S Sarulatha, 1st Year, B Section,	Maths paper presentation	Saranathan College of Engineering on 2/29/2020	Second Place
P.Kedzi Jero Kathrin, 1st Year, A Section	Sports Event, Basketball Zonal	Saranathan College on 10/14/2019	Second Place
S. Yogesh, 1st Year, B Section	Talenzia 2020 (Find Me)	Saranathan College of Engineering on 02/29/2020	Third Place
Shruthi P. S, 1st Year, B Section	Talenzia 2020	Saranathan College of Engineering on 02/29/2020	Third Place



Student Name	Competition	Venue and Date
T.Priyadharshini, 3 rd Year, B Section	Paper Presentaion	Ecentra 2020 - K.Ramakrishnan College of Engineering, on 2/8/2020
Saranya M,3 rd Year, B Section	Paper Presentation	Ecentra 2020 - K.Ramakrishnan College of Engineering, on 2/8/2020
Abdul Rahman M, 3 rd Year, A section	Smart india Hackathon	Saranathan College of Engineering, Trichy on 1/23/2020
J.Srijayarohini, 3rd Year, B Section	Paper Presentation	K. Ramakrishnan College of Engineering on 2/8/2020
B.Sujitha, 3 rd Year, B Section	Paper Presentation	M.Kumarasamy College of Engineering on 2/29/2020
Sharumathy.S.B, 3 rd Year, B Section	Paper Presentation	Ecentra 2020 in KRCE on 2/8/2020
Sharumathy.S.B, 3rd Year, B Section	Technical Test	Gateforum-trichy on 1/26/2020
Alagammai.K, 3 rd Year, A Section	Competition, Alconesy 2k20	Alconesy 2k20 - Alagappa Chettiar Government College of Engineering and Technology, Karaikudi on 2/27/2020
S.Loramary, 3 rd Year, A Section	Alconesy 2k20	Alconesy 2k20 - Alagappa Chettiar Government College of Engineering and Technology , Karaikudi on 2/27/2020
Sharon Francis A,3 rd Year, B Section	Paper Presentation	Vidhyuksha 2020 at Hindustan College of Engineering, coimbatore on 2/29/2020

Student Name	Competition	Venue and Date
Sharumathy.S.B, 3 rd Year, B Section	Zeal Expertia 2020	Zeal Expertia 2020 on 5/1/2020
Jaanisha L, 3 rd Year, A Section	Paper Presentation	Anna University- Chennai on 3/6/2020
Vinothini.N, 3 rd Year, B Section	Paper Presentation	ECENTRA 2020@kramakrishna College of Engineering on 2/8/2020
S.A.Hardhini, 3rd Year, A Section	Project Presentation	Alconesy 2k20 - Alagappa Chettiar Government College of Engineering and Technology , Karaikudi" on $2\!/27\!/2020$
S.A.Hardhini, 3rd Year, A Section	Project Presentation	Hertz 20 in Care Group of institutions, Trichy" on 2/19/2020
S.A.Hardhini, 3rd Year, A Section	Paper Presentation	Anna University – Chennai on 3/6/2020
Subramani G, 3 rd Year, B Section	Paper Presentation	Auraa 2020 at Government College of Engineering -Srirangam on 3/3/2020
Preethi.M ,3rd Year, B Section	Paper Presentation	Vidhyuksha 2020 at Hindustan College of Engineering, coimbatore" on 2/29/2020
Shahin Sulthana M W, 3 rd Year, B Section	Paper Presentation	Vidhyuksha 2020 at Hindustan College of Engineering, coimbatore" on 2/29/2020
Sowmiya K, 3 rd Year, B Section	Paper Presentation	M. Kumaraswamy College of Engineering, Karur on 2/29/2020 -Participation
Jaanisha L, 3 rd year, A Section	Paper Presentation	Anna University-Chennai on 3/6/2020

Student Name	Competition	Venue and Date
S.Madumitha, 2 nd Year, B Section	Seminar	Saranathan College of Engineering
Kingsley Patrick Joy J, 2 nd Year, A Section	Smart india Hackathon	Saranathan College of Engineering on 1/23/2020
G.Dhanavidhya, 2 nd Year, A Section	Hackathon	Saranathan College of Engineering" on 1/22/2020
R Durgasri, 2 nd Year, A Section	Hackathon	Saranathan College of Engineering on 1/22/2020
S.Abinaya, 2 nd Year, A Section	Hackathon	Saranathan College of Engineering on 1/22/2020
S.Kaviya, 2 nd Year, A Section	Hackathon	Saranathan College of Engineering on 1/22/2020
A.Kavimani , 2 nd Year, A Section	Hackathon	Saranathan College of Engineering on 1/22/2020
Bauma Ranjith. S, 2 nd Year, A Section	Sports Event, Cricket	Saranathan College of Engineering on 2/16/2020
J.Dhaniya Lakshmi, 2 nd Year, A Section	Hackathon	Saranathan College of Engineering, trichy on 1/22/2020

Student Name	Competition	Venue and Date
K.Sneha, 2nd Year, B Section	Talenzia	Saranathan College of Engineering on 2/28/2020 and 2/29/2020
Irfan Ahmed. I, 2nd Year, A Section	Pecma-2k19	Paavai Engineering College in Namakkal on 3/3/2019
Irfan Ahmed. I, 2nd Year, A Section	Hackathon	Saranathan College of Engineering in Trichy on 1/24/2020
Priya.S, 2nd Year, B Section	Smart india Hackathon-hardware	Saranathan College of Engineering on 1/21/2020
Priya.S, 2nd Year, B Section	Paperpresentation- RYOTZ'20	Mahendra College of Engineering on 2/4/2020
Madhumitha. J, 2 nd Year, A Section	Science and Technology Quiz	online Mode
Madhumitha. J, 2 nd Year, A Section	Technical E-quiz on Cyber Security	online Mode on 5/21/2020
M.Dileepan, 2 nd Year, A Section	Hackathon	Saranathan College of Engineering on 1/22/2020
Deepikha R, 2 nd Year, A Section	Find Me	Saranathan College of Engineering - TALENZIA on 2/29/2020
Nithisha.U, 2 nd Year, B Section	Competition	SRM TRP Engineering College, Trichy on 3/5/2020

Student Name	Competition	Venue and Date
Akshaya Godina.D, 2nd Year, A Section	Hackathon	Saranathan College of Engineering on 1/22/2020
R. Keerthana, 2nd Year, A Section	The Fundamentals of Digital Marketing (Google Digital Unlocked)	The Fundamentals of Digital Marketing (Google Digital Unlocked) on 4/30/2020
R. Keerthana, 2nd Year, A Section	Block Chain Technology	Block Chain Technology on 5/20/2020
G.Karishma, 2 nd Year, A Section	Hackathon	Saranathan College of Engineering on 1/22/2020
R.Dinesh Ram, 2 nd Year, A Section	Smart india Hackathon 2020	Saranathan College of Engineering on 1/22/2020
Thenmozhi A, 2nd Year, B Section	Paper Presentation	Ryotz '20, Mahendra Engineering College, Namakkal on 2/4/2020
Thenmozhi A, 2nd Year, B Section	Esperanza '20	SRM TRP Engineering College, Trichy on 3/5/2020
Thenmozhi A, 2nd Year, B Section	Smart india Hackathon	Saranathan College of Engineering, Trichy on 1/21/2020

Student Name	Competition	Venue and Date
V.S.Roshana, 1st year, B Section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020
K.VASUNTHARA, 1st year, B Section,	Talentiza, Maths Quizplace	Saranathan College of Engineering Trichy on 2/29/2020
K.VASUNTHARA, 1st year, B Section,	Talentiza, Find Me PLACE	Saranathan College of Engineering Trichy on 2/29/2020
Jayalakshmi.S, 1st year, A Section	Quiz Competition	Saranathan College of Engineering, Trichy on 2/29/2020
Jenifar Sheeba.A, 1st year, A Section	Talenzia	Saranathan College of Engineering on 2/29/2020
M. Madhumitha, 1st year, A Section	Maths Quiz-Talenzia2020	Saranathan College of Engineering on 2/29/2020
Crispin Ursula Catherine, 1st year, A Section	Talenzia2020	Saranathan College of Engineering on 2/29/2020
Harini. V. S, 1st Year, A Section	Paper Presentation	Saranathan College of Engineering on 2/29/2020
Harini. V. S, 1st Year, A Section	Paper Presentation	Care College of Engineering on 2/28/2020
Harsheetha RC, 1st Year, A Section	infinito 2K20	Care Group of institutions on 2/28/2020

Student Name	Competition	Venue and Date
A.Renganathan, 1st Year, B Section,	Prayuddha 2020	online on 3/9/2020
K.Kaviya, 1st Year, A Section,	Talenzia 2020	Saranathan College, Trichy on 2/29/2020
Akila G, 1st Year, A Section	Talenzia2020 English Quiz	Saranathan College of Engineering on 2/29/2020
Akshaya.K, 1st Year, A Section	Talenzia2020 English Quiz	Saranathan College of Engineering on 2/29/2020
S Sarulatha, 1st Year, B Section,	Maths paper presentation	Care College of Engineering on 2/28/2020
S Sarulatha, 1st Year, B Section,	Maths project presentation	Care College of Engineering on 2/28/2020
S Sarulatha, 1st Year, B Section,	Toungue Twister	Care College of Engineering on 2/28/2020
S Sarulatha, 1st Year, B Section,	Maths project presentation	Saranathan College of Engineering on 2/29/2020
S Sarulatha, 1st Year, B Section,	English quiz	Saranathan College of Engineering on 2/29/2020
S . Sivetha, 1st Year, B Section	Talenzia	Saranathan College of Engineering on 2/29/2020

Student Name	Competition	Venue and Date
V.Vinodhini, 1st Year, B Section	Talenzia2020	Saranathan College of Engineering, Trichy on 2/29/2020
K.Vaishnavi, 1st Year, B Section	English project, ad-Wizard, Tongue Twister	infinito 2k20 in Care Group of institutions, Trichy on 28/02/2020
K.Vaishnavi, 1st Year, B Section	Talentia 2020 Physics Paper Presentation, Chemistry Quiz.	Saranathan College of Engineering on 2/29/2020
A.Kavya, 1st Year, A Section	Quiz	Saranathan College of Engineering online Webinars
A.Kavya, 1st Year, A Section	English Quiz	Saranathan College of Engineering on 2/29/2020
Ferdina C, 1st Year, A Section	Talenzia	Saranathan College of Engineering on 2/29/2020
K.Kirthiga, 1st Year, A Section	Maths Quiz	Saranthan College of Engineering on 2/29/2020
S. Yogesh, 1st Year, B Section	Talenzia 2020, Find Me	Saranthan College of Engineering on 2/29/2020
Deivanai M, 1st Year, A Section	Maths Quiz in Sce(talenzia)	Saranthan College of Engineering on 2/29/2020
Deivanai M, 1st Year, A Section	Find Me in Sce(talenzia)	Saranthan College of Engineering on 2/29/2020

Student Name	Competition	Venue and Date
P.Kedzi Jero Kathrin, 1st Year, A Section	Sports Event, Basketball Department Match	Saranathan College of Engineering on 2/19/2020
M.Aarthi, 1st Year, A Section	English Quiz	Saranathan College of Engineering on 2/29/2020
Hemavathi R, 1st Year, A Section	Quiz in Mathematics(Talenzia -2020)	Saranathan College of Engineering on 2/29/2020
Hemavathi R, 1st Year, A Section	Find Me (Talenzia -2020)	Saranathan College of Engineeringon 2/29/2020
R.Nivedha, 1st year, B Section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020
Charugobika R D, 1st year, A section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020
Aashikaa R. Mohan, 1st Year, A Section	Talenzia 2020 - PROJECT EXPO	Saranathan College of Engineering on 2/29/2020
S.DHIVYA, 1st Year, A Section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020
I.Keerthana, 1st Year, A Section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020
P.Kedzi Jero Kathrin, 1st Year, A Section	Womania Competition	Saranathan College of Engineering on 3/5/2020
K.Dharshini, 1st Year, A Section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020

Student Name	Competition	Venue and Date
Thrisha. K, 1st Year, B Section	Talenzia 2020	Saranathan College of Engineering on 2/28/2020
S Ragavi, 1st Year, B Section	Talenzia2020	Saranathan College of Engineering on 2/28/2020
Agalya.R, 1st Year, A Section	English Quiz	Saranathan College of Engineering on 2/29/2020
Harini.M, 1st Year, A Section	Talenzia 2020-project Expo	Saranathan College of Engineering on 2/29/2020
K.Puja Sri, 1st Year, B Section,	Talenzia 2020	Saranathan College of Engineering on 2/29/2020
Harithaa. S, 1st Year, A Section	Sports Event, Basketball	Saranthan College of Engineering on 2/20/2020
Harithaa. S, 1st Year, A Section	Talenzia 2020	Saranathan College of Engineering on 2/29/2020
S.Rengalaxmi, 1st Year, B Section	Maths Paper Presentation - Talenzia	Saranathan College of Engineering on 2/29/2020
S.Rengalaxmi, 1st Year, B Section	Physics Presentation -Talenzia	Saranathan College of Engineering on 2/29/2020
S.Rengalaxmi, 1st Year, B Section	Chemistry Quiz -Talenzia	Saranathan College of Engineering on 2/29/2020



- Joy Prasanna J, 3rd year, A Section
 - Yuktaha 2020 at PSG institute of Technology and Applied Research on 02/05/2020
- K.Keerthana ,3rd year, A Section
 - Opportunities For industry 4.0 applications in indian industries (NIT Trichy) on 1/3/2020
- Sowmiya K, 3rd year, B Section
 - Vocational Training in Telecom Technology, BSNL, Tiruchirappalli on 12/12/2019
 - An Iot Enigma, PSG institute of Technology and Applied Research, Coimbatore on 2/5/2020
- S.Swathi, 3rd year, B Section
 - Image Processing Workshop-National institute of Technology, Trichy on 2/14/2020
 - Life Skills-Saranathan College of Engineering on 1/27/2020
- Sharon Francis A,3rd year, B Section
 - Ecentra2020 at K Ramakrishna College of Engineering, Trichy on 2/7/2020
- Preethi.M ,3rd year, B Section
 - Ecentra 2020 at K.Ramakrishnan College of Engineering, Trichy on 2/7/2020
- Shahin Sulthana M W, 3rd year, B Section
 - Ecentra 2020 at K.Ramakrishnan College of Engineering, Trichy on 2/7/2020
- T.Priyadharshini, 3rd year, B Section
 - Currents Twenty -NIT Trichy on 2/14/2020

- ABDUL RAHMAN M, 3rd year, A Section
 - Practical intro To Image Processing on Google Colab-python Platform at Saranathan College of Engineering, Trichy on 6/12/2020
- B.Rahul, 3rd year, B Section
 - E-yantra online Crash course on Embedded System and Robotics, Indian Institute of Technology Bombay, on 2/18/2020
- B.Sujitha, 3rd year, B Section
 - 'IOT ENIGMA ' at PSG institute of Technology and Applied Research on 2/6/2020
- SANTHOSHWARAN G, 3rd year, B Section
 - E-yantra Course on Embedded System and Robotics on 2/18/2020
- D. JANNIFER, 3rd year, A Section
 - Graphical Programming Using Labview at K. Ramakrishnan College of Engineering on 2/7/2020
- T.Vaishnavi, 3rd year, B Section
 - Image Processing Workshop in NIT on 2/16/2020
- V Gokila, 3rd year, A Section
 - Graphical Programming Using Labview, Ramakrishnan College of Engineering, Samayapuram on 2/7/2020

- Subramani G, 3rd Year, B Section
 - Texas instruments -Embedded at PSG institute of Technology and Applied Research, Coimbatore on 2/6/2020 First Prize in Quiz Competition Conducted in Workshop
 - Image Processing at NIT, Tiruchirapalli on 2/16/2020
- Alagammai.K, 3rd Year, A Section
 - Yukta:2020,PSGITECH ,Coimbatore on 2/5/2020
- S.Loramary, 3rd Year, A Section
 - Yukta:2020 PSGITECH (Coimbatore) on 2/5/2020
- T.Vaishali, 3rd Year, B Section
 - Workshop on "Automobile Embedded Systems at Kumaraguru College of Technology, Coimbatore" on 3/3/2020
- Vanitha K, 3rd Year, B Section
 - Image Processing Workshop at NIT Trichy on 2/16/2020
- S.A.Hardhini, 3rd Year, A Section
 - Exploring Robot Operating System Workshop "Yukta 2020" in institute of Technology and Applied Research, Coimbatore on 2/6/2020
- Saranya M,3rd year, B Section
 - Currents'20 National institute of Technology, Tiruchirapalli on 2/14/2020

- Nagammai. N, 2nd Year, B Section
 - Graphical Programming using Labview at K.Ramakrishnan College of Engineering on 2/7/2020
- S.Divya Bharathi , 2nd Year, A Section
 - Block Chain and Cryptocurrency -Vortex 20, national institute of Technology, Trichy on 2/8/2020
- M.Aaisha Thahseena, 2nd Year, A Section
 - Block Chain and Crypto Currency Vortex 20, National institute of Technology, Tiruchirapalli on 2/8/2020
- Priya.S, 2nd Year, B Section
 - Emerging Technology in Agriculture Engineering- RYOTZ'20, Mahendra College of Engineering at Namakkal on 2/4/2020
- Srinivasa Gupta, 2nd Year, B Section
 - Antenna Design & Simulation at Pantech on 2/16/2020
- V.Manodurga, 2nd Year, A Section
 - Graphical Programming Using Labview at K.Ramakrishnan College of Engineering on 2/7/2020
- Kumaragurupharan.S, 2nd Year, A Section
 - Pantech Proed Private Ltd- Embedded Applications Using IOT on 12/5/2019 Internship Program

- Nithisha.U, 2nd Year, B Section
 - Graphical Programming Using Labview, K.Ramakrishnan College of Engineering, Trichy on 2/7/2020
- Tejaswini. S, 2nd Year, B Section
 - "Blockchain and Cryptography, NIT, Trichy on 2/7/2020
- Reshma.E, 2nd Year, B Section
 - Vortex`20(national Level Technical Symposium)at NIT on 2/9/2020
- Akshaya Godina.D, 2nd Year, A Section
 - Eceentra2020 at K.Ramakrishnan College of Engineering on 2/7/2020
- T Sivaganesh, 2nd Year, B Section
 - Sixth Sense Robotics in Sastra University on 2/22/2020
 - Hands-on Workshop on Machine Learning Using Python at Anna University, BIT Campus, Trichy on 3/4/2020
 - Antenna Design & Simulations at Pantech Proed on 2/16/2020



- G.Karishma, 2nd Year, A Section
 - VLSI Design Using Cadence Ramakrishna College of Engineering on 2/7/2020
- G.Dhanavidhya, 2nd Year, A Section
 - VLSI DESIGN USinG CADENCE Held at K.Ramakrishnan College of Engineering on 2/7/2020
- D.Praveen, 2nd Year, B Section
 - Sixth Sense Robotics in Sastra College on 2/22/2020
 - Antenna in Pantech on 2/16/2020
- J.Dhaniya Lakshmi, 2nd Year, A Section
 - VLSI Design Using Cadence. Ramakrishnan College of Engineering ,Trichy on 2/7/2020
- R Durgasri, 2nd Year, A Section
 - Workshop on VLSI Design Using Cadence at K Ramakrishnan College of Engineering on 2/7/2020

- Cavwin Dheepak R , 2nd Year, A Section
 - Agricultural WS in NAC, Trichy on 1/25/2020
- M. Charudharshana, 2nd Year, A Section
 - Graphical Programming Using Labview K. Ramakrishnan College of Engineering on 2/7/2020
- Keerthana.G.R, 2nd Year, A Section
 - Workshop on VLSI Design Using Cadence at K.Ramakrishnan College of Engineering on 2/7/2020
- S.Abinaya, 2nd Year, A Section
 - Block Chain and Cryptocurrency Workshop at NIT on 2/8/2020
- S.Kaviya, 2nd Year, A Section
 - Graphical Programming Using LABVIEW at K Ramakrishnan College of Engineering on 2/7/2020
- Madhesh.S, 2nd Year, A Section
 - Workshop on AI & IOT Techniques, EDII-TABIF, ADAC & RI, Trichy"on 1/25/2020
- Sindhuja R, 2nd Year, B Section
 - Google Digital Unlocked /online Mode on 4/26/2020
 - Campus Ambassadors internship/online Mode on 4/8/2020

- R.Sivaram, 2nd Year, B Section
 - Machine Learning Using Python at UCE, BIT Campus, Anna University on 3/4/2020
- V.S.Roshana , 1st Year, B Section
 - Python T4TEQ Software Solutions, Puthur on 12/22/2019
- Harsheetha RC, 1st Year, A Section
 - Empowering Youths, Saranathan College of Engineering on 4/12/2020 Participation

PUBLICATIONS

Santhi M, Malaisamy K, Robinson S, Mohdwasim and Murugapandiyan P, "Design and Development of Cross Dipole Antenna For Satellite Applications", Frequenz Ahead of Publication, 2020, ISSN: 0016-1136

G.Prathiba, M.Santhi, "Design of Low Power Fault Tolerant Flash ADC For instrumentation Applications", Microelectronics Journal - Elsevier, 2020, ISSN:0026-2692

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Jeyalakshmimurugesh, Santhi M, "Effective Rea Design Using Quantum Dot Cellular Automata", international Journal on Microprocessor and Microsystems, Elsevier, 2020, ISSN: 0141-9331

Dr.M.Santhi, "A 2.5-v 8-bit Low Power SAR ADC USinG POLC and SMTCMOS D-FF for IOT Applications" in The Proceedings of "IEEE int.Conference on inventive Communication Technologies", 2020.

Dr.M.Santhi, "Analysis and Classification of Leaf Disease Using Support Vector Network With Kernels" in The Proceedings of "6th-international E-conference on Latest Trends in Science, Engineering and Technology", 2020.

Dr.M.Santhi, "FPGA Implementation of High Performance Montgomery Multiplier for RSA Cryptosystem" in the proceedings of "6TH-international E-Conference on Latest Trends in Science, Engineering and Technology", 2020.

Dr.M.Santhi, "Design and Analysis of High Speed FPGA Implementation of Multilayer Feed Forward Neural Network Architecture Using Vedic Mathematics" in the proceedings of "6TH-international E-Conference on Latest Trends in Science, Engineering and Technology", 2020.

- M.Santhi and T.Ragavi, "Analysis and Classification of Leaf Disease Using Support Vector Network With Kernels" in The Proceedings of "6th international Econference on Recent Trends in Science" Organized By Engineering and Technology, Karpagam institute of Technology, Coimbatore, April 2020.
- Vijay.R, Vennila.C, Swaminathan.K, "Holistic Near Field Communication (NFC) Approach Digital Access Based on Iotize", Test Engineering & Management Magazine, 2020, ISSN: 0193-4120
 - S.Jayanthic.Vennila, "Performance Improvement in Satellite Image Classification Using Adaptive Supervised Multi-resolution Approach", Computer Communication -Elsevier, 2020, ISSN: 0140-3664
- Jerald Joel M, Joseph Leyans Brighton B, Hari Krishnan V.S, Haris T.S, Ms.Shanmugapriya P, "Willy" The Defense Bot (Ugv)", international Advanced Research Journal in Science, Engineering and Technology, Pp. 153-157, Vol. 7, Issue. 4, 2020
- Elakeyaa P V, Keerthana A, Bharathi P, Ezhilmani S, Dr.V. Mohan, "Plant Leaf Disease Detection/Using Image Segment international Advanced Research Journal in Science, Engineering and Technology, Pp. 136-139, Vol. 7, Issue. 4, 2020

>

- S.Hariprasath, Dr.M.Santhi, "<u>Bimodal Biometric Pattern Recognition System Based on Fusion of Iris and Paimprine Using Mult resolution Approach</u>", Signal, Image and Video Processing, springer, London, 2020, Print Issn 1863-1703, online ISSN: 1863-1711
- Hariprasath, "FPGA Implementation of High Performance Montgomery Multiplier For RSA Cryptosystem" in The Proceedings of "6th-international E-conference on Latest Trends in Science, Engineering and Technology", 2020.
S.HariPrasath, "Design and Analysis of High Speed FPGA Implementation of Multilayer Feed Forward Neural Network Architecture Using Vedic Mathematics" in the proceedings of "6TH-international E-Conference on Latest Trends in Science, Engineering and Technology", 2020.

S.HariPrasath, "Multi Retinal Disease Classification Using Textural Features and Multi-Layer Feed Forward Neural Network" in the proceedings of "6TH-international E-Conference on Latest Trends in Science, Engineering and Technology", 2020.

- S.HariPrasath, "Multifocus image fusion in SWT Domain" in the proceedings of "international Conference on Computing Communiation and Drastic innovations in Energy Thrive".
- Malaisamy K, Santhi M, Robinson S, MohdWasim and Murugapandiyan P, "DESIGN and DEVELOPMENT of CROSS DIPOLE ANTENNA FOR SatELLITE APPLICATIONS", FREQUENZ AHEAD of PUBLICATION, 2020, https://doi.org/10.1515/freq-2019-0066
- A.ShamimBanu, "Enhanced Image Steganography Using DCT and DWT" in the proceedings of "ICIIECS-15" Organized by Karpagam College of Engineering, Coimbatore on 2016-03-20.
- V. Koushick, C. Divya, G. Lakshmi, "L / C / X Triple Band Compact Dipole Array Antenna for RADAR Application", Journal of Physics: Conference Series, pp. 1-10, Vol. 1432, Jan 2020, Impact Factor: 0.54, doi: 10.1088/1742-6596/1432/1/012082

- C. Divya, V. Koushick, "Design and implementation of slotted metamaterial stacked microstrip patch antenna for broadband applications", Journal of Physics: Conference Series, Vol. 1432, Jan 2020, Impact Factor: 0.54, doi: 10.1088/1742-6596/1432/1/012067
- V. Koushick, C. Divya, "Design of 6 GHz slotted metamaterial Stacked MPA using nylon substrate for satellite applications", Journal of Xidian University, pp. 1023-1034, Vol. 14, Issue. 3, Mar 2020, Impact Factor: 5.4, DOI: 20.10090.JXU.2020.V14I3.276311.1669
- V. Koushick, C. Divya, "investigation and Review of 6 GHz Slotted Stacked MSA design on three dielectric substrates and its performance characteristics", Waffen Und Kostumkunde Journal, pp. 162-181, Vol. 11, Issue. 3, Mar 2020, Impact Factor: 5.8, doi: 010.11205.WJ.2020.V11I3.05.100842
- Dr. M. Kavitha, T. Dinesh Kumar, Dr. A. Gayathri, V. Koushick, "28 GHz Printed Antenna for 5G Communication with Improved gain using Array", international Journal of Scientific & Technology Research, pp. 5127-5133, Vol. 9, Issue. 3, Mar 2020, Impact Factor: 5.8, DOI: 010.11205.WJ.2020.V11I3.05.100842
- R.Vaishanavi, R.Keerthana, K N M Adhilakshmi, K Esther Nisha, RIshwarya, "<u>An Energy Efficient Programmable Contemportations</u>", IARJSET(international Advanced Research Journal in Science, Engineering and Technology), 2020, ISSN(online):2393-8021
- S.D.Sairam, "Trace and Track Food Supply Chain Based on Block Chain and Epics" in the proceedings of "international conference on engineering and technology (ICET-2020)" Organized by Selvam College of Technology, Namakkal on 4/3/2020 5/3/2020.



Let's Talk Tech

The only way to discover the limits of the possible is to go beyond them into the impossible



What is Starlink?

The dream of being able to access the internet, no matter where you live might become a reality sooner than you might think. in 2015, SpaceX, the company owned by technology billionaire Elon Musk, announced it was developing such a service called <u>Starlink</u>. But what is Starlink, exactly? This article reveals more about this upcoming, and highly ambitious, space internet service.

How does Starlink work?

once it becomes fully operational, Starlink will be able to offer internet access from virtually anywhere on the planet. The goal of the Elon Musk Starlink effort is to launch thousands of small satellites, all of which will be in low Earth orbit. They will be able to transmit fast internet signals down to Earth.

What are the satellites like?

Each satellite in this Elon Musk Starlink project weighs just 573 pounds (260kg). They are basically very flat and then when 60 of them are placed inside one of SpaceX's Falcon 9 rockets. When they are put in orbit, a single large solar array comes out to power the satellite. The main portion includes four powerful antennas for internet transmissions. They also have lasers that connect each satellite with four others in orbit. Finally, they include ion thrusters that use krypton gas. This allows them to stay in orbit longer even at these lower distances from Earth.

How fast will Starlink internet speeds be like?

The SpaceX Starlink satellites will be in low orbit, around 350 miles above the Earth. Because of that relatively short distance, SpaceX claims the latency should be between 25ms and 35ms. That should be fast enough for most internet tasks, including gaming. Download speeds should also be pretty quick, at about 1Gbps. SpaceX has yet to confirm what upload speeds will be like. By comparison, the current HughesNet satellite internet service offers download speeds of up to 25Mbps. However, its latency speeds are much slower at about 600ms.

A <u>recent thread on Reddit</u> claims that the early beta tests for Starlink speeds show download speeds of between 37Mbps and 60Mbps, with upload speeds from between 4.5Mbps and 17.70Mbps. These speeds have been unconfirmed by SpaceX. in a <u>CNN</u> article, emails reportedly sent by Starlink to possible beta testers stated that speeds for them will be "50Mb/s to 150Mb/s and latency from 20ms to 40ms". The emails added that Starlink expects to improve on those speeds in the coming months. indeed, <u>a Reddit thread on download speeds</u> show that they are being recorded at 150Mbps at the moment.

How many satellites have been launched so far?

The company launched its first test satellites in 2018. This was followed by the first official 60 satellites for the service in 2019. As of this writing, SpaceX has put up about 1,000 of the satellites into orbit. The latest launch happened in late November 2020. in early 2021, the program plans to have as many as three launches a month, again with 60 Starlink satellites on each rocket.

How many satellites will be needed for the service?

The company has received permission from the US Federal Communications Commission (FCC) to put as many as 12,000 SpaceX Starlink satellites above the planet. Basically, it will form a kind of "Starlink constellation" in the sky. SpaceX would like to put even more satellites above the Earth. Ultimately, the "Starlink constellation" could have as many as 42,000 satellites in orbit.

How much will Starlink internet access cost?

So far, SpaceX has yet to confirm pricing plans for the service. in a <u>CNN</u> article, an email reportedly from Starlink is inviting people to try out the service. The email claims that it will cost \$499 for a one-time cost for the ground hardware, and \$99 a month for the actual internet service. By comparison, the HughesNet service costs as much as \$150 a month, with a 50GB high-speed data plan (at 25Mbps) and horrible latency that makes gaming impossible and even tasks like streaming can be quite the chore.

When will Starlink internet be available?

Musk claimed in a Twitter post in April that a private beta will begin around three months from that point. While not confirmed, it appears that a private beta test has begun for select users. Musk added that a public beta would begin in about six months. in late October, according to <u>CNN</u>, people who expressed interest in signing up for the service received emails asking them to sign up for what the company called the "Better Than Nothing Beta" test. The full service is expected to launch sometime in 2021.

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have once driven Earth's

Magnetic Field

An ancient Magma Ocean may have once driven Earth's Magnetic Field

Molten silicate might solve a long-standing magnetic mystery Billions of years ago, Earth's magnetic field may have gotten a jump-start from a turbulent magma ocean swirling around the planet's core. Our planet has <u>generated its own magnetism</u> for almost its entire history. But it's never been clear how Earth created this magnetic field during the planet's Archean Eon — an early geologic period roughly 2.5 billion to 4 billion years ago. Now, computer simulations suggest that a deep layer of molten rock-forming minerals known as silicates might have been the culprit. "There's a few billion years of Earth's history where it's difficult to explain what was driving the magnetic field," says Joseph O'Rourke, a planetary scientist at Arizona State University in Tempe who was not involved with this study. This new result, he says, is a "vital piece of the puzzle."

Today, Earth's magnetism is likely generated in the planet's outer core, a layer of liquid iron and nickel. Heat escaping from the solid inner core drives flows of fluid that create circulating electric currents in the outer core, turning Earth's innards into a gigantic electromagnet. The outer core, however, is a fairly recent addition, appearing roughly a billion or so years ago, and ancient rocks preserve evidence of a planet wide magnetic field much earlier than that. So, some other mechanism must have been at work during Earth's formative years.

one candidate for Earth's first go at a magnetic field is a sea of liquid rock hypothesized to once have surrounded the young planet's nascent core. To see if this ocean of molten silicates is a viable option, Lars Stixrude, a geophysicist at UCLA, and colleagues developed computer simulations to estimate the electrical properties of silicates at extreme temperatures and pressures.

The team found that, at pressures more than 1 million times Earth's surface atmospheric pressure and temperatures comparable to those on the surface of the sun, <u>silicates conduct electricity well enough to</u> <u>produce a planet wide magnetic field</u>. The strength of that field, the team reports February 25 in *Nature Communications*, roughly matches measurements of fossil magnetic fields in rocks that are about 2 billion to 4 billion years old. Around the end of the Archean, the team suggests, the magma ocean would have cooled and solidified, possibly handing over magnetic field duties to an increasingly turbulent core.

The study is "an extremely important step forward in understanding the history of Earth's magnetic field," O'Rourke says. What's more, it might also be relevant to other worlds today. "It's not just a curiosity of ancient history," he says.

Super-Earths, rocky planets a few times as massive as Earth, might retain enough internal heat to sustain a deep silicate ocean for much longer than our planet did. These planets are also the most common worlds found outside the solar system. The mechanism behind Earth's early magnetic field, the team speculates, may therefore be operating in large rocky planets throughout the universe.



Ms. J Eindhumathy, M.E., Assistant Professor



Al- a revolutionary world has entirely captured our day-to-day lives. It is the unique combination of minds and the machines. With the past couple of years, there occurred gradual increase in Artificial intelligence, spreading its root in almost all the fields. New inventions and advancements has been done which are based on AI. The applications of AI are not limited to certain area but from a minute thing to an innovative development, there exists AI. There are numerous technologies, gadgets which have been developed leading to a new world and even some new innovations yet to come. Thus it provides an automated path leading to a bright future. The acceleration of innovations and new trends in this 21st century has ever more uses in all the fields, boosting the economic growth and development. The market of AI is flourishing day- by- day. The most important component of AI is the machines that exhibit intelligence which make them smarter than humans. Due to all these inventions, it becomes necessary to understand Artificial intelligence in depth.

LatEST TECHNOLOGIES BASED on AI

- 1. Tesla's Autopilot
- 2. Cloud Deposition on ML
- 3. Fin gesture

Tesla's Autopilot

Tesla's Autopilot is one of the great example of the automated revolution. It is the world's first AI powered driving experience. It is the semi- autonomous driving feature that includes speed adjusting, lane- change, automatic braking, collision and accidents prevention. in this advanced technology car using Artificial intelligence, the person in the driver's seat is there only for the legal reasons. He doesn't have to do anything because the car is driven itself. For autopilot, Tesla takes data from each cars using the new automated steering or lane change system and the uses it to train its algorithms. Tesla then takes these algorithms, tests them out and incorporates them into operating software. So, Machine learning is the way by which the computers can become artificially intelligent and Tesla's Autopilot is an important technology coming in front in the form of AI.



Cloud Deposition on ML

It is an intelligent customer cloud that depends heavily on machine learning to improve the customer's experience in travel industry. So it can reimagine the customer's experience through machine learning and usage of Artificial intelligence.

Fin gesture

Fin gesture is the latest technology based on AI that is in the form of a smart ring, which translates the hand gestures into commands. This device is worn on thumb and then uses it to recognize each segment of every finger on hands and then taps into commands. It basically makes use of Bluetooth to transmit the commands to another device.





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

FISIMO ROBOT

ASIMO

HONDA

A robot, the hypothetic concept that has been demonstrated a billion times in movies, comes to life with the brilliant exertion of Honda. ASIMO or Advanced Step in innovative Mobility is a state-of the-art humanoid robot created by Honda in the year 2000. Aimed to be a multi-functional portable assistant, ASIMO is intended to function in real-world environments. The creation of ASIMO was envisioned to help people who are bed ridden or disabled. ASIMO beats humans in tasks which can be devastatingly dangerous for them for instance, going in hazardous areas, scrapping fires or defusing a bomb. The composition of ASIMO has been kept purely welcoming and friendly. The era of robots existence has been a topic of continuous debates and has invited numerous advantages and disadvantages of the actuality of robots but, Honda with its very first creation has proved that robots can operate efficiently. Honda, with the joint efforts of its eccentric robotic research and development team, successfully launched ASIMO after 20 years of consecutive hard work. Following this ASIMO team continues to excel and refine their wonderful creation.



Below are ASIMO's configurations:



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- Height: The master piece stands tall with the height of 4 ft. and weighs around 48 kg further making it a welcoming robot. The average height of ASIMO brands it a participant of comfortable conversations with the elderly and people with less mobility. Its companionable height makes it a perfect size for assisting household tasks and people confined to bed or wheel chairs.
- Skills: ASIMO was tossed with a purpose of aiding the needs of the elderly and disabled as well as manage household errands. ASIMO has human like features as it can make gestures, speak and interact like humans which makes it a friendlier robot.

ASIMO holds the capability to sense the movements of numerous objects while capturing visual information by it's camera eyes. Determination of direction and distance is also done by the two camera eyes of ASIMO. The former features of ASIMO enables human like features Movement: ASIMO is accomplished in average walking with a speed of 2.7 kilometers per hour.

Talking about running speed, ASIMO can run with an average speed of around 9 kilometers per hour. The movements of ASIMO are managed by aimed Zero Moment Point control as well as floor reaction control that allows ASIMO to stay firm at a particular position and maintain it steadily. The body position, length of steps and speed are adjustable by ASIMO. ASIMO's hands, legs, waist and neck have variable degrees of movement. The degree of freedom is defined specifically of each robot and to frame further, ASIMO has 57 degree of freedom. The fundamental body parts of ASIMO like wrist, shoulder, hip joints and neck individually has around three degrees of freedom whereas, hands with one thumb and four fingers have two degrees of freedom.



For determination of obstacles, ASIMO has visual sensors. in totality, ASIMO has sensors which helps it in autonomous navigation. The lower portion of

ASIMO has one infrared sensor and one laser sensor. The infrared sensors help ASIMO determine the floor patterns to confirm the navigational path of strategic map while the laser sensor aids ASIMO to sense ground surface.

Other Specifications of ASIMO:

- Battery: ASIMO runs on a Lithium ion battery which is fixed in its backpack and takes 3 hours to completely charge ASIMO. The battery weighs around 6 kg.
- Operating Time: ASIMO can successfully run or walk for a good one hour.
- Languages: ASIMO is skilled in English and Japanese.

The robot first visited the United Kingdom in January 2003 for private demonstrations at the Science Museum in London. ASIMO continued on a world tour, making stops in countries such as Spain, the United Arab Emirates, Russia, South Africa and Australia. in October 2008, ASIMO greeted Prince Charles during a visit to the Miraikan Museum in Tokyo, where it performed a seven-minute step and dance routine.

on March 24, 2017, Honda revealed in <u>Disneyland's Autopia</u> attraction. The latest version of ASIMO was released in 2011which came installed with more modified sensors and more balancing powers than its previous incarnations. ASIMO's most recent update comes with dexterous hands and refined touch sensors. To conclude, artificial intelligence has brilliantly taken birth in the present generation with one live example, ASIMO which in present time imparts lectures and teachings in various colleges. ASIMO has made presence in Disneyland and also at NASA which makes ASIMO a star of every world and in the other parallel worlds.

SHARUMATHY. S. B

3rd year ECE-"B"



Next gen SIM tech – "ESIM"

An eSIM, or "**embedded SIM**" is the next generation of SIM technology. Unlike the traditional SIM card that has to be inserted into a device, an eSIM comes, as the name suggests, pre-embedded into your device as a tiny chip (module). This module can be written onto with the necessary information and be used just like a traditional SIM. Since the eSIM module is prebuilt into the device it cannot be removed or switched between devices.

For a mental picture, an eSIM in terms of size is about half the size of a traditional nano SIM card.

The biggest difference in base technology between eSIMs and their physical SIM counterparts is that the subscriber information (Profile) is not written onto the SIM card by default. instead, **the profile can be downloaded from the internet** and be saved onto and/or rewritten onto the eSIM module. Until now the change of telecommunication networks that was previously done when inserting the SIM card into your device, can be performed with an eSIM capable device simply by downloading a profile from different network providers.

A great comparison for this transition to eSIMs is the change from CD/DVD rentals to download the content through the internet. It used to be that you had to rent a CD/DVD from a store or it sent to your home through a subscription service. However now, all this can be done by downloading the content through the internet, able to be enjoyed wherever you are. There is no need to insert and remove a physical disk into a CD/DVD player. Furthermore, because playback is now able to be done on smartphones, tablets, and computers, the "player" hardware (disk slot) is no longer a necessary feature. Another great comparison to this shift in tech is gaming consoles. Until only a couple years ago (up to about the Nintendo DS), software was purchased and used on physical game cartridges, however, now on the latest consoles like the Nintendo 3DS or Switch, the software can be downloaded digitally straight to your device over the internet.





Until now the Profile containing the subscriber information (carrier information, user contract information, etc.) was come already pre-loaded onto the SIM card. eSIM's on the other hand, come as a chip pre-built into your device (technical name: eUICC or Embedded Universal integrated Circuit Card). This chip can have your profile data written onto it after downloading the profile from the internet.

To put things simply the "hardware" aspect of the SIM (chip) comes already inside your device and setup to use the "software" component (Profile) which can be downloaded freely.

The actual chip or module (eUICC) that comes pre-built into the device is sometimes referred to as an eSIM but the profile you download onto the device is also sometimes referred to as an eSIM as well.



The former, again as the name suggests, is the physical pre-built SIM module which in technical terms what eSIMs actual definition best represents. However, in practice and especially in conversations/online blogs or forums both the module and the profile are commonly referred to as eSIMs

eSIMs advantages

Now let's take a look at the how eSIMs differ from the old generation of physical SIMs and what benefits the average user can get out of this new technology.

Using eSIMs can cut various costs

We're not just talking money savings. Until now, getting/using a traditional SIM card involved having to set up or change a contract with a network provider at a physical store or having to wait for the SIM to be delivered to your place (when purchased online). Using eSIMs means that with just basic internet access, starting a new contract or switching between carriers can be done whenever and wherever. This results in savings of both monetary and time costs.

Embedded SIM (eSIM) technology: Consumer mobile devices



eSIMs are extremely convenient for travelers

The ability to switch between carriers as you please may not be that useful to you in your home country but traveling abroad this new tech is extremely useful.

You can download multiple profiles onto one eSIM

in the standard eSIM capable devices currently available on the market, you can download multiple profiles on your eSIM. Simply stated, just like a dual SIM phone, you are able to hold two or more SIM profiles on one device. While we're honestly not positive on what this upper limit is, we tested this and were able to have 10 profiles loaded onto our device at one time. Having 10 profiles loaded onto one phone is something that is not possible with a regular SIM or even a dual SIM phone.



– R. Kishore Kumar

3rd year ECE-"A"



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topic

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introduction:

As defined by Gartner, Hyper-automation "deals with the application of advanced technologies, including artificial intelligence (AI) and machine learning (ML), to increasingly automate processes and augment humans.

Hyper-automation extends across a range of tools that can be automated, but also refers to the sophistication of the automation (i.e., discover, analyze, design, automate, measure, monitor, reassess.)" in simple terms, hyper-automation refers to the mixture of automation technologies that exist to augment and expand human capabilities.



Hyper-automation Works:

Hyper-automation goes beyond just one piece of software. As such, it entails that businesses adopt tools that can be set up to work with one another. The case for interoperability, or the ease at which software can communicate with one another, is now more critical than ever. Not only will you want single software solutions that are easy-to-use and scalable, but you will also need to consider how the addition of a tool will work with your existing methods of operating. You'll want to introduce tools that are "plug and play" solutions, which can pull data from different sources and can use APIs to talk to your existing software.





Hyper-automation Different from Regular Automation:

When we think of automation, terms like robotic process automation come to mind. But, hyper-automation takes an ecosystem of technologically advanced tools and combines them to create a new way to work.

It means that low-value tasks are optimally performed with automation tools, machine learning and advanced artificial intelligence so that outputs can be produced automatically and run efficiently with little to no human intervention. Then, together with humans, hyper- automation can create a workplace that is always informed, agile and able to use data and insights for quick and accurate decision-making.

It's More than Automating Tasks:

Hyper-automation does not just refer to implementing tools to manage tasks. It requires collaboration between

humans, as well. This is because humans are vital decision-makers and can use the technology to interpret data and apply logic.

Benefits of Hyper-automation:

The benefits of hyper-automation will allow your workforce to be educated with the latest business and marketplace information so that they can perform their roles optimally.

Rather than being bogged down by low-level, repetitive tasks, your workforce will remain engaged with their jobs

as they seek to resolve problems and provide creative solutions.

Hyper-automation provides your business and its leaders with:

- Automated processes
- Advanced analytics
- > increased employee satisfaction and motivation
- An educated workforce
- > increased employee capacity
- \succ instant and accurate insights
- Greater compliance and reduced risk
- > Greater productivity
- increased team collaboration

S. Swathi 3rd year ECE-B

A Little something from Outer Space

AN IMAGinARY PLANET in THE UNIVERSE



The name VAYAMandALAM means an "OLD SYSTEM" in historical language Tamil. Since the major theme of our project is "THE GEOCENTRIC THEORY" and geocentric theory is some old system, so we have selected the name "VAYAMandALAM". in the olden days people believed that the Earth is the center and the other planets including Sun revolved around the Earth. The name "VAIYYAM" denotes the planet and "VEIYYon & SEIYYon" represents the two Suns. The names are in Tamil because, Tamil is said to be so historical ancient language and since we are using an ancient theory as a basic factor, I have used the language TAMIL.

Welcome to our creation "VAYAMandALAM". I hope that everyone know about the geocentric theory, it says that the sun orbits the earth. But in our VAYAMandALAM, the "suns" orbits the earth. The "earth" means our "VAIYYAM" and the "suns" means "VEIYYon" and "SEIYYon". Here in VAYAMandALAM, I have a planet with two nuclear balls orbiting it, and the planet will be orbiting Jupiter.

in VAYAMandALAM I have two days and two nights simultaneously, and VAIYYAM is as heavier as our earth with the mass of 5.972*10²⁴, I make it heavier by adding the elements with high density and powdered asteroids to it, collected by mining certain planets and asteroids in our solar system. The outer layer of the elemental sphere will be made up of elements with high density and the interior is entirely made up of powdered asteroids.

VAIYYAM is a mixture of land area found on earth, an area to extend of 500km² surface area of sphere is excavated from Earth. I have to attach the land area to a giant spherical mixture of high density elements and powdered asteroids, which nearly weighs the Earth.

I have to make VAIYYAM revolve around Jupiter. The required amount of solar energy is not possible near Jupiter so, artificial nuclear balls are made by the action nuclear fusion using nuclear fusion reactors. Which may be possible by using the upcoming calculations and theories....

Why colonize around

Jupiter?

Jupiter may have too many moons, but it does have a small ring comparing the other consecutive planets after mars. The planets within the radius of Mars from sun, are highly exposed to the sun already, and if two more nuclear balls are added, it may affect those planets and our settlement, making it to revolve around the earth is also difficult. Jupiter being a huge mass it is easy to make an object weighing as much as Earth to orbit around it. So, the best host to keep the settlement is Jupiter.

Location

VAYAMandALAM around Jupiter

The settlement has to orbit Jupiter, the force of gravity is directly proportional to its mass, and I have already mentioned about it. So, to get the gravity of "9.8" I need a mass 5.972*10²⁴kg. So VAIYYAM is weighing "5.972*10²⁴kg" and the mass of Jupiter is 1.898*10²⁷kg. I have to make VAIYYAM revolve around Jupiter. Now the distance between VAIYYAM and the Jupiter is 4^{*}10¹² meters, this distance is not calculated, but estimated. So that our settlement will not be disturbed by any of the moons or the dust around Jupiter.

For the chosen distance and mass, I have to find the force of attraction between them. I have a formula proposed by Newton for finding force of attraction G(Mm)/r², here I the universal gravitational constant 6.67408*10⁻¹¹ and I have both the masses also the distance between them or radius, so I get the force of attraction between them as 4.72811*10¹⁶Newtons, and I have to control the centripetal force of the VAIYYAM to make it stable in the orbit, the centripetal force must be equal to the force of attraction, so I get the centripetal force as "4.72811*10¹⁶Newtons".

Now I have the centripetal force right now. Again, I have a formula mv²/r proposed by Newton for centripetal force. Here I have to find the tangential velocity of VAIYYAM around Jupiter, I have the mass of the planet and I have the distance between them, so I get the velocity of the VAIYYAM as 5713188.011m/s. and I can find the angular speed=2*3.14/time in sec, so I get 1.4283*10⁻⁶ Radians/sec as angular speed.
VEIYYon and SEIYYon around the VAIYYAM

in Jupiter I don't have acquired solar energy, so I need a lot of energy to survive. I use a process known as nuclear fusion to catch hold of the energy, to control it I have nuclear fusion reactor in design in the shape of sphere. This would be clearly explained in the topic "Structure and Design". Here I have VEIYYon and SEIYYon orbiting the VAIYYAM mass of them each is 4.19375*10¹²kg it is being calculated among some basis which is clearly explained in the topic "Structure and Design". The Distance between them is randomly being 100km. The force of attraction between them after calculating is 1.67126*10¹⁷Newtons, so the centripetal force is 1.67126*10¹⁷Newtons. Deriving the tangential velocity of it, I get 5963.113566m/s. having the angular speed 0.059631136 Radians/sec.

Thus, even if our lovely world gets destroyed, we can move to our created world <u>vayamandalam</u>. The life support in vayamandalam like environmental maintenance, Water management, Agricultural Government can be developed. Transportation is one of the important factors for the movement of human to travel from one place to other. The modes of transport in our settlement are only through water and road. Then we need maps for knowing about the work of particular places. Mining for water management is also an important factor to be analyzed. After that we can make people move into a different world known as *"vayamandalam"*.

Sri Swarna G

3rd year ECE-B

DAWN of NANO RC ROBOTS

REMOTE - CONTROLLED NANOPARTICLES COULD FIGHT CANCER

Cancer drugs need to be powerfully toxic to kill tumor cells. But they also can kill healthy cells, sometimes with brutal side effects. Now, scientists have designed a way to seal cancer drugs inside tiny capsules so the drugs won't harm the healthy cells while traveling through the bloodstream. They hold that medicine securely until they reach a tumor and a remote control "switch" finally triggers the drug's release. Smaller than bacteria, the capsules are called nanoparticles because their size is measured in nanometres. (A nanometre is equal to one billionth of a meter, or 3 billionths of a foot.) A magnetic field is the invisible force generated by a magnet. Researchers use a magnetic field to work as that remote control switch. Focusing that field on the cancer site ensures that the medicine is released only where it's needed



"The drug is not toxic while it's inside the particle," explains Carlos Rinaldi. He's a biomedical engineer at the University of Florida in Gainesville. He led the team that designed the remotely activated particles. The nanoparticles don't seek tumors out. They do, however, tend to collect at tumor sites. and here's how. Tumors tend to grow so fast that the blood vessels inside them can't keep up. This causes holes to form in the blood vessels. For a nano-package carrying the medicine, those leaky spots become a doorway from the bloodstream into the tumor. The nanoparticles slip in through those leaks, then accumulate in the tumor. Nanoparticles also can pile up in unwanted places. one such unhelpful collection point is the liver. This organ acts as a filter, snagging poisons out of the blood. It will also net some nanoparticles. Those caught in the liver could damage that organ if they shed too much of an anti-cancer drug. For many years, researchers have studied how to make nanoparticles that won't drop their drug cargo at such unwanted sites. Sometimes they relied on a chemical trait of the tumor — or the enzymes it produces — to unlock the particles. But not all cancers have the same chemistry. So the medicine might still leak out to poison cells outside the tumor.

The new innovation bv **Rinaldi's** team is the creation of a nanoparticle that won't release its medicine anywhere until it gets very warm. and that warming occurs when the particle is exposed to a magnetic field. The nanopackage contains two types of particles inside a thin wall, or membrane. Picture something like a gumball machine, with two types of gumballs inside. first gumball is The а nanoparticle made of iron oxide. This metal responds to magnetic fields. Think of a paper clip that jumps to meet a refrigerator magnet. These particles also react when zapped with a certain type of magnetic field. Here, instead of jumping, they warm up.

Next, **Rinaldi's** team wrapped each gumball pair in a water-friendly jacket. This allows the nanoparticles to travel through the blood, which is water-based. The coating also acts as a disguise. It hides the nanoparticles from the body's immune system. Each two-"gumball" package measures about 100 nanometers (0.0000039 inch) across. For perspective, a red blood cell is about 70 times that size. When exposed to a specific type of magnetic field, the iron-oxide "gumball" in each package heats up. That breaks the bonds holding the medicine inside and sends it flooding out into the tumor. For this new treatment, **Rinaldi** and his colleagues use a special machine that restricts where the field contacts the body. They can target that field to the tumor site. Nanoparticles in the liver or any other healthy organ won't be exposed to the magnetic field. and that means any particles in them won't release the drug. Because the drug will be released only at the tumor, patients now can take higher doses of toxic cancer drugs without poisoning healthy parts of the body.

Ironoxidenanoparticles(black)reacttoa magneticfieldandheatup.Theheatbreakschemicalbondsholdingtheparticletogether,uleashingadoseofkillingdrugs.



What are polymers?

The second type of gumball is a polymer (PAHL-ih-mur). This type of molecule is made from long chains of building blocks. The the same researchers figured out how to lock this polymer onto a molecule of a cancerfighting drug. They're linked using a type of chemical bond that breaks when it gets hot. Sealing toxic drugs inside nanoparticles could reduce their harmful side effects.

Not yet ready for the clinic:

Chemotherapy using the new particles is still a ways off. The current work is a "proof of principle," Rinaldi says. That means that he and his team have not yet tested the system on living cells, much less in animals. in fact, they still haven't packed their particles with real drugs yet. in place of a drug, the researchers attached a glowing fluorescent (Flor-ESS-ent) molecule to the iron-oxide "gumballs." That made it easy to track where and when the chemical was released in response to the magnetic field. It would be "a major advance," he says, "if they can really guarantee that these particles do not release drug without magnetic field," says Amit Joshi. He's a biomedical engineer at the Medical College of Wisconsin in Milwaukee. He works on nanoparticles but was not involved in this study. However, he cautions, without animal testing, "we don't know how stable it is." Even if nanoparticles work well in the lab, there is no guarantee they would work equally well inside the body



The new nanoparticles do have features that make them look promising for medicine, Joshi says. The U.S. Food and Drug Administration has already approved iron-oxide nanoparticles for use in the body, he points out. and the magnetic fields used to trigger drug release by the new particles can reach tumors deep inside the body without surgery, he explains. That should make their use easier on patients.

Magnetic field generators like this one are already used for physical therapy. A similar device, that directs the field to a specific area of the body, could be used to activate the nanoparticles.

"This is really, I would argue, for us, a small step," **Rinaldi** says. "There's a lot of things we don't understand very well." But every small step brings the technology closer to real-world use. in the end, he concludes: "It's an exciting field with a lot of potential.

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Plasma Propulsion Engine



Plasma Propulsion Engine

A plasma propulsion engine is a type of electric propulsion(An electrically powered spacecraft propulsion system uses electrical, and possibly also magnetic fields, to change the velocity of a spacecraft. Most of these kinds of spacecraft propulsion systems work by electrically expelling propellant (reaction mass) at high speed, that generates thrust from a quasi-neutral plasma. This is in contrast with ion thruster engines, which generate thrust through extracting an ion current from the plasma source, which is then accelerated to high velocities using grids/anodes.



These exist in many forms (see electric propulsion). Plasma thrusters do not typically use high voltage grids or anodes/cathodes to accelerate the charged particles in the plasma, but rather use currents and potentials which are generated internally in the plasma to accelerate the plasma ions.

The lack of high voltage grids of anodes removes a possible limiting element as a result of grid ion erosion. The plasma exhaust is 'quasi-neutral', which means that ions and electrons exist in equal number, which allows simple ion-electron recombination in the exhaust to neutralize the exhaust plume, removing the need for an electron gun (hollow cathode). This type of thruster often generates the source plasma using radiofrequency or microwave energy, using an external antenna. This fact, combined with the absence of hollow cathodes (which are very sensitive to all but the few noble gases) allows the intriguing possibility of being able to use this type of thruster on a huge range of propellants, from argon, to carbon dioxide, air mixtures, to astronaut urine. Plasma engines are better suited for longdistance interplanetary space travel missions.



in recent years, many agencies have developed several forms of plasma propulsion systems, including the European Space Agency, Iranian Space Agency and Australian National University, which have co-developed a more advanced type described as a double layer thruster. However, this form of plasma engine is only one of many types.

While most plasma engines are still confined to the laboratory, some have seen active flight time and use on missions. As of 2011, NASA, partnered with the aerospace company Busek, and launched the first hall effect thruster aboard the Tacsat-2 satellite. The thruster was the satellite's main propulsion system. Since then, the company has launched another hall effect thruster in 2011.[11] More plasma thrusters are likely to see flight time as the technologies mature.



TacSat-2 JWS-(also known as D1 or RoadRunner) was an experimental <u>satellite</u> built by the <u>USAF's Air</u> Force Research Laboratory with an operational life expected to be not more than one year as part of the 'Advanced Concept Technology Demonstration' program.

VASIMR, short for Variable Specific Impulse Magnetoplasma Rocket, uses radio waves to ionize a propellant into a plasma. Then, a magnetic field accelerates the plasma from the <u>rocket engine</u>, generating <u>thrust</u>. The VASIMR is being developed by Ad Astra <u>Rocket Company</u>, headquartered in Houston, TX. Nova Α Scotia. Canada-based company Nautel, is producing the 200 kW RF generators required to ionize the propellant. Some component tests and "Plasma Shoot" experiments are performed in a Liberia, Costa <u>Rica</u> laboratory. This project is led by former NASA astronaut Dr. Franklin Chang-Díaz (CRC-USA).



Saturn from six years to fourteen months, and from Earth to

Mars from 6 months to 39 days

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தடைகளை தகர்ப்போம்

சிகரத்தை தொட நினைப்பவர்களுக்கு தடைகள் வலியாகாது; பத்துமாத தடையை கடந்து தன் பிள்ளையை ஈன்ற அன்னைக்கு தடைகள் வலியாகாமல் வெற்றியின் சுவையாகிறது; தம் உயிரை பணயம் வைத்து நம் உயிரை காக்கும்



போர்வீரர்களுக்கு தடைகள் வலியாகாமல் சாதிக்கு சாதனையாகிறது; கண்கள் என்றால் கனவுகள் நிரம்பும் மாய உலகம்; உள்ளம் என்றால் உணர்வுகள் நிரம்பும் வியத்தகு உலகம்; வாழ்க்கை என்றால் தடைகள் நிரம்பும வலி உலகம்; வலி இல்லை என்றால்

வெற்றியில் சுவை இருக்காது; தடை இல்லை என்றால் வாழ்க்கையில் ருசி இருக்காது; அனைவரின் வாழ்விலும் தடைகள வரும அத்தடைகளை விடைகளாக்கி வாழ்வின் படிகற்களாக்கி நம்முள் இருக்கும் பயத்தை போக்கி துளிர்விடும் இலைகளாகி தடைகளைத் தகர்த்தெறிந்து கண்ணீரை துடைத்தெறிந்து வெற்றி சிகரத்தை அடைவோம் சாதனையாளர்களாவோம்! சரித்திரம் படைப்போம!

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PHOTOGRAPHY IS THE ART of TELEPORTNG THE PAST TO THE FUTURE.

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From the Editors,

We would again like to thank the esteemed faculty and the talented students who have contributed for this edition of e-magazine's existence. We are really glad that we could contribute with the current and the previous edition of this e-magazine. Hope you all liked it. Hope our juniors will carry forward this e-magazine in an amazing way and bring in new flavors into this.

