SARANATHAN COLLEGE OF ENGINEERING

E-Magazine from the Department of

ELECTRONICS & COMMUNICATION ENGINEERING

Proudly Presents...

WIZARDZZ

Volume - 17

An half yearly submit by students of ECE

From HOD's DESK

Dr . M.Santhi ,M.E., Ph.D
HOD.ECE

I am very enchanted that our ECE department is releasing our department e-magazine version. 17 named "WIZARDZZ V.17"for the odd semester of 2020-2021. Department of ECE has been releasing e-magazine once per semester since October, 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 faculty 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 e-magazine is the window to our departmental activities . This e-magazine 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 V.17. I wish them All the Best for all their future accomplishments.

VISSION OF THE DEPARTMENT

To become a leading department of Higher Learning and a Research Center 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 analyze 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 modeling 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 Defense Electronics.

PSO2:

Apply emerging Information and Communication Engineering Techniques to solve real time problems.

ACHIEVEMENTS

S. PRIYA – 3rd yr B

- I st Place in "INNOVATIVO" event in TECHNOVATION'20 organised by K.Ramakrishna college of Technology held on 4.10.2020 and 5.10.2020
- I st Place in "TECH-PAPYRUS" event in TECHNOVATION'20 organised by K. Ramakrishna college of Technology held on 4.10.2020 and 5.10.2020

A.THENMOZHI – 3rd yr B

- I st Place in "INNOVATIVO" event in TECHNOVATION'20 organised by K.Ramakrishna college of Technology held on 4.10.2020 and 5.10.2020

S. YOGESH – 2nd yr B

- I st Place in Decra fest 2020(Quiz- online) on 12.09.2020


PARTICIPATION

- **S.Abinaya** - 3rd year A – Workshop on **" PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLAB- PYTHON PLATFORM "-**Saranathan college of engineering **-** 10.6.2020 to 12.6.2020
- Workshop on **"EMPOWERING YOUNG MINDS TO EMERGE AS RESPONSIBLE AND SKILLED PROFESSIONALS"** - Saranathan college of engineering - 29.7.2020 to 31.7.2020

- **G.Dhanavidhya** - 3rd year A - Online workshop on **" PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLAB - PYTHON PLATFORM"** - Saranathan college of Engineering **-** 10.06.2020 to 12.06.2020
- Webinar on " **C PROGRAMMING** " - Subash programming classes (online) **-** 12.10.2020 to 18.10.2020

- **J Dhaniya Lakshmi** – 3rd year A – Workshop on "**PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLAB**"- Saranathan college of engineering -10.06.2020 to 12.10.2020
- Course on "**C PROGRAMMING**"- Subash programming classes -18.10.2020

- **R. Durgasri** - 3rd year A – Workshop on **"PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLLAB- PYTHON PLATFORM"** - (online) SCE-10-12.06.2020

- **D.JANNIFER** - 3rd year A - WEBINAR-**"SATELLITE IMAGE PROCESSING FOR TRACKING ENVIRONMENTAL CHANGES"** - ANNAPOORANA ENGINEERING COLLEGE-14.7.2020

- **A.Kavimani** - 3rd year A - Course on **"C PROGRAMMING "** - SUBASH PROGRAMMING CLASSES and 18.10.2020
- Workshop on **"PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLAB-PYTHON PLATFORM"** - Saranathan College of Engineering - 10.06.2020 to 12.06.2020

- **S Kaviya** - 3rd year A – Qui on **DIGITAL ELECTRONICS** - Mandsaur University – 5.7.2020
- Workshop on **"PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLAB-PYTHON PLATFORM"** - Saranathan College of Engineering -10.06.2020 to 12.06.2020
- Webinar- **"NUMERICAL ELECTROMAGNETICS-MODELING AND SIMULATION"** - Annapoorana Engineering College – 11.7.2020

- **Keerthana.G.R** - 3rd year A – Course on **"C PROGRAMMING"** - SUBASH Programming Classes -12.10.2020 to 18.10.2020
- Workshop on **"PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLAB-PYTHON PLATFORM"** - Saranathan College of Engineering - 10.06.2020 to 12.06.2020

- **Kingsley Patrick Joy J** - 3rd year A - Workshop on **"PRACTICAL INTRO TO IMAGE PROCESSING ON GOOGLE COLAB-PYTHON PLATFORM"** - Saranathan College of Engineering - 10.06.2020 to 12.06.2020

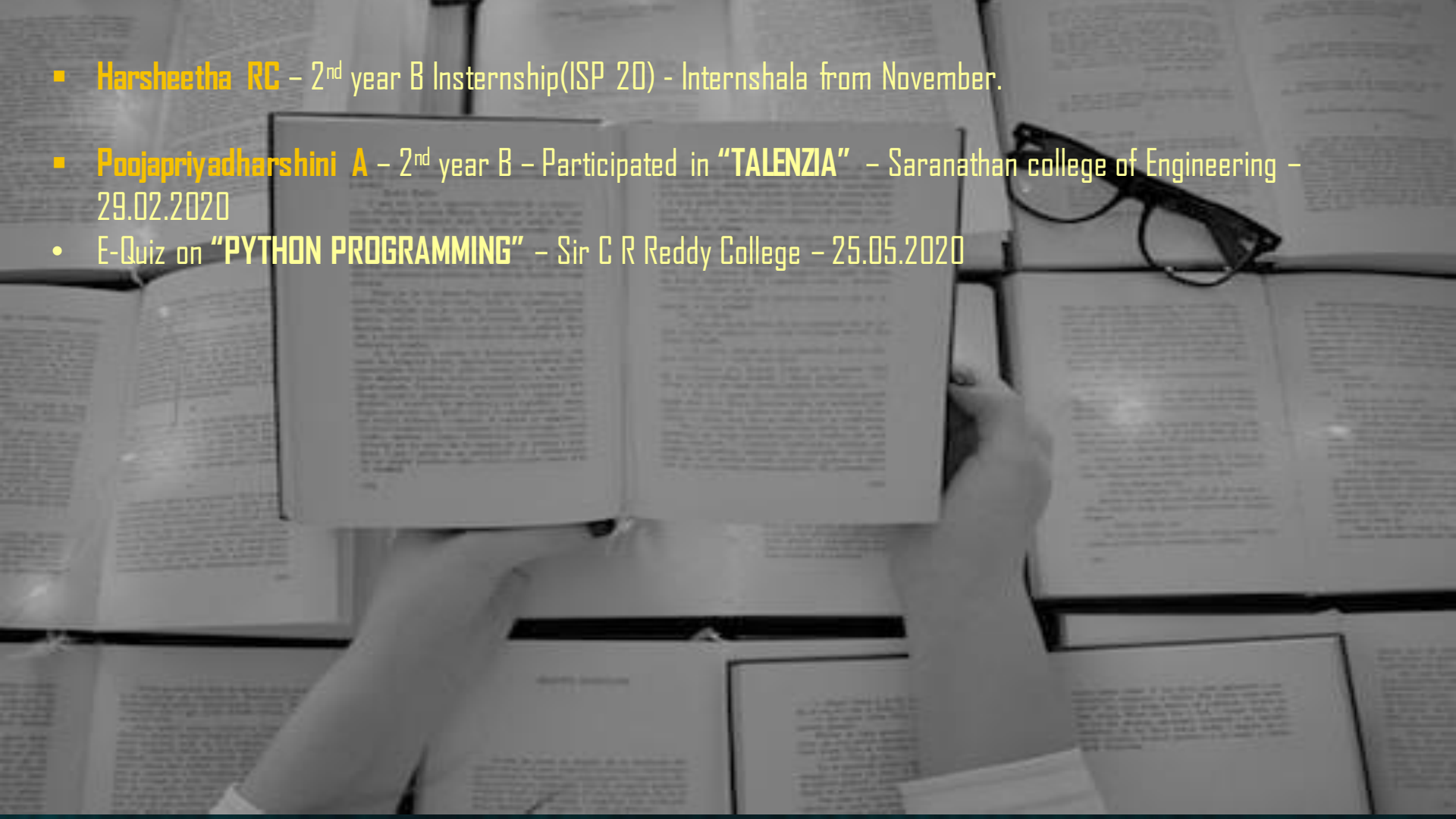
- **Varadakrishnan B** - 3rd year B - Hands on workshop on **"MACHINE LEARNING USING PYTHON"** - at Anna University at BIT campus Trichy – 3.4.2020

- **S.Priya** – 3rd year B - Participated in "**MICROSOFT AI CLASSROOM"** series - December,2020

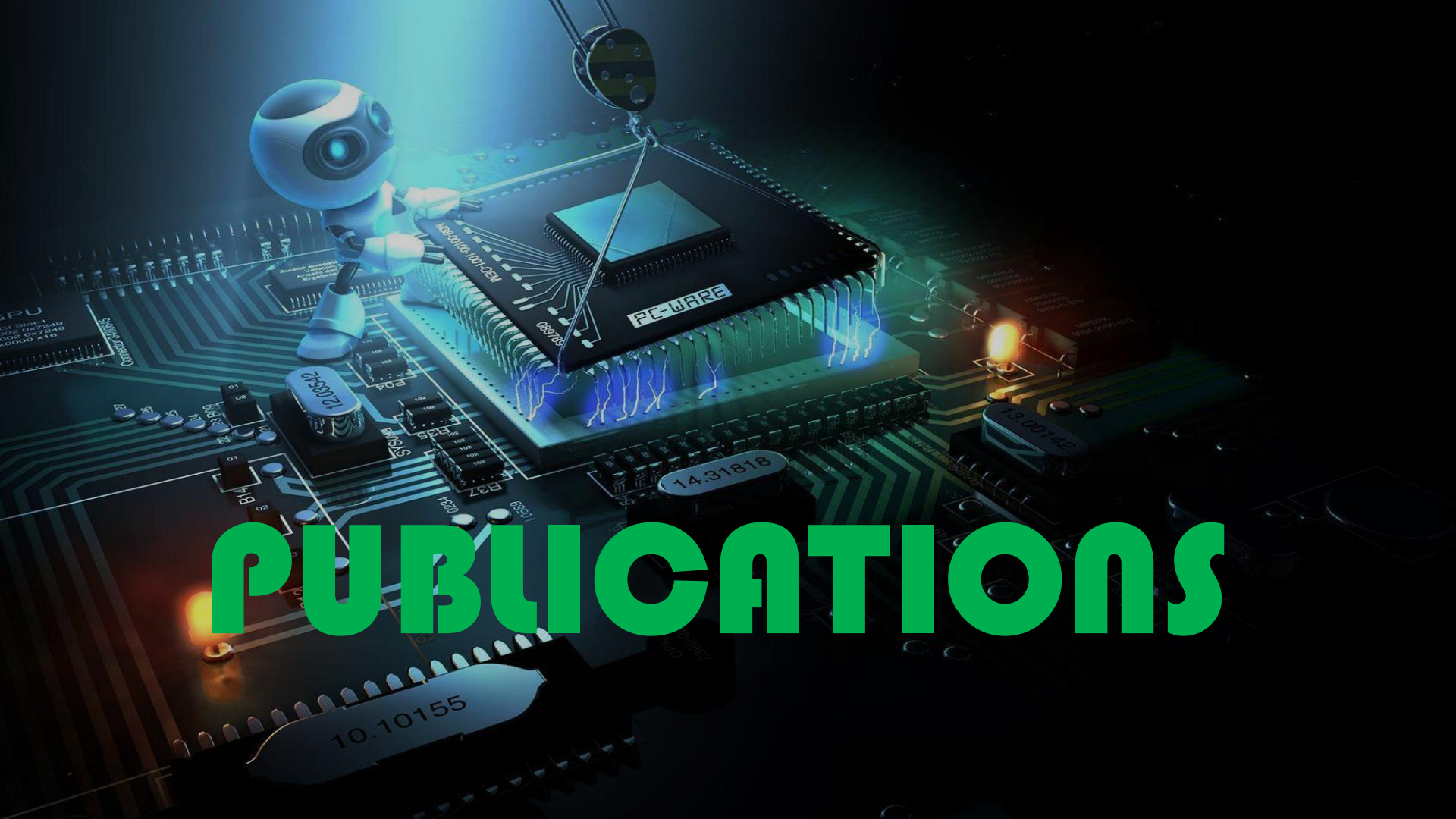
- **Mohamed musaraf** - 2nd year B – Workshop on **"EMPOWERING YOUNG MINDS TO EMERGE AS RESPONSIBLE AND SKILLED PROFESSIONALS"** - Saranathan College of Engineering, Trichy – 29.7.2020 to 31.7. 2020.
- Workshop on "**IoT- THE PRACTICAL PERSPECTIVES"** - SRM INSTITUTE OF SCIENCE AND TECHNOLOGY VADAPALANI on 30 .7.2020
- Workshop on "**DEEP LEARNING"** - SRM INSTITUTE OF SCIENCE AND TECHNOLOGY VADAPALANI – 24.7.2020 and 25.7.2020

- **K.VAISHNAVI** - 2nd year B - Volunteering internship - One month internship in "**YOUTH EMPOWERMENT FOUNDATION " -** 8/07/2020 **.**
- Internshala students partnership (ISP20,21**) "CAMPUS AMBASSADOR PROGRAM"** - From November to present

- **R Sindhuja** – 3rd year B - NPTEL online certification on "**PROBLEM SOLVING THROUGH PROGRAMING IN C"-** during Sep-Dec 2020



- **Harsheetha RC** – 2nd year B Insternship(ISP 20) - Internshala from November.
- **Poojapriyadharshini A** – 2nd year B – Participated in **"TALENZIA"** – Saranathan college of Engineering – 29.02.2020
- E-Quiz on **"PYTHON PROGRAMMING"** – Sir C R Reddy College – 25.05.2020



PUBLICATIONS

- M. Santhi, P. Narayanasamy, S. Gopalakrishnan, "CUSTOM NOC TOPOLOGY GENERATION USING DISCRETE ANTLION TRAPPING MECHANISM", Integration, pp. 76-86, Vol. 76, Issue. 1, 2021
- M. Santhi, Kirankumar Manivannan, "A CONTEMPLATE OF HIGH LEVEL DATA FLOW IN REVERSIBLE LOGIC GATES", Solid State Technology, pp. 9293-9300, Vol. 63, Issue. 5,2020
- M. Santhi, Jeyalakshmi Murugesh, "EFFICIENT MAJORITY LOGIC SUBTRACTOR DESIGN USING MULTILAYER CROSSOVER IN QUANTUM-DOT CELLULAR AUTOMATA", Journal of Nanophotonics, pp. 036011, Vol. 14, Issue. 3, Aug, 2020
- K. Malaisamy, M. Santhi, S. Robinson, M. Wasim, P. Murugapandian, "DESIGN AND DEVELOPMENT OF CROSS DIPOLE ANTENNA FOR SATELLITE APPLICATIONS", Frequenz, pp. 229-237, Vol. 74, Issue. 7,2020
- S. Veeralakshmi, C. Vennnila, "PERFORMANCE IMPROVEMENT IN COGNITIVE RADIO NETWORKS", IJCRT, pp. 2563-2572, Vol. 8, Issue. 9, Sep 2020
- Chitra .K, Vennila .C, "A NOVEL PATCH SELECTION TECHNIQUE IN ANN BÂ€'SPLINE BAYESIAN HYPERPRIOR INTERPOLATION VLSI ARCHITECTURE USING FUZZY LOGIC FOR HIGHSPEED SATELLITE IMAGE PROCESSING", Journal of Ambient Intelligence and Humanized Computing, pp. https://doi.org/10.1007/s12652, Vol. 11, Issue. 7, July 2020
- Vijay .R, Vennila .C, Satheesh .R, "AN EFFICIENT ROUTING PLANNING USING TOKEN BROKER BASED ROUTING SELECTION APPROACH (TBBR)" , Solid State Technology, pp.15704-15713, Vol. 63, Issue. 6, Jan 2021
- R. Vijay, C. Vennila, "HOLISTIC NEAR FIELD COMMUNICATION (NFC) APPROACH DIGITAL ACCESS BASED ON IOTIZE", Test Engineering Management, pp. 10920-10926, Vol. 83, Issue. May-June 2020

- B. Nivedhaa, M. Kanishka, N. Jananie, V.Hebeya, C. Vennila, " ANGEL GUARDIAN" IN THE PROCEEDINGS OF "AICTE SPONSORED TWO-DAY INTERNATIONAL E-CONFERENCE ON CUTTING EDGE TECHNOLOGIES IN ELECTRICAL, COMMUNICATION, EMBEDDED SYSTEM AND SOFT COMPUTING TECHNIQUES (ICECES-20) " Organized by Saranathan college of Engineering, Saranathan college of engineering on 05-Nov-2020. AICTE

- S. Veeralakshmi, C. Vennila, "TO IMPROVE SECRECY THROUGHPUT OF PRIMARY PAIR COGNITIVE RADIO NETWORKS" in the proceedings of "AICTE sponsored Two-day International e-Conference On Cutting edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques " Organized by Saranathan college of Engineering, Saranathan college of engineering on 05-Nov-2020. AICTE

- Roshini .T, Shanmuga Priya .R, Vaishali .A, Valantina Nivetha .V, C. Vennila, "SMART DRAINAGE WORKER SAFETY SYSTEM" in the proceedings of "AICTE sponsored Two-day International e-Conference On Cutting edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques (ICECES-20) " Organized by Saranathan college of Engineering, Saranathan college of engineering on 05-Nov-2020. AICTE

- M. Padmaa, "EAVESDROPPING AWARE ROUTING AND SPECTRUM/CODE ALLOCATION IN CDMA BASED EONS USING DAAS", International Journal of Scientific Research and Engineering trends, pp. 1771-1775, Vol. 06, Issue. 03, May-June 2020

- DR.M.Padmaa, "AUTHENTICATED RATION DISTRIBUTION SYSTEM USING RFID" in the proceedings of "AICTE sponsored International e-Conference On Cutting edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques (ICECESâ€20) " Organized by Saranathan college of Engineering, Trichy, Saranathan college of engineering, Trichy on11-May-2020. AICTE

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- DR.M.Padmaa, "DESIGN OF SAFETY – ON – ALERT SYSTEM FOR WOMEN SAFETY" in the proceedings of "AICTE sponsored International e-Conference On Cutting edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques (ICECESâ€-20)‍ Organized by Saranathan college of Engineering, Trichy, Saranathan college of engineering, Trichy on 05-Nov-2020. AICTE

- S. Rajeswari, S. A. Arunmozhi, Y. Venkataramani, "Q- LEARNING ALGORITHM WITH NETWORK CODING IN MULTI-PATH TRANSFER PROTOCOL FOR WIRELESS MESH NETWORK", International Journal of Recent Technology and Engineering, pp. 153-157, Vol. 9, Issue. 3, Sep. 2020

- S. A. Arunmozhi, V. Benita Esther Jemmima., "A HIGH GAIN ULTRA WIDEBAND ARRAY ANTENNA FOR WIRELESS COMMUNICATION", International Journal of Recent Engineering Science, pp. 31-34, Vol. 7, Issue. 6, OCT 2020

- S. A. ARUNMOZHI, A.ABINAYA, S.ANUSHA, J.DIVYADHARSHINI, R.HEMAMALINI, "DUAL CODE DATA SHIELDING BASED ON VIDEO STEGANOGRAPHY" in the proceedings of "International e- Conference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques" Organized by Saranathan College of Engineering, Saranathan College of Engineering on 05-Nov-2020. AICTE

- S.A.ARUNMOZHI, SHIVANI K ,MERLIN S, SANDHIYA S, KEERTHANI P, "TRASH CLEANING ROBOT" in the proceedings of "International eConference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques" Organized by Saranathan College of Engineering, Saranathan College of Engineering on 05-Nov-2020. AICTE

- S.A.Arunmozhi, V. Benita Esther Jemmima, "DESIGN AND ANALYSIS OF HIGH GAIN ULTRA-WIDE BAND ANTENNA FOR MOBILE COMMUNICATION" in the proceedings of "AICTE Sponsored International e- Conference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques" Organized by Saranathan College of Engineering, Saranathan College of Engineering on 05-Nov-2020. AICTE

- S.A.ARUNMOZHI, SALAI GAYATHRI M, "GAIN ENHANCED MINIATURIZED MICROSTRIP WEARABLE DUAL BAND ANTENNA DESIGN" in the proceedings of "d International e- Conference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques" Organized by Saranathan College of Engineering, Saranathan College of Engineering on 05-Nov-2020. AICTE

- S. Rajeswari, S. A. Arulmozhi, V. Venkataramani, "Q- LEARNING ALDORITHM WITH NETWORK CODING IN MULTI- PATH TRANSFER PROTOCOL FOR WIRELESS MESH NETWORK", Internationa Journal of Recent Technology and Engineering (IJRTE), pp. 153-157, Vol. 9, Issue. 3, Sep 2020

- S.Rajeswari, "IOT ASSISTED HOUSE KEEPING DEVICE IN PANDEMIC COVID19" in the proceedings of "Emerging Frontiers In Control And Communication Technologies" Mohamed Sathak A J College of Engineering , Chennai on 26-Aug-2020

- S.Rajeswari,Ganesh, Karunen Deva, "SMART WIRELESS DEVICE FOR COMBATING COVID 19 PANDEMIC" in the proceedings of "Emerging Frontiers In Control And Communication Technologies (ICECCT2020)" ,Mohamed Sathak A J College of Engineering , Chennai on 26- Aug-2020.

- S. RAJESWARI, Srinidhi, Lavanya, "IOT BASED SMART VACCUM CLEANER in the proceedings of "International e- Conference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques", Saranathan College of Engineering, Trichy on 05-Nov-2020.

- S.Rajeswari,Yogasheeba, "AN ENERGY BASED VOID-AVOIDABLE OPPORTUNISTIC ROUTING FOR UNDERWATER SENSOR NETWORK" in the proceedings of "International e- Conference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques", Saranathan College of Engineering, Trichy, Saranathan College of Engineering, Trichy on 06-Nov-2020.

- Dr.S.Rajeswari, Ganesh,Karundeva, "SENSOR TECHNOLOGY BASED HUMAN MONITORING SYSTEM USING IOT" in the proceedings of "International e- Conference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques" Organized by Saranathan College of Engineering, Trichy, Saranathan College of Engineering, Trichy on 05-Nov-2020.

- Dr.M.Baritha begum and K.sharmila, "IMPROVING PERFORMANCE OF FULL DUPLEX DEVICE TO DEVICE COMMUNICATION", International Journal of Innovative Research in Technology, pp. pp. 436-445, Vol. Volume 7, Issue. Issue 2, JUL 2020

- S.Hariprasath, V.Koushick, "AN IMPROVED MULTI FOCUS IMAGE FUSION METHOD USING NON SUB-SAMPLED CONTOURLET TRANSFORM AND GUIDED FILTER", Journal of Xidian University, pp. 300-304, Vol. 14, Issue. 11, Nov 2020, UGC-CARE Approved Group 2 Journal

- S.Hariprasath, "DESIGN OF HIGH PERFORMANCE MONTGOMERY MULTIPLIER USING HIGH SPEED ADDERS FOR RSA CRYPTOSYSTEMS" in the proceedings of "ICECES 20" Organized by Department of ECE and EEE, Saranathan College of Engineering on 05-Nov-2020. AICTE

- S.Hariprasath, "MULTI RETINAL DISEASE CLASSIFICATION USING TEXTURAL FEATURES AND MULTI-LAYER FEED FORWARD NEURAL NETWORK" in the proceedings of "ICECES 20" Organized by Department of ECE and EEE, Saranathan College of Engineering on 05- Nov-2020. AICTE

- K. Malaisamy, "DESIGN AND ANALYSIS OF 4X4 MIMO ANTENNA WITH DGS FOR WLAN APPLICATIONS", International Journal of Microwave and Wireless Technologies, pp. 678-685, Vol. 1, Issue. 7, November 2020

- Dinakaran G , Ananthakrishnan P , Joshua Tribhuvandev Bennet and Ms.Sivagamasundhari, "STEREOTYPED BEHAVIOR AND EPILEPSY MONITORING SYSTEM FOR ASD PATIENTS", International Advanced Research Journal in Science, Engineering and Technology, pp. 140-144, Vol. 7, Issue. 4, APR 2020

- J. Eindhumathy, M.Anthuvan Lydia, "FPGA IMPLEMENTATION OF MULTICHANNEL RF TRANSCEIVER BASED ON SIGMA DELTA MODULATION", Journal for the Study of Research, pp. 22-25, Vol. XIV, Issue. II, FEB 2021, WEB OF SCIENCE (UGC-CARE APPROVED GROUP II JOURNAL)
- J. EINDHUMATHY, "IOT BASED RECYCLE IC SYSTEM" in the proceedings of "CUTTING EDGE TECHNOLOGIES IN ELECTRICAL, COMMUNICATION, EMBEDDED SYSTEM AND SOFT COMPUTING (ICECES20)" Organized by DEPARTMENT OF ECE, SARANATHAN

- J.EINDHUMATHY, "IoT BASED RECYCLE IC SYSTEM" in the proceedings of "6th National Conference on Information and Communication Technologies" Organized by Department of Electronics and Communication Engineering, SSN College of Engineering, Kalavakkam on June 12, 2020.

- MAHENDRAN M, SIVAKANNU G, "IoT BASED IMPLEMENTATION OF SMART BIN WASTAGE MANAGEMENT", JOURNAL OF XIDIAN UNIVERSITY, pp. 234-239, Vol. 15, Issue. 02, FEB 2021, SCOPUS INDEXED

- MAHENDRAN M, GAYATHRI R, HAMSHAVARTHINI V, AKSHAYA B, "AUTOMATED CLASSIFICATION OF WASTES AND REAL TIME MONITORING" in the proceedings of "International E-Conference on Cutting Edge Technologies of Electrical, Communication, Embedded System and Soft Computing Techniques" Organized by DEPARTMENT OF ECE AND EEE, SARANATHAN COLLEGE OF ENGINEERING on 06-Nov-2020. AICTE

- Mahendran Maruthai and Sivakannu Ganesan, "IoT BASED WASTAGE MANAGEMENT SYSTEM USING SMART BIN", Journal Of Xidian University, pp. 234-239, Vol. 12, Issue. 2, FEB 2021

- Sivakannu G, Kishorekumar R, Sureshkumar M, Venkatesh C, "FOREST FIRE DETECTION USING DEEP LEARNING ALGORITHMS" in the proceedings of "AICTE Sponsored International E-Conference on Cutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques" Organized by Department of ECE and Department of EEE, Saranathan College of Engineering, Saranathan College of Engineering on 05-Dec-2020. AICTE

- R.Devi, V.Ramya, , T.Akash, M.Sreenivasan, B.Ubendran, "AUTOMATIC HAND SANITIZER AND TEMPERATURE MONITOR USING ARDUINO", International Journal of Scientific Research in Engineering and Management (IJSREM), Vol. 4, Issue. 7, July 2020, ISSN: 2582-3930

- Ramya.V,Anushiya.P, Irene Naveena, Deepika.K, "GESTURE CONTROLLED EOD BOT WITH VIRTUAL REALITY" in the proceedings of "ICTE sponsored Two days International e-Conference on â€œCutting Edge Technologies in Electrical, Communication, Embedded System and Soft Computing Techniques (ICECESâ€™20)â€" Organized by DEpt of ECE & EEE, Saranathan College of Engineering on 11-May-2020. AICTE

- J.Eindhumathy,M.Anthuvan Lydia, "FPGA IMPLEMENTATION OF MULTICHANNEL RF TRANSCEIVER BASED ON SIGMA DELTA MODULATION " ,Studia Rosenthaliana (Journal for the Study of Research)-Web of Science, pp. 22-25, Vol. XIV, Issue. II, Feb 2021, DOI.05.748/JSR/2021.VXIIIII/098.09533

- Anthuvan Lydia.M, "WIRELESS FOOD ORDERING SYSTEM WITH MAGLEV BASED FOOD SERVICE" in the proceedings of "International Conference on Cutting Edge Technologies in Electrical, Communication, Embedded Systems and Soft Computing Techniques (ICECESâ€™20)" Organized by Department of ECE & EEE, Saranathan College of Engineering, Trichy, Saranathan College of Engineering, Trichy on 05-Nov-2020. AICTE SPONSORED

- Koushick.V, Ramamani. N, Sriram. G, "TRANSFORMING TECHNICAL EDUCATION TOWARDS INDUSTRY NEEDS", Journal of Shanghai Jaiotong University, pp. 846 - 856, Vol. 16, Issue. 7, July 2020, https://shjtdxxb-e.cn/

- Koushick.V, Hariprasath. S, "Â AN IMPROVED MULTI FOCUS IMAGE FUSION METHOD USING NONÂ SUB-SAMPLED CONTOURLET TRANSFORM AND GUIDED FILTER", Â Journal of Xidian University, pp. 300 - 304, Vol. 14, Issue. 11, Nov 2020, https://doi.org/10.37896/jxu14.11/026

- KOUSHICK V, C DIVYA, SD SAIRAM, "DUAL RESONANT STACKED SLOTTED MICROSTRIP PATCH ANTENNA INTEGRATED WITH CSRR METAMATERIAL LOADING TECHNIQUES", Journal of Huazhong University of Science and Technology, pp. 1 - 14, Vol. 50, Issue. 2, Feb 2021, Indexed by Scopus and Approved by UGC

- R.Vaishanavi,R Keerthana,K N M Adhilakshmi, K Esther Nisha,R Ishwarya, "AN ENERGY EFFICIENT PROGRAMMABLE CONTROLLER FOR PERSONALIZED BIOMEDICAL APPLICATIONS" in the proceedings of "R.Vaishanavi,R Keerthana,K N M Adhilakshmi, K Esther Nisha,R Ishwarya, "An Energy Efficient Programmable Controller for Personalized Biomedical Applications", IARJSET(International Advanced Research Journal in Science,Engineering and Technology), 202" Organized by Department of EEE and ECE, Saranathan College of Engineering, Saranathan College of Engineering on 11-May-2020. AICTE

- Dinesh, "AN IoT BASED STAPLE FOOD ENDOWMENT AND WASTE MANAGEMENT SYSTEM FOR FOSTER CARE USING ARDUINO AND BLOCK CHAIN" in the proceedings of "International Conference On Recent Trends In Computer Science and Information Technology" on 17th - 18th June 2020.

- SD. SAIRAM, V. KOUSHICK, C. DIVYA, "DUAL RESONANT STACKED SLOTTED MICROSTRIP PATCH ANTENNA INTEGRATED WITH CSRR METAMATERIAL LOADING TECHNIQUES", Journal of Huazhong University of Science and Technology, pp. 1 - 14, Vol. 50, Issue. 2, Feb 2021, ISSN-1671- 4512, Impact Factor: 6.2, Indexed by Scopus and Approved by UGC


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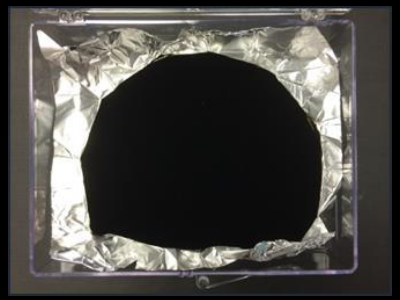
My Next 10 Article Ideas:
1 Writing Schedule
2 7:00 - plan writing for rest of week
3 7:15 - start writing article 1 of "tips for airline travel" article series on planning
4 9:30 - edit yesterday's blog post
5 10:00 - start writing article 2 of "tips for airline travel" series on safety
6 11:00 - break for workout and short lunch
7 12:30 - edit 1st "tips for airline travel" article
8 1:15 - finish 2nd "tips for airline travel" article
9
10
http://EzineArticles.com/
ARTICLES


VANTABLACK

What if you could see the complete absence of light .The darker something it looks , more the light it is absorbing and the less its reflecting back to your eyes .Most of us would have heard about black hole in space which absorbs all light , which is the darkest thing possible .But odds are you'll unable to see in real person which is nearly thousands of light year away. If you really want to know how it looks to be a real black, a new material called **VANTABLACK** is pretty close to complete darkness.



Back in 2012, the British company Surrey NanoSystems started developing Vantablack , a coating that is made to absorb as much light as possible. The first version of vanta black ,released in 2014 absorbed **99.965%** of the visible light and the next version of vanta black namely **Vantablack 2,**which absorbs so much light they can't even measure how much its absorbing. For example ,compared to black board visible, light gets reflected about 7% and fresh asphalt ,light gets reflected about 4%. An object is coated with vanta black reflects so little light that all of its surface details vanish. The "vanta" in Vantablack is an acronym for **"vertically aligned carbon nanotube arrays"** which makes sense ,since the material is made of carbon nanotubes(CNT). Each carbon nanotube ,or CNT is 10,000 times thinner than a human hair. More than 99% of nanotube is actually free space so light goes between the tubes, where it gets trapped and turned into heat - in other words its absorbed

In 2011 ,NASA created a material called super-black, also made of CNTs, to absorb light better.

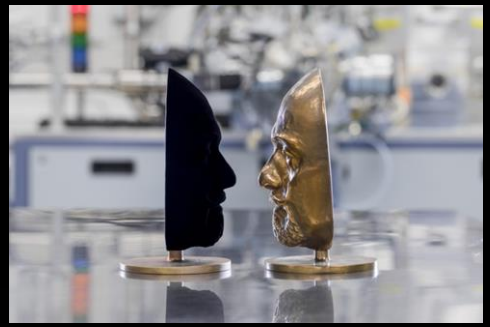
Super-black, which is grown at temperatures above 750+℃ (1,380 ℉) absorbs 99.9% of the visible and ultraviolet light that hits it and is still being tested as a coating that could be used in space. But vantablack absorbs slightly more light than super-black and can be grown at a lower temperature, it's useful for coating materials that wouldn't be able to withstand 750 degree heat.

Vantablack is also incredibly strong in the sense ,that it can resist the vibration and shock of a rocket launch ,so it can be used as a coating things sent up to space. Vanta black is both weird-looking and useful it's a tedious process for a normal person to apply vantablack coating to things as the vantablack does have a spray-form ,but it can only be applied by a specialist.

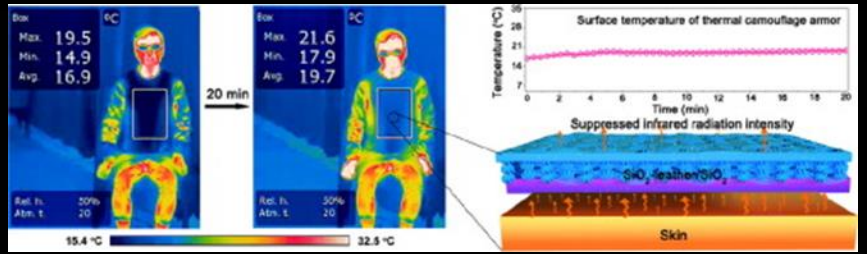
The coating has to be built up very precisely, then go through a bunch of chemical processes at temperatures between 100 and 300 degrees. If not applied just in the right way, the materials in the spray won't bind together and the coating wont work properly.

Applications:

As one of the darkest materials, Vantablack has many potential applications, such as preventing stray light from entering telescopes, and improving the performance of infrared cameras both on Earth and in space.

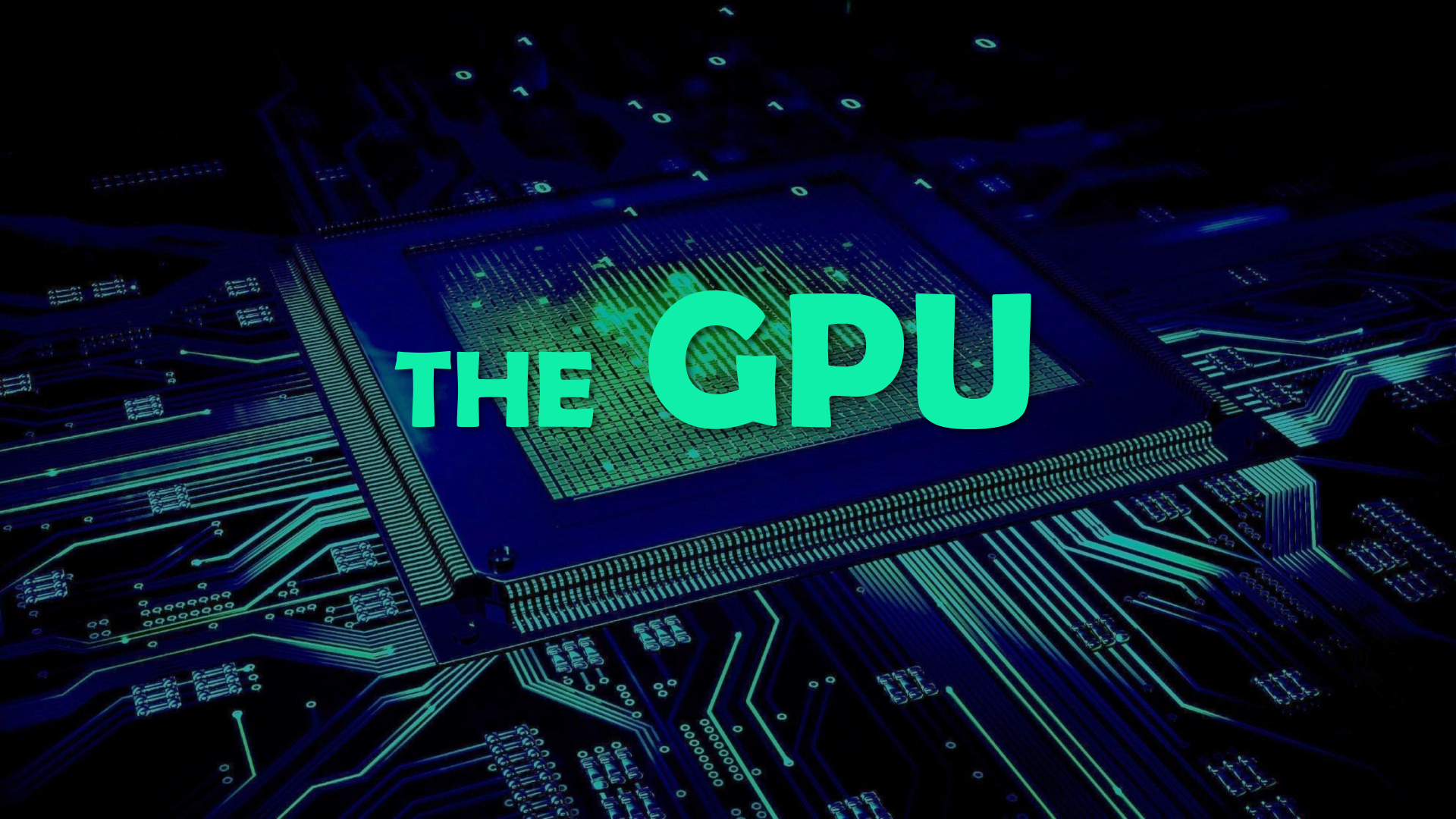


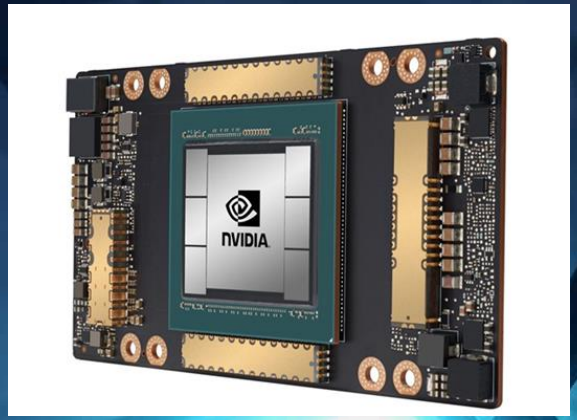
Vantablack may also increase the absorption of heat in material used in concentrated solar power technology, as well as military applications such as thermal camouflage . Its emissitivity and scalability support a wide range of applications.



This unique X6 has the Vantablack VBx2 coating over all its body panels. The covering absorbs 99.96%of visible light making the substance the blackest colour in the world. The illuminate grille, headlights, and taillights don't wear the materials, so they are still able to shine.

R. SIVARAM
3rd year
ECE - B


THE GPU

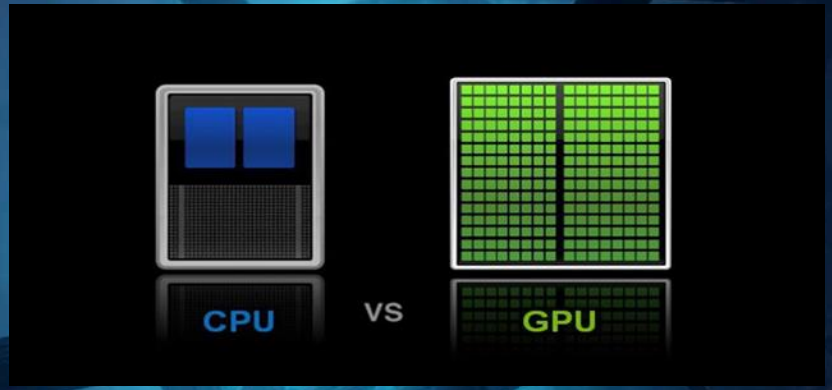


A GPU is a computer component that excels in rendering graphical content. It allows a system to display visually intense videos, images, and animations from software or video games.

GPUs can handle complex calculations needed by a computer so it can show high-quality graphics outputs.
A GPU is a type of programmable processor primarily used for rendering graphics. Devices with a display or image-rendering function, such as a smartphone, a computer, and a game console, make use of GPUs.

GPUs feature more transistors than the average central processing unit (CPU). Special features, such as image-filtering techniques, vary depending on the model and manufacturer.
GPUs are faster in performing mathematical calculations than CPUs.

A commercial consumer range CPU consists of four to sixteen CPU cores, while the GPU consists of hundreds to thousands of smaller cores. Together, they operate to crunch through the data in the application. This massively parallel architecture is what gives the GPU its high compute performance advantage.



FACT

CPU is like the left side of a human brain.

GPU is like right side of the brain.

The main difference between GPUs and CPUs is that GPUs devote proportionally more transistors to arithmetic logic units and fewer to caches and flow control as compared to CPUs.

GPU performs floating point operations required for rendering graphics.

GPUs are so fast because they are so efficient for matrix multiplication and convolution. The real reason for this is memory bandwidth and not necessarily parallelism.

CPUs are latency optimized while GPUs are bandwidth optimized.

For explanation lets assume, CPU as a Ferrari and a GPU as a
big truck. The task of both is to pick up packages from a random location A and to transport those packages to another random location B. The CPU (Ferrari) can fetch some memory (packages) in your RAM quickly while the GPU (big truck) is slower in doing that (much higher latency). However, the CPU (Ferrari) needs to go back and forth many times to do its job while the GPU can fetch much more memory at once.

Nvidia vs AMD is the most significant rivalry going on.

Between them their GeForce VS Radeon battle is pushing the limits of technology that could be held in a discrete GPU.

CPUs are designed for more general computing workloads. GPUs in contrast are less flexible, however GPUs are designed to compute in parallel the same instructions.
Deep Neural Networks (DNN) are structured in a very uniform manner such that at each layer of the network thousands of identical artificial neurons perform the same computation, these include having more computational units and having a higher bandwidth to retrieve from memory.

Most GPU developers use individual cores for advanced process,
Nvidia use Tensor cores & Ray-Tracing cores apart from their Cuda cores.
AMD use Stream processors & Ray accelerators apart from their main Compute units.

NOTE
The best CPUs have about 50GB/s while the best GPUs have 750GB/s memory bandwidth. So the more memory your computational operations require, the more significant the advantage of GPUs over CPUs.

What Does a GPU Consist Of?

A GPU has the following major components

Graphics memory controller (GMC): This manages the flow of data that goes in and out of the GPU's memory.

Graphics and compute array (GCA): This is also known as the "3D engine." It is mainly responsible for rendering graphics in 3D.

Bus interface (BIF): This is the communication system that transmits data between GPU components.

Power management unit (PMU): This monitors and controls the power consumption of the GPU

Video processing unit (VPU): This is a microprocessor that takes video streams as input.

Display interface (DIF): This is responsible for transmitting the processed data to the display.

Uses of Graphics Processing Units

1. Image/ video rendering.
2. Cryptocurrency mining.
3. Supercomputing.

Advancements

What is ray tracing?

Ray tracing is a rendering technique that can produce incredibly realistic lighting effects. Essentially, an algorithm can trace the path of light, and then simulate the way that the light interacts with the virtual objects it ultimately hits in the computer-generated world.

The in-game lighting effects become more and more realistic over the years, but the benefits of ray tracing are less about the light itself and more about how it interacts with the world. Ray tracing allows for dramatically more lifelike shadows and reflections, along with much-improved translucence and scattering.

Ray-Tracing will be more noticeable in the Gaming Industry particularly.

What is Supersampling ?

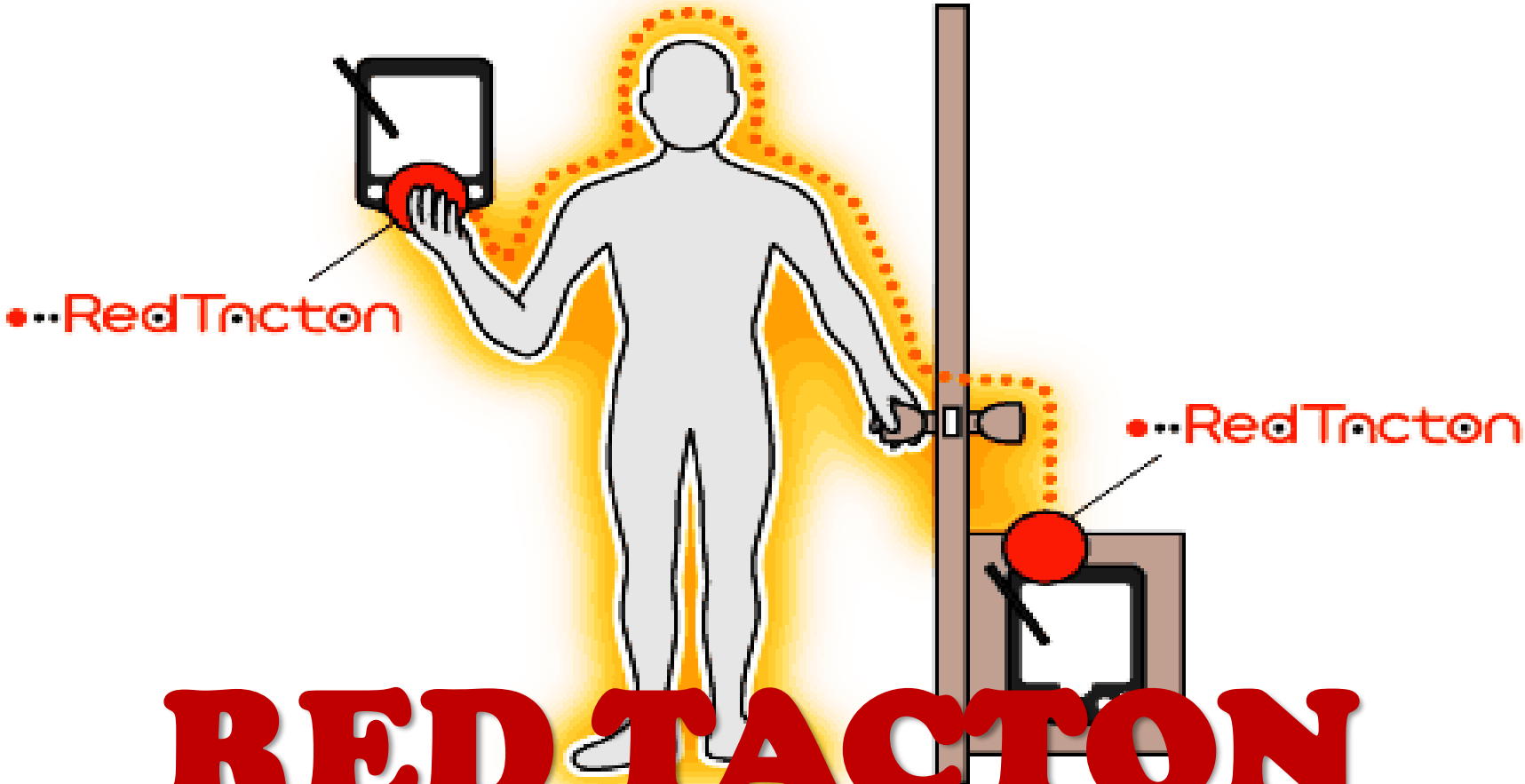
Supersampling or SSAA (Supersampling Anti-Aliasing) is a spatial anti-aliasing method, i.e. a method used to remove aliasing from images rendered in computer games or other computer programs that generate imagery. Aliasing occurs because unlike real-world objects, which have continuous smooth curves and lines, a computer screen shows the viewer a large number of small squares. These pixels all have the same size, and each one has a single color. A line can only be shown as a collection of pixels, and therefore appears jagged unless it is perfectly horizontal or vertical. The aim of supersampling is to reduce this effect. Color samples are taken at several instances inside the pixel , and an average color value is calculated. This is achieved by rendering the image at a much higher resolution than the one being displayed, then shrinking it to the desired size, using the extra pixels for calculation. The result is a downsampled image with smoother transitions from one line of pixels to another along the edges of objects.

The supersampling help games to fake a smooth 4k looking experience from a normal 1080p, using deep learning.

GPU developers have different names based on their tech although the main principle is same.

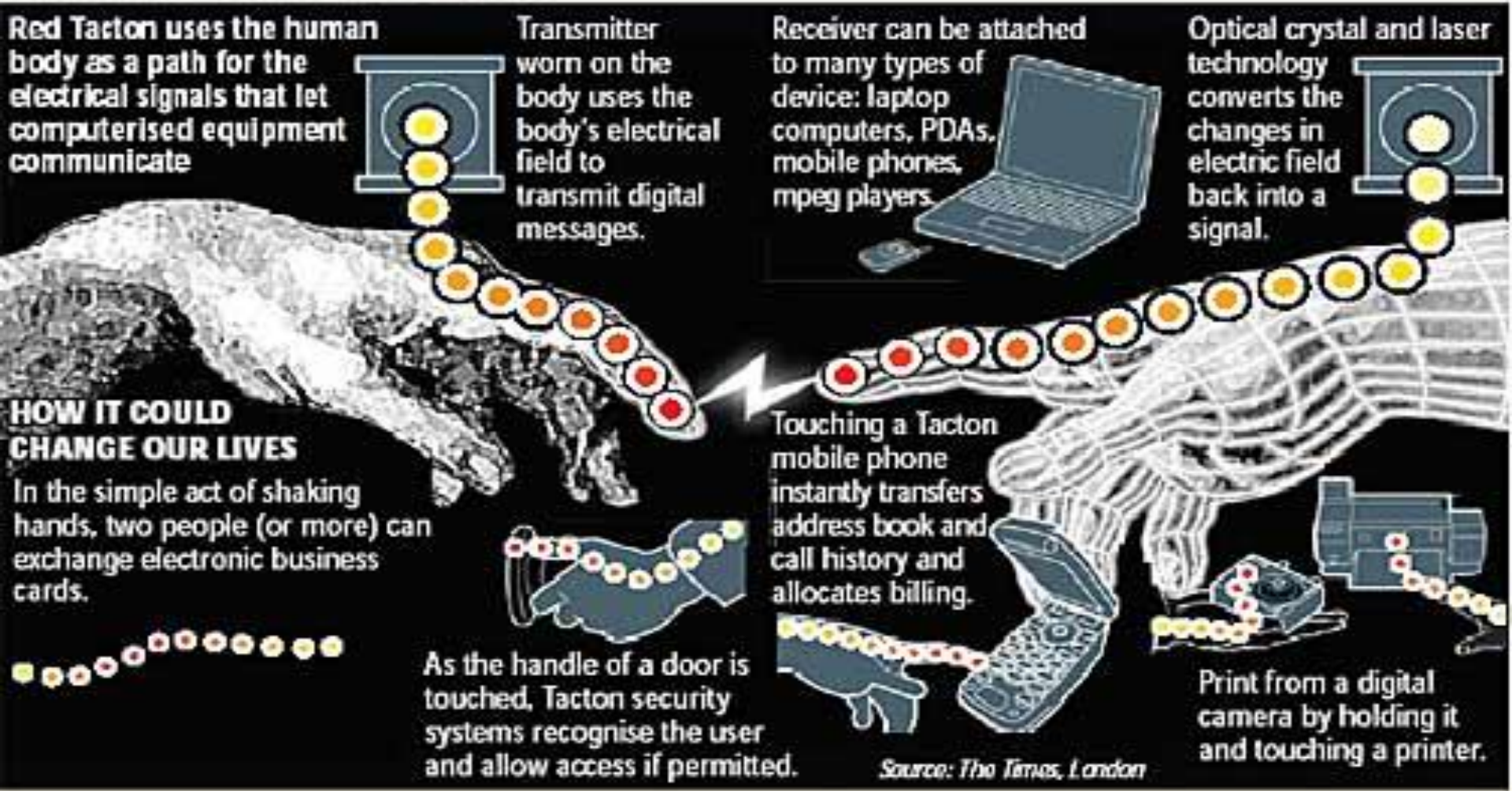
Nvidia calls it as DLSS (Deep learning super sampling)
AMD calls it as VSR (Virtual super Resolution)

B.VARADAKRISHNAN
3rd year ECE B



RED TACTON

HOW RED TACTON WORKS

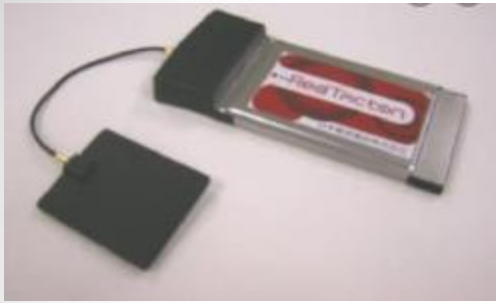


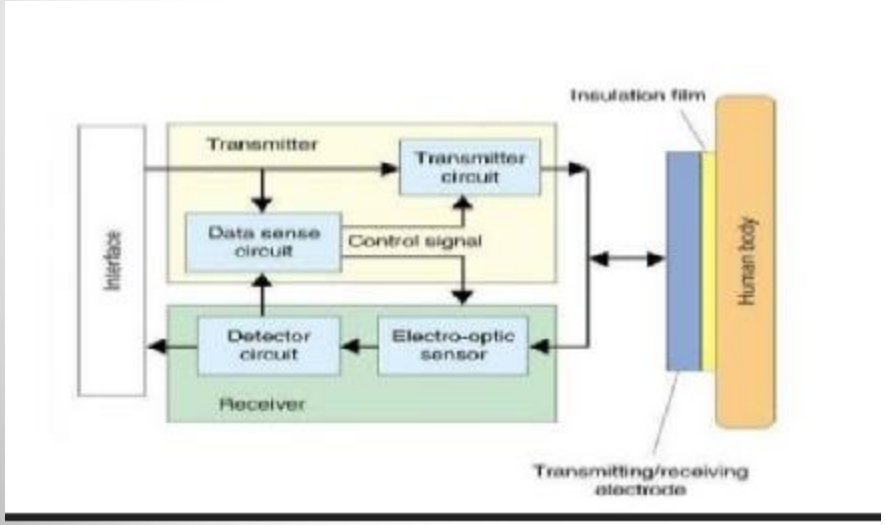
Source: The Times, London

HUMAN AREA NETWORKING

- Human Area Networking is a technology that uses the surface of human body as a safe data transmission path at a speed of 10 MBPS between any two points of the body.
- Though this concept of intra body communication was first proposed by IBM in 1996,but the Japanese scientist from Nippon telegraph and telecom developed this technology and called it as Redtacton.
- RED denotes the auspicious colour of Japan and TACTON -touch act on ,as the name says the actions are triggered by touching.
- Redtacton uses the minute electric field emitted on the surface of human body for data transmission ,it works even through shoes ,clothing as well.

RedTacton Transceiver





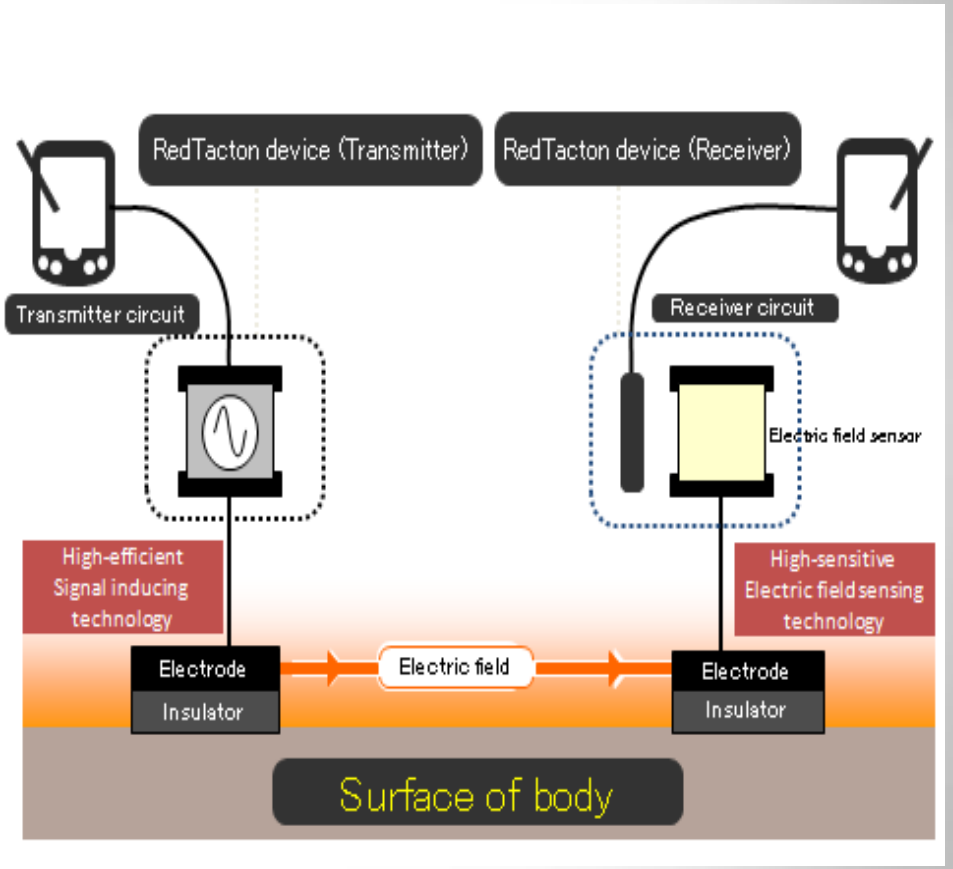
- RedTacton transceiver is embedded into the devices which is used to send and receive the signal.
- The transceiver consist of transmitter and receiver.
- The transmitter consists of transmitter circuit that induces electric field towards the body and data sense circuit which detects both transmission and reception data and give output as control signals.
- Receiver circuit consists of detector circuits and electro optic sensor.

HOW REDTACTON WORKS?

- *Redtacton uses piconet, a point to point network which allows exchange of information between two transceiver through human body as medium.*
- *Redtacton transmitter induces a weak electric field on the surface of the body and the redtacton receiver senses the changes in the electric field on the surface of body caused by transmitter.*
- *This works on the principle of changes in the optical property of electro-optic crystals due to the change in electric field .*
- *Redtacton detects the changes in optical property using laser and converts it to electrical signal in optical receiver circuit .*

Features of redtacton

- **TOUCH(Used to Lock and unlock ,stop and start machines,to get data).**
- **INTERACTIVE (Duplex Operation and simultaneously used by many users)**
- **WORKS IN ANY MEDIA(dielectric and conductor etc.)**



APPLICATIONS

- **ONE TO ONE SERVICES:**
  - a) The alarms sounds automatically on the redtacton embedded device he/she is carrying when the user touches the wrong medicine.
  - b) If the customer wants more info on the interested items they will get it by just touching or standing in front of the advertising panel.
- **INTUITIVE OPERATIONS:**
  - a) Taking a print by touching the redtacton embedded printer on one hand and a phone or PC built in redtacton on other hand to make a link.
  - b) Electronic exchange of business cards by just a single handshake and the data will be shared with two mobile terminals of the users and the data is kept Encrypted.
- **PERSONALISATION:**
  - a) Pre-recorded data's can be embedded in terminals built-in with redtacton and they can accessed by just a touch.(Room temperature and lighting can be customised by a touch and just sitting in the car trigger all the preset we liked)

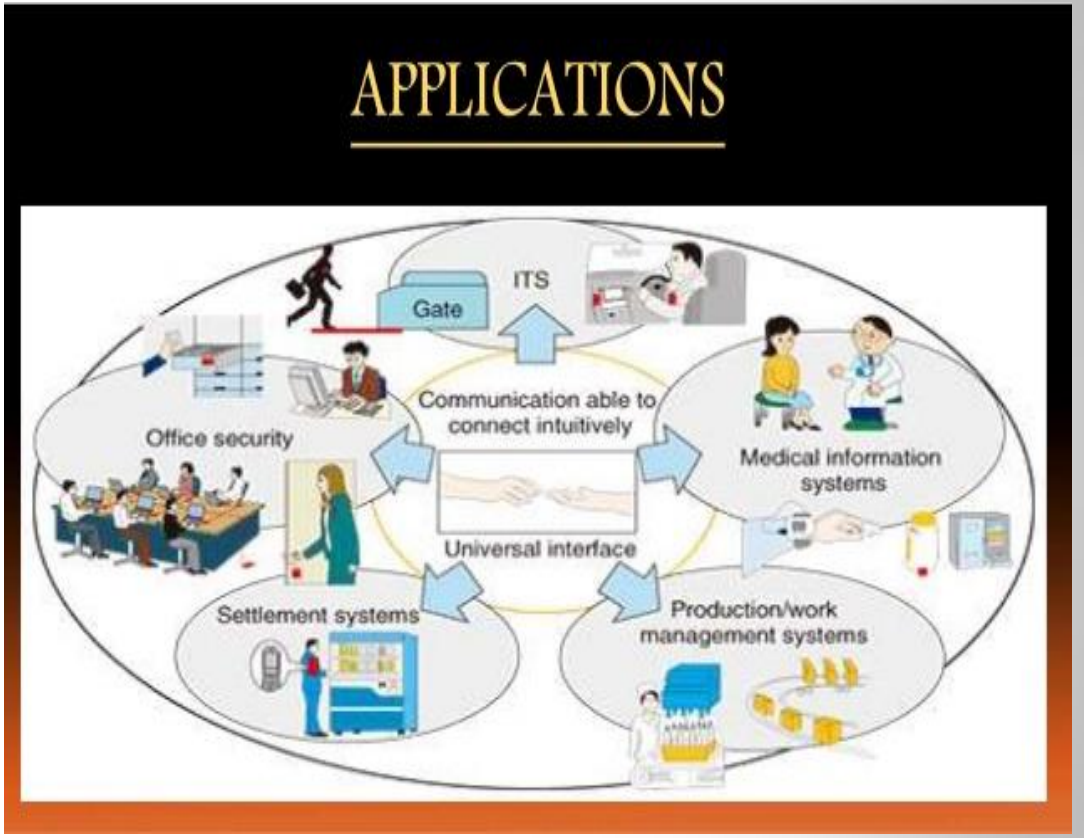
- **NEW BEHAVIOR PATTERN:**

a) Redtacton wireless earphones and the phones gets connected and we can listen to music by just a touch.If other person wants to listen the music they just want to hold our hands.It transfers through multiple bodies.

- **SECURITY APPLICATIONS:**

a) Automatic unlock of confidential documents and keep a track on who accesed it.

b) Automated door ,car,, bicycle lock and unlock by touch.



SAFETY

- No current pass through the body,it uses the naturally available electric field on body .
- The transmitter and receiver has insulating films
- RedTacton has"" RADIO FREQUENCY EXPOSURE PROTECTION"" standard (RCR STD-38) issued by the association of Radio Industries and Bussiness (ARIB
- RCR STD 38-**electric field intensity-less than 82.4V/m; displacement current-less than45mA with 10MHz.**

- **COMPETITOR'S**

- **Bluetooth**
- **Zigbee**
- **IrDA(INFRA RED DATA ASSOCIATION)**
- **UWB(ULTRA WIDE BAND)**

CONCLUSION

- ✓ This technology uses minimum power and data loss during the transmission is less.
- ✓ It does not require electrodes to be in direct contact with the skin.
- ✓ The transceivers are programmable we can decide what to share with whom and with which device.
- ✓ This technology is expensive compared to its competitor technologies and it can be useful within few centimetres.

K.VAISHNAVI
2ND year
ECE-B

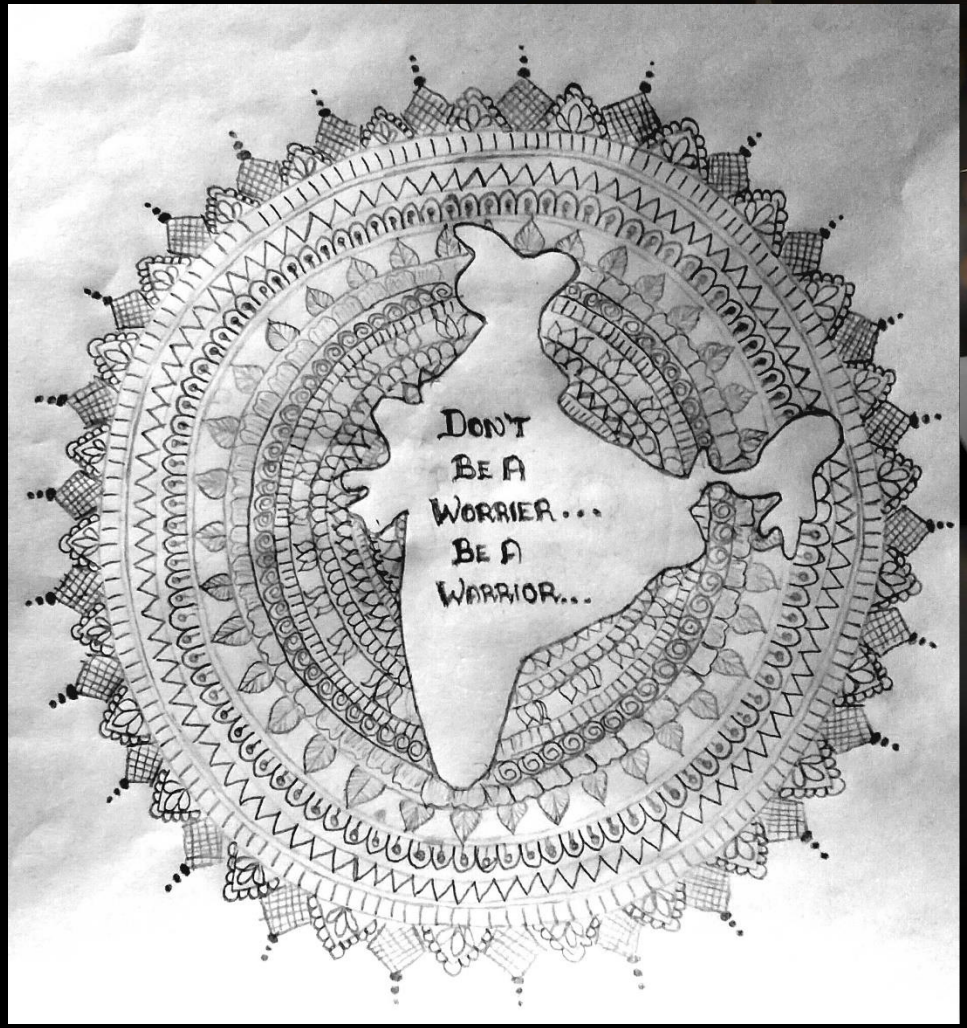
திருநங்கை

ஆணாய் பிறப்பில்
பெண்ணாய் உணர்வில்
திருநங்கையாய் சமூகத்தில்
உருவெடுக்கும் தருணத்தில்
வாழ்க்கையே போராட்டத்தில்
அல்லவா ஆரம்பிக்கிறாள்;
உச்சத்தில் வைத்த பெற்றவளும்
துச்சத்தில் போட முனைகிறாள்;
நங்கை என்று எண்ணி
கை கொடுத்த மங்கை கூட
திருநங்கை என்றவுடன்
சிரித்தால் கை தட்டி;
மதியையே வெல்லும்
மதி இருப்பினும்
மிதிபட்டே போனோமடா உன்னிடம்
மதி கெட்ட மானுடா;
அர்த்தநாரீஸ்வரனைக் கும்பிடும் பக்தா;
யாம் அவரின் வடிவமடா மூடா!
இன்றோ
எங்கள் திறம் கண்டு
பணி கொடுத்த
துறைகள் பல!
அதை
மனம் கொண்டு

வரவேற்ற
மனங்களோ சில;
அஃறிணைப் அரவணைக்கும் நீ
அரவாணிகள் வெறுப்பது ஏன்?
இரவின் இருளில்
எம்மை தேடும் நீயும்
ஓர் அஃறிணை என்பதாலோ?
நாணத்தால் நாண் ஏறியது போதும்,
இனி
வில்லில் நாண் ஏற்றுவதே
எம் கொள்கை
விடியல் ஒன்று பிறக்கட்டும்!

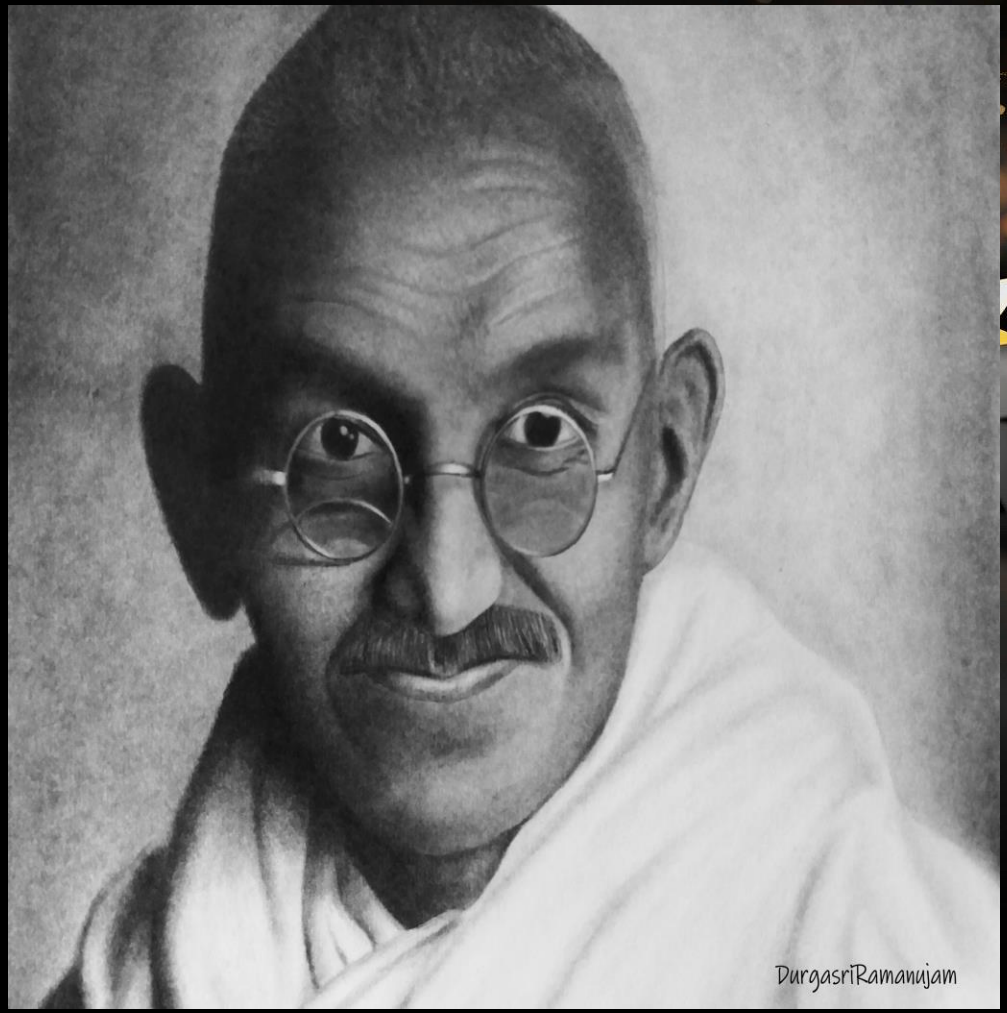
Aaisha thahseena.M
3rd yr ECE A

ART WORKS

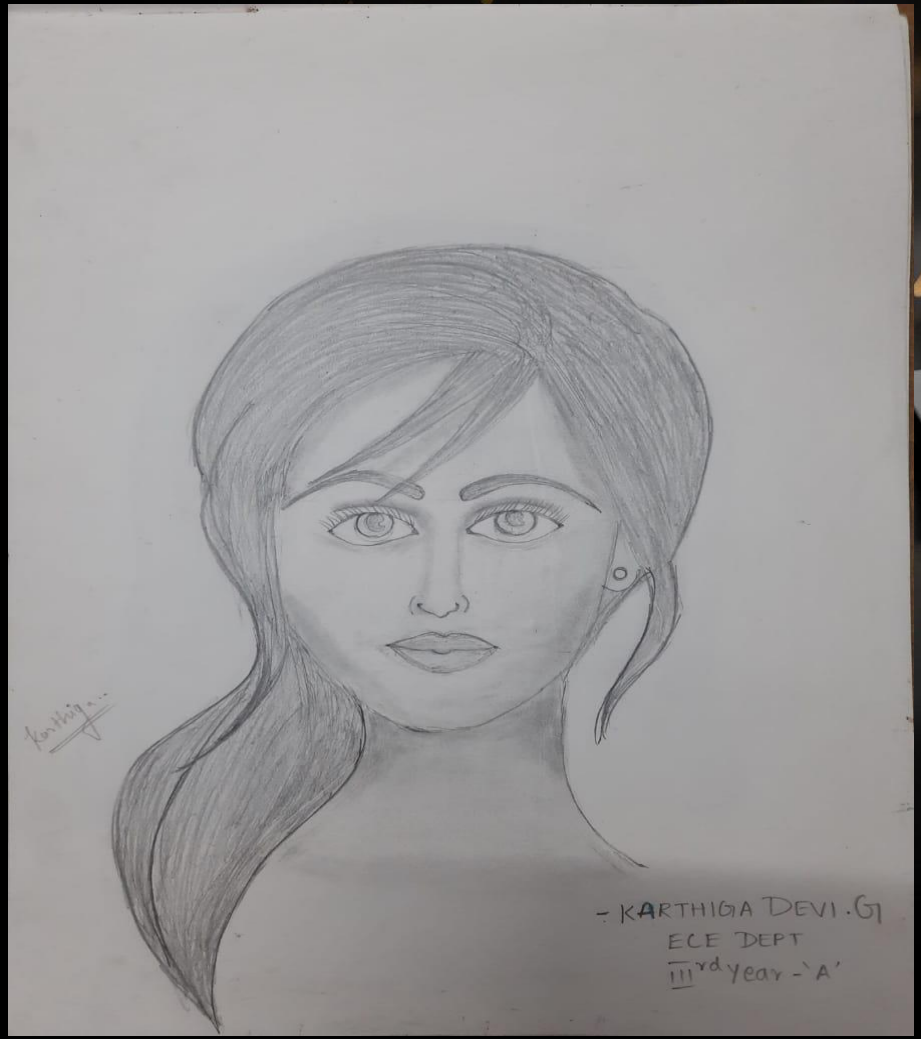


Poojapriyadharshini.A
2nd yr ECE B

Praveena.M
2nd yr ECE B



Durgasri.R
3rd yr ECE A



Karthiga Devi.G
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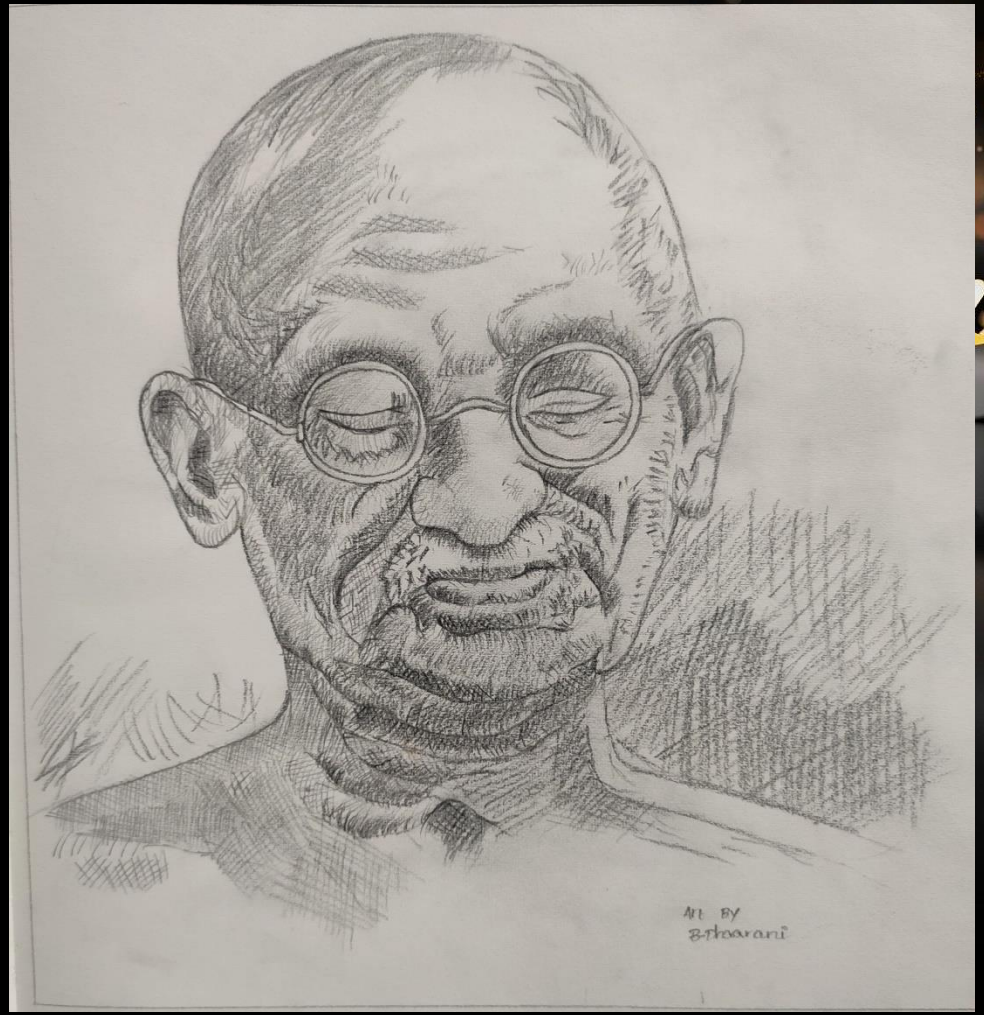


Dhaarani.B
3rd yr ECE A

Kaviya.S
3rd yr ECE A

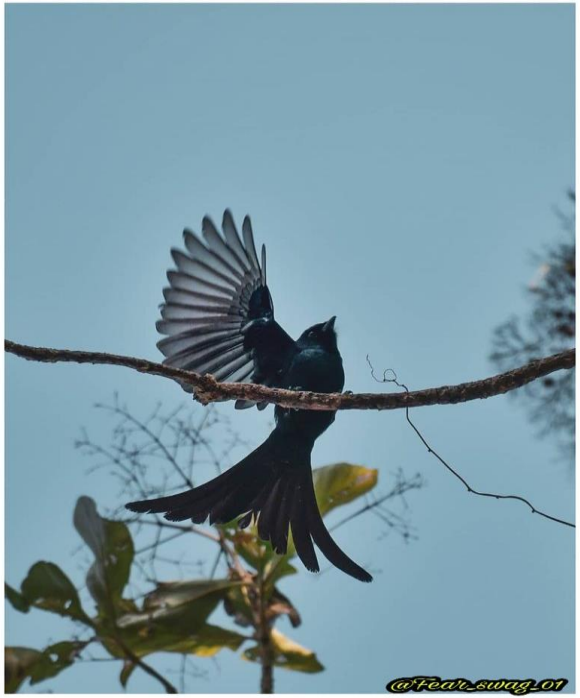
PHOTOGRAPHY

Shruthi.P.S
2nd yr ECE B

Karthiga Devi.G
3rd yr ECE A

Ranganathan.A
2nd ye ECE B

Mohamed musaraf
2nd yr ECE B



Balasubramanian.S
2nd yr ECE A

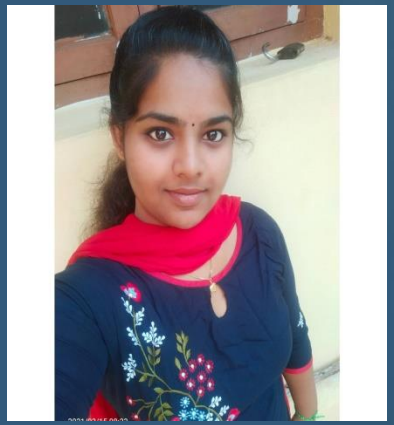
Varadakrishnan.B
3rd yr ECE B

Jannifer.D
3rd yr ECEA

Kaviya.S
3rd yr ECEA

FROM EDITOR'S DESK

Kumaragurupharan.S



Kaviya.S

It gives us a great privilege to launch the 17th edition of our department E-magazine "**WIZZARD**", which gives us an opportunity for budding minds to share information on various other aspects of **ECE**.

Well, any educated society is incomplete without adequate time investment in informative articles. For unleashing a person's creativity, a proper medium is prerequisite.

This was another splendid year, with our students bringing laurels to the college in all possible spheres. Their achievements were so vivid that all our efforts to include their accomplishments in one issue went in vain. Isn't it rightly said, "**A flower makes no garland**". Thus, this magazine is not the outcome of the effort put in by an individual, but is the immense effort put forward by the staff's, the editorial board and the students. Hope you will cherish our efforts.

Sivaram.R

Sindhuja.R


THANK
YOU