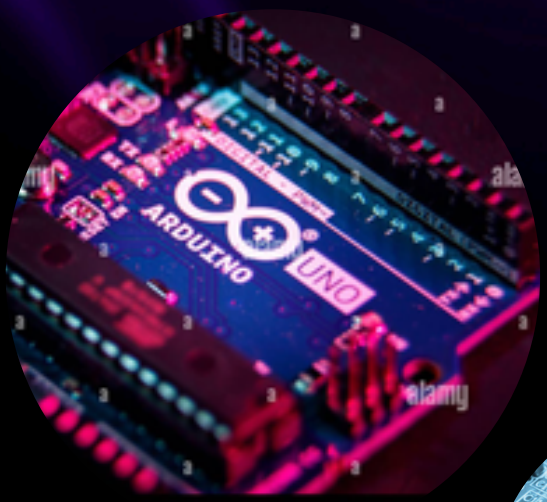
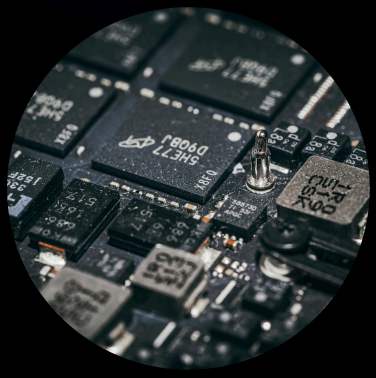
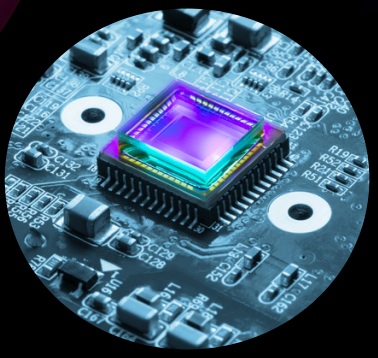
DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE (AUTONOMOUS)

(Approved by AICTE, New Delhi & Affliated to Anna University, Chennai)
DHAMALAKSHMI SRINIVASAN
Re Accredited with A Grade by NAAC, Accredited by TCS.
Re-Accredited by NBA (BME, ECE & EEE) PERAMBALUR - 621 212







VELOCITY WALL

MAGAZINE

2024-2025

Dhanalakshmi Srinivasan Engineering College (A)

Vision of the Institute

To be a leader imparting in quality technical education, research and enterprising skills in pursuit of professional excellence.

Mission of the Institute

- To promote quality education & technical skills to meet the industry requirements.
- To incorporate team work, leadership skills & lifelong learning.
- To facilitate career development & higher education assistance.
- To encourage innovative ideas for research & development and entrepreneurship for societal needs.
- To inculcate ethical responsibility & human values

Department of Electronics and Communication Engineering

Vision of the Department

To be a centre of repute for higher learning and research to cater the knowledge in Electronics and Communication field to the ever growing needs of industries and to facilitate the transformation of students into good human beings.

Mission of the Department

M1: Develop life-long learning skills that allow them to be adaptive and responsive to changes in society, technology and the environment, as well as career demands.

M2: Promote a research activity through constant interaction with research organizations and industries.

M3: Instigate our students to become responsible citizens and competent professionals with high ethical values.

M4: Enable students to develop skills to solve complex technological problems of time and also provide a framework for promoting collaborative and multidisciplinary activities.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: An in-depth knowledge and demonstrations related to the core area of Electronics and Communication Engineering, starting from the basics to the level of analysis, synthesis and design of circuits and systems, in addition to the exposure on latest advancements in the field.

PEO2: Knowledge of recent design trends and adapt to new technologies through lifelong learning.

PEO3: Technical knowledge, ethical values for professional development of the student to solve complex problems and to work in multi-disciplinary ambience, whose solutions lead to significant societal benefits.

PEO4: Motivation to pursue higher studies so that they can contribute to the teaching profession, research and development of Electronics and Communication Engineering.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Fabrication of Electronic Components: Graduates of the program will design a hardware model in real time applications using embedded technology and fabricate electronic equipment used in communication industries.

PSO2: Usage of Tools: Graduates can exploit tools like Xilinx, Tanner, IE3D, Labview, Matlab, ModelSim, Keil and OrCAD to meet desired specifications with realistic constraints such as manufacturability and sustainability.

PROGRAM OUTCOMES (POs)

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: 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.

FROM CHANCELLOR DESK :

Shri.A.Srinivasan
Esteemed Chancellor
Dhanalakshmi Srinivasan University

Society is long dependent on education to provide the necessary stepping stone on one's path towards individual growth, which contributes directly to the growth of a society and country as a whole. In view of the ever-increasing demand for professionally qualified youth, it has become imperative to increase the availability of quality higher education in diverse fields.

Dhanalakshmi Srinivasan Engineering College (DSEC) strives to establish itself as a citadel of quality technical education in the global arena of engineering and technological education. The college actively updates itself with foresight, vision and perspective of committed learning, research and training to meet the global demands for professional talents of international standards.

"Towards Excellence" is the motto of the institution. The institution provides world class infrastructural facilities comparable with the best of its kind in the field of education, state of the art laboratories, innovative teaching-learning process and personality development programmes in moulding and creating students of high technical expertise and managerial capabilities.

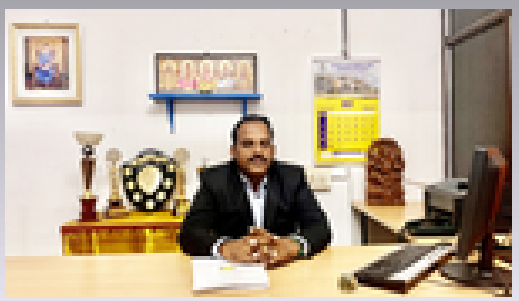
FROM PRINCIPAL DESK :

Prof. Dr. D. Shanmugasundaram M.E., Ph.D., F.I.E., C.Eng.,
Principal

Welcome to Dhanalakshmi Srinivasan Engineering College (AUTONOMOUS), where we are dedicated to providing a transformative educational experience that empowers our students to excel in the ever-evolving world of engineering and technology. Since our founding in 2001, our mission has been clear: to bring quality technical education to the rural communities of Tamil Nadu, bridging the gap and creating opportunities for aspiring engineers. At DSEC, we take great pride in our achievements: the DSEC is accredited with A Grade by NAAC, which remains valid until 2025 and the departments of AERO, BME, CSE, ECE, EEE, IT AND MECH of the institution are accredited by the NBA. Right now, the DSEC offers 11 UG Programmes and 6 PG Programmes and also promotes a research culture at all three higher educational levels. This recognition is a testament to our unwavering commitment to academic excellence and innovation. Our lush green campus and state-of-the-art facilities provide an inspiring environment for learning and growth, complemented by our distinguished faculty who bring a wealth of industry and academic experience to mentor and guide our students.

As we celebrate 25 years of enchanting education, the success stories of our graduates stand as a testament to the quality of education imparted at DSEC. Our graduates are sought after by reputable industries, reflecting the caliber of talent nurtured within our institution. Our accredited programs, state-of-the-art facilities, and dedicated faculty foster a culture of research and excellence. Join us at DSEC and embark on a transformative educational journey that opens doors to boundless opportunities.

FROM VICE PRINCIPAL DESK :



Dr.K.Anbarasan M.E.,Ph.D.,
Vice Principal

It gives me immense pleasure to share my thoughts through this edition of our magazine. A magazine is more than just pages of text and images—it is a reflection of our collective spirit, creativity, and achievements. Each article, design, and idea represents the dedication of our students and staff, who continue to inspire us with their talent and innovation.

Education is not confined to classrooms alone. It thrives in every debate, every experiment, every cultural performance, and every creative expression. This magazine is a testament to that vibrant learning environment, where curiosity meets discipline and imagination meets knowledge.

As Vice Principal, I encourage each of you to embrace challenges with confidence, nurture your passions, and contribute meaningfully to society. Let this magazine remind us that growth is a continuous journey, and every small effort adds to the larger vision of excellence.

I extend my heartfelt appreciation to the editorial team, contributors, and all those who worked tirelessly to bring this edition to life. May this magazine continue to be a source of inspiration and pride for our institution.

FROM HOD DESK :

Mrs.P.Rajeswari
Head of the Department

It is a privilege to address you through this edition of our department magazine. A magazine is not merely a collection of articles—it is a mirror that reflects the enthusiasm, creativity, and intellectual growth of our students and staff.

Our department has always strived to balance academic excellence with holistic development. Beyond textbooks and classrooms, true learning happens when ideas are shared, challenges are embraced, and innovation is encouraged. This magazine stands as evidence of that spirit, showcasing the talents and achievements of our vibrant community.

I urge every student to cultivate curiosity, discipline, and teamwork. These qualities will not only help you excel in academics but also prepare you to face the challenges of the professional world with confidence. Remember, success is not defined by grades alone, but by the values you uphold and the contributions you make to society.

I extend my sincere appreciation to the editorial team, faculty mentors, and all contributors who have worked diligently to bring this edition to life. May this magazine continue to inspire creativity, foster collaboration, and strengthen the identity of our department.

VELOCITY WALL MAGAZINE EDITORIAL MEMBERS

CHIEF PATRONS

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chairman, Dhanalakshmi Srinivasan group of educational trust

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Head of the department -ECE

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Mr.Priyadharsan, III year ECE-B
Mr.Madhusudhanan S,III year ECE-B
Mr.Navaaneth N,III year ECE-B
Mr.Muthu Selvam, III year ECE-B
Mr.Arun S,II year ECE-A

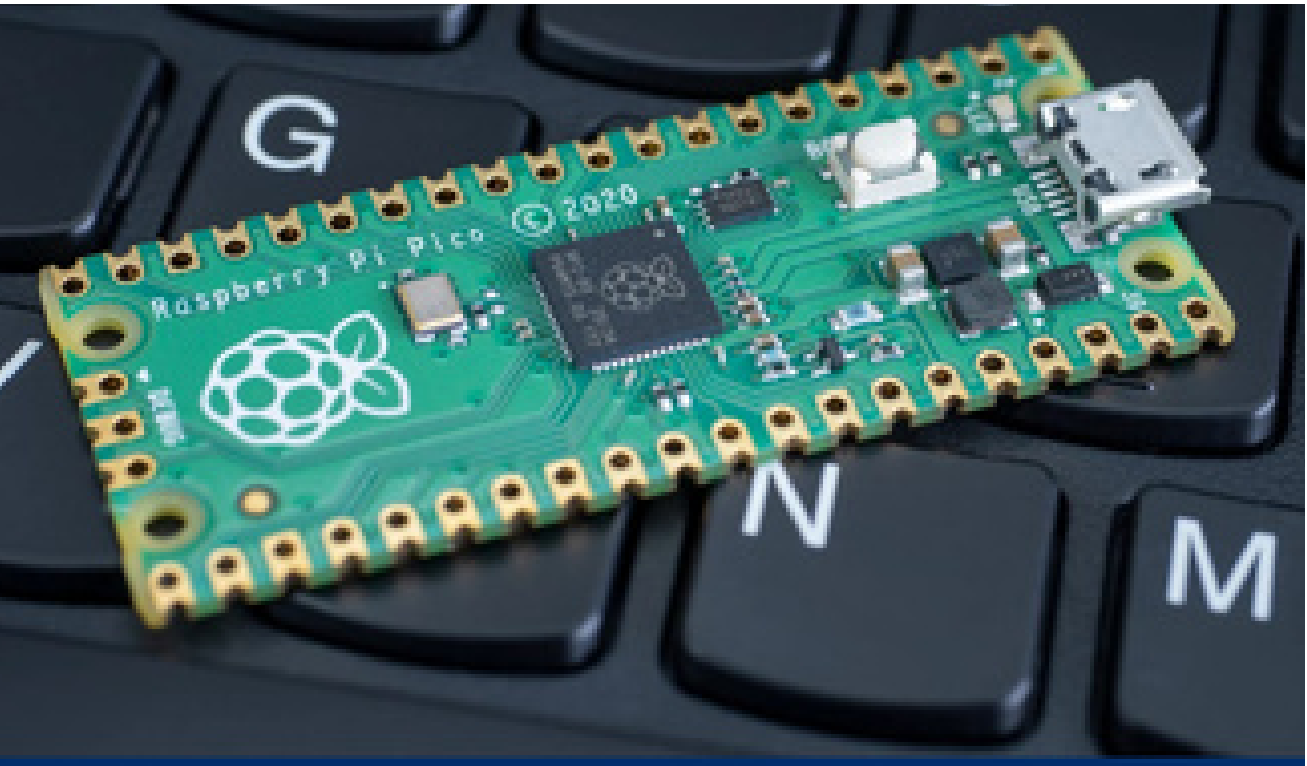
Table of Contents

Introduction of Raspberry pi

A Raspberry Pi is a low-cost, credit-card-sized, single-board computer developed in the UK by the Raspberry Pi Foundation to promote computer science education. It functions as a complete computer, featuring a CPU, GPU, RAM, USB ports, and GPIO pins, enabling users to run Linux, program in Python, build IoT projects, and control electronics.

Components of Raspberry pi

System on a Chip (SoC): The core component (e.g., Broadcom BCM2712 in RPi 5) containing the ARM-based processor (CPU) and VideoCore Graphics Processing Unit (GPU).
Memory (RAM): LPDDR4-3200 SDRAM, ranging from 1GB to 8GB depending on the model.
MicroSD Card Slot: Used for the operating system and data storage, as there is no onboard hard drive.
GPIO Header (40-pin): General Purpose Input/Output pins used for connecting sensors, motors, and other electronic components.
USB Ports: Multiple ports for keyboards, mice, and external drives (USB 2.0 and USB 3.0, depending on model).



Conclusion of Raspberry pi

The Raspberry Pi is a remarkably adaptable tool that bridges the gap between simple microcontrollers and full-sized PCs. It is the definitive platform for rapid prototyping, IoT, and educational technology, offering unmatched value and flexibility for a wide range of users, from beginners to professionals

The Mini Project

MOCOBOT- MOTION CONTROLLED ARM

Mocobot (Motion Controlled Robot Arm) is a gesture-based robotic arm system designed to replicate human hand movements in real time. The project focuses on creating an intuitive and contactless method of controlling a robotic arm using natural hand gestures, eliminating the need for traditional input devices such as joysticks or switches.

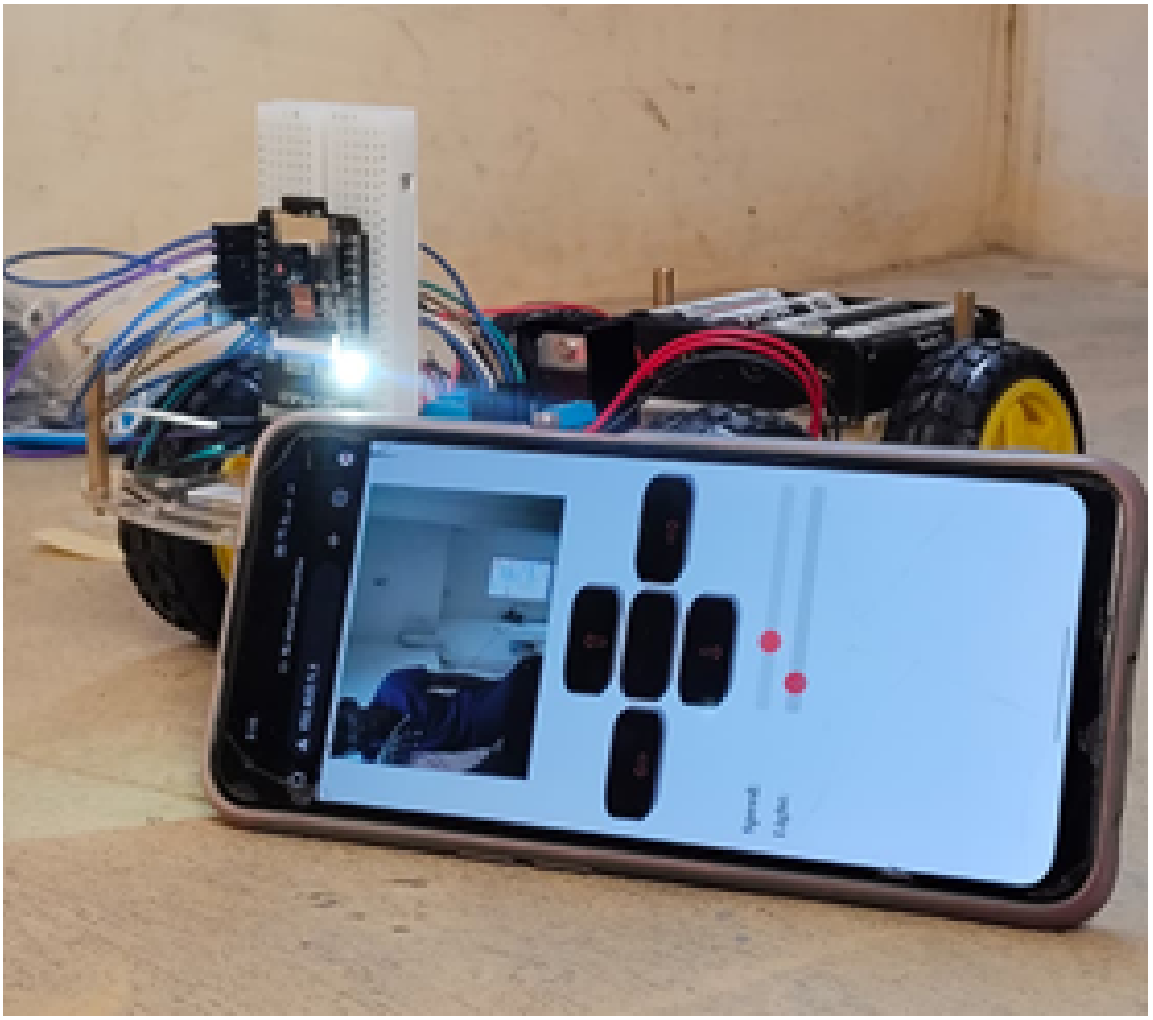
The system works by capturing the user's hand movements through motion-sensing components, which are processed by a microcontroller. These motion signals are then translated into precise movements of servo motors that drive the robotic arm joints, enabling actions such as lifting, rotating, gripping, and releasing objects. The design emphasizes accuracy, responsiveness, and ease of use.

Mocobot has potential applications in fields such as industrial automation, medical assistance, hazardous environment handling, robotics education, and assistive technology for individuals with limited mobility. By combining human motion with robotic precision, this project demonstrates an efficient and user-friendly approach to human–robot interaction.

TEAM MEMBERS

A.Gopinath
S.Janagaran
A.Gowtham raj
S.Dhanush

SURVEILLANCE ROBO :



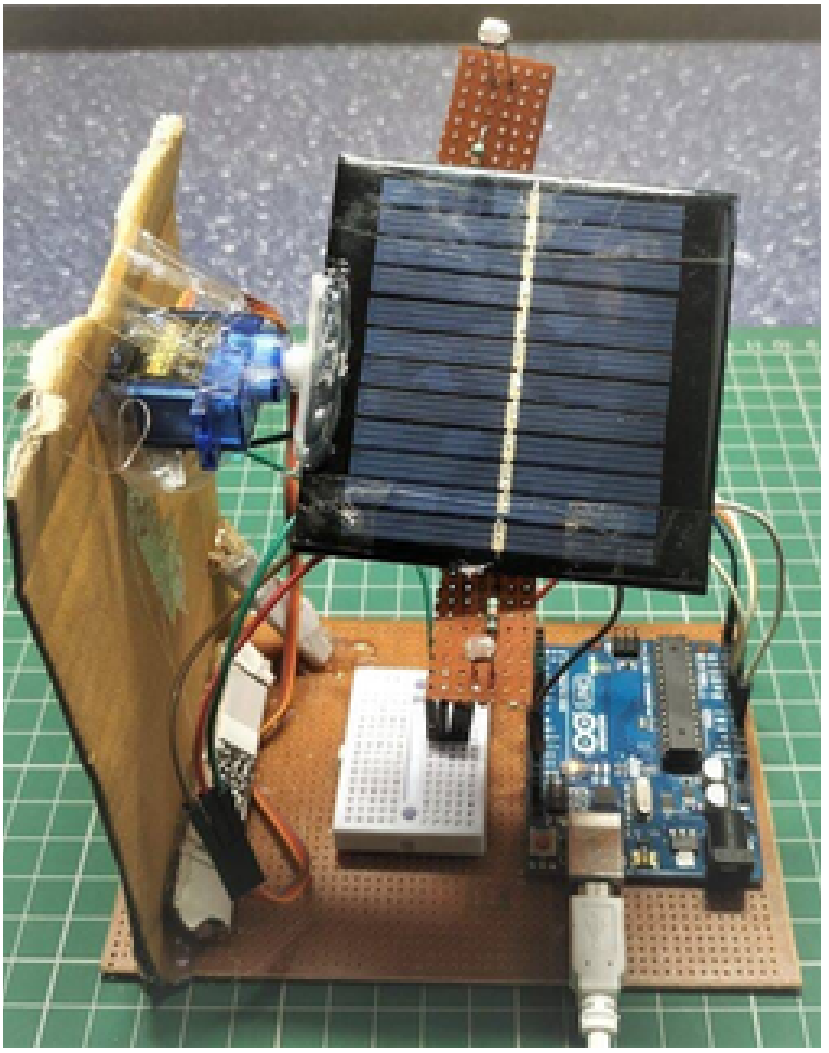
Abstract

This project focuses on the development of a Surveillance Robo using ESP32-CAM for real-time monitoring and security applications. The ESP32-CAM module provides live video streaming through Wi-Fi, allowing remote surveillance via a web browser or mobile device. The robot is equipped with DC motors for controlled movement in different directions. Users can remotely navigate the robot while viewing live video footage. The system offers a low-cost and efficient solution for monitoring unsafe or restricted areas.

TEAM MEMBERS

Imaanuvel S
Gurunathan A
Bavin D
Aadhira S
Anusha P

METAL DETECTOR USING ARDUINO:



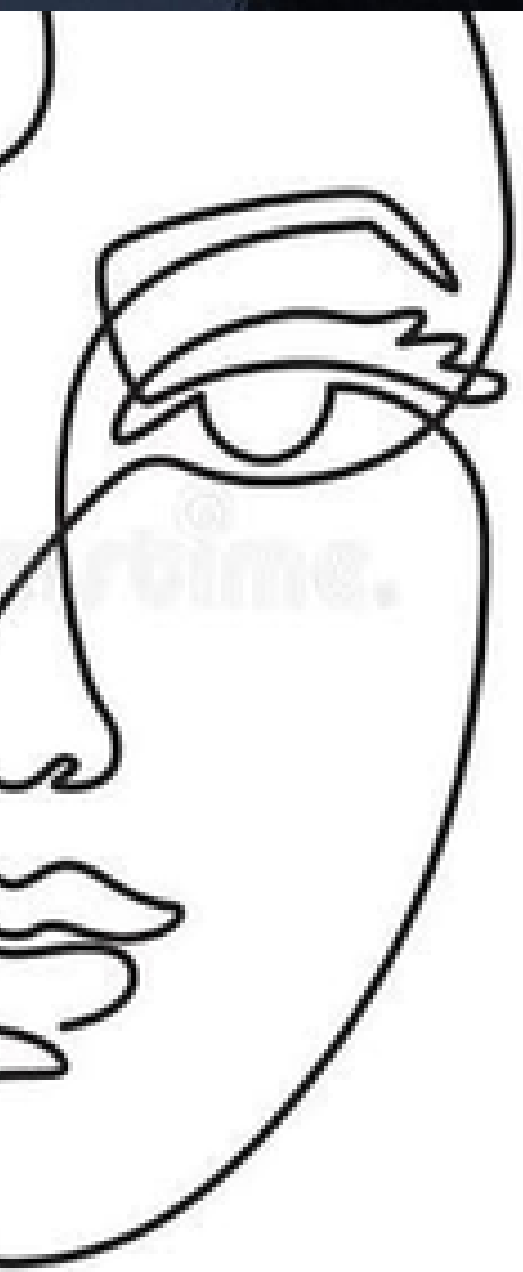
This metal detector major projects for ece can help also the people who want to search some metal or it may be helpful to segregate the metallic waste out from the garbage. so, you can include this project in any other project.

This project is the most searchable project from ece students. All the work, construction, and everything about the project we have shared into the project you can go through the link. There is one LED and buzzer which will notify you when it detects any metal. it can only detect the steel only. for other metals, you have to modify the circuit.

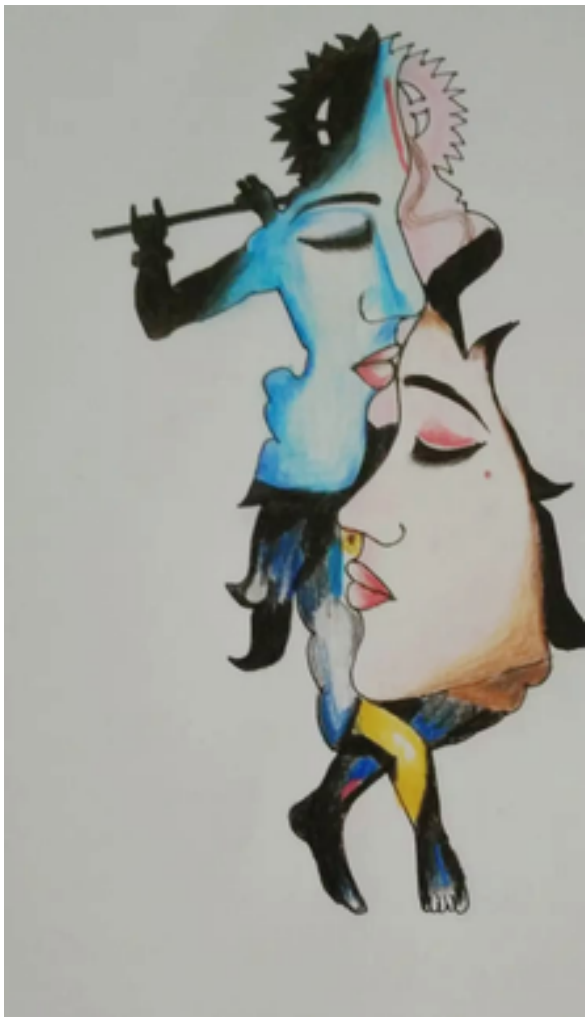
TEAM MEMBERS

MADHUSUDANAN S S
PRIVADHARSHAN D
MUTHU SELVAM M
NAVANEETH N
ARUN S

Sketching



ETERNAL FUSION



GOKUL P
II YEAR ECE

WHERE PETALS LEARN TO FLY

GOKUL P
II YEAR ECE

**Where petals learn to fly,
dreams rise gently into the sky."**

It keeps the imagery soft and uplifting, blending nature with aspiration.

WRATH OF THUNDER

DHANUSH S
II YEAR ECE

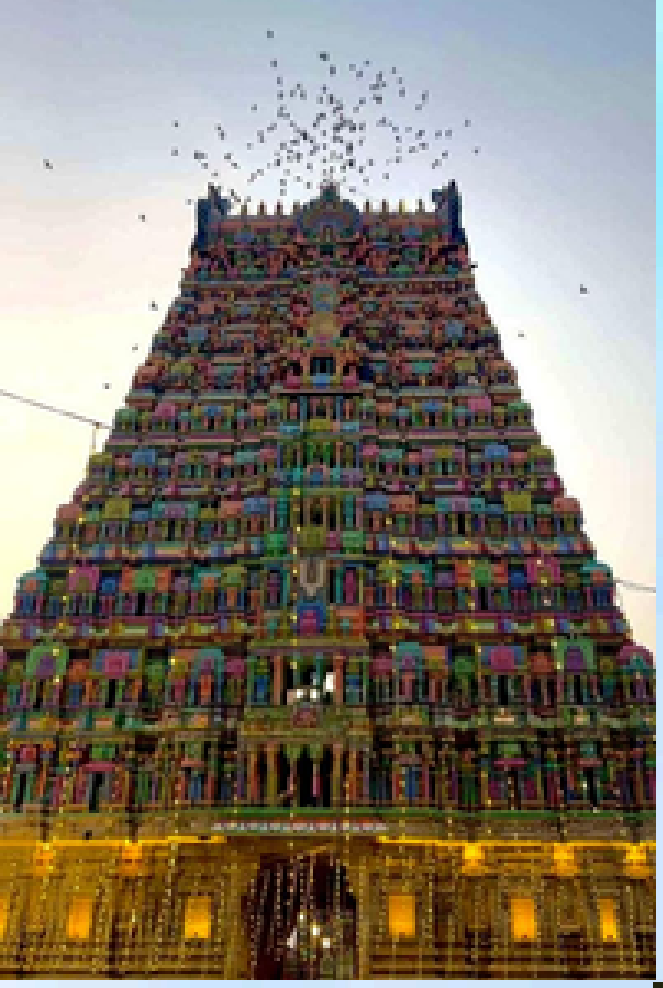
GAROU

Unleashing a storm of unstoppable force, a strike that shatters the sky itself. A single blow erupts like raging thunder, leaving nothing but silence in its wake.

Photography

Midnight Machine”
Through the mist and silence,
power waits in the shadows.

PRIVADHARSHAN D
III YEAR ECE



Tower of Timeless Faith”
Where colors rise to the sky and prayers take flight with the birds.

PRIVADHARSHAN D
III YEAR ECE

Nature’s workers, hidden in the leaves

BALASUBRAMANIAN PK
II YEAR ECE

ஒரு குப்பை கதை !!

ஒரு குப்பை பையொன்று
இருமனம் தூரம் நடந்து
மூன்றே அடிக்கு தள்ளி நின்று
நாலா புறமும் சிதறி
ஐந்தடி நீளம் கொண்ட
குப்பைத்தொட்டியில் விழ மறுத்தது...

- ப கோகுல

இந்த வருடமும் காதலர்களை
பார்த்தப்படியே நகர்கிறது
' காதலர் திங்கள் '

PRIVADHARSHAN D
III YEAR ECE

என்னுயிரி(னி)ன்..

மாறாத அன்பு
மாற்றம் இல்லாதது
தீராத காதல்
தீண்டல் இல்லாதது
சேராத நாள்
சேராமல் விலகியே
ஆறாத காயம்
ஆறும்வரை விலகியே

MADHUSUDANAN S S
III YEAR ECE

சாதனை ஒருமுறை
சோதனை பலமுறை

வாழ்க்கை ஒருமுறை
வாய்ப்புகள் பலமுறை

மதி ஒருமுறை
மறதி பலமுறை

காதல் ஒருமுறை
காயங்கள் பலமுறை

பாவை ஒருமுறை
பார்வை பலமுறை

காலம் ஒருமுறை
காணியம் பலமுறை

ALEX WILLIAM
II YEAR ECE

நன்றி அம்மா 🙏👩‍♀️

ஊரெல்லாம் ராஜாக்கள் ஆள
ராமன் ஆண்டால் எனக்கு என்ன??
இராவணன் ஆண்டால் எனக்கு என்ன ??
என்று வீடு என்னும் ராஜ்ஜியத்தை ஆள உன் கனவுகளை பூஜ்ஜியமாக்கியதற்கு😌💯 !!

உருவம் தெரியாத என்ன உலகமாய் நினைத்ததற்கு❤️ !

கருவில் இருக்கும் என்னை கடவுளை எண்ணியதற்கு😈 !!
நான் பிறந்தவுடன் என்னை சுமையாகவோ மலையாகவோ நினைக்காமல் என்னை ஒரு மலர் மாலையாக எண்ணி உன் மார்போடு அணைத்துக் கொண்டதற்கு☺️ !!!
உன் அடிவயிறு பசித்தாலும் ; என் பிள்ளைக்கு இந்த தின்பண்டம் பிடிக்கும் என்று அதேஅடிவயிற்றில் உன் முந்தானையால் பதுக்கி வைத்து எனக்கு தந்தற்காக🥲 !!
நான் கால் நீட்டி வீட்டில் அமர;நீ கால் கடுக்க நின்னு வேலை செய்ததற்காக 😶!!
சிறுவயதில் பட்டம் கூட பறக்க விடாத நீ இன்று என்னை ஒரு பட்டதாரியாக மாற்றியதற்கு👨‍🎓💯!!
காதுபிடித்து திருவி எனக்கு வாழ்க்கை பாடம் கற்று தந்ததற்கு😂❤️ !!
உன் உடம்பு நெருப்பாய் கொதித்தாலும் அதை எல்லாம் விட்டு விட்டு உன் பிள்ளை எனக்காக பொறுப்பாய் சமைத்ததற்கு🥲!!
மழை , வெயில்,குளிர் எல்லாம் இந்த இயற்கைக்கு தானே உண்டு ; இந்த இறைவிக்கு (அம்மாக்கு) இல்லை என்று நீ ஓடிய நாள்கள்💯 !!
அது எப்படி அம்மா இட்லி மாவு குறைவாக இருக்கும் நேரத்தில் மட்டும் உனக்கு இட்லி பிடிக்காமல் போகும்💯??

நான் பிறந்தவுடன் நீயும் எனக்காகவே பிறந்து எப்போது வரை எனக்காகவே வாழ்ந்துகொண்டு கொண்டு இருகிறாய் !!
நன்றி அம்மா 👩‍♀️❤️

நான் உன்னை எட்டி உதைத்தாலும் என் கால்களை பிடித்து என் சாமியே என்று முத்தமிட்டு கொஞ்சியதற்கு😩 !!

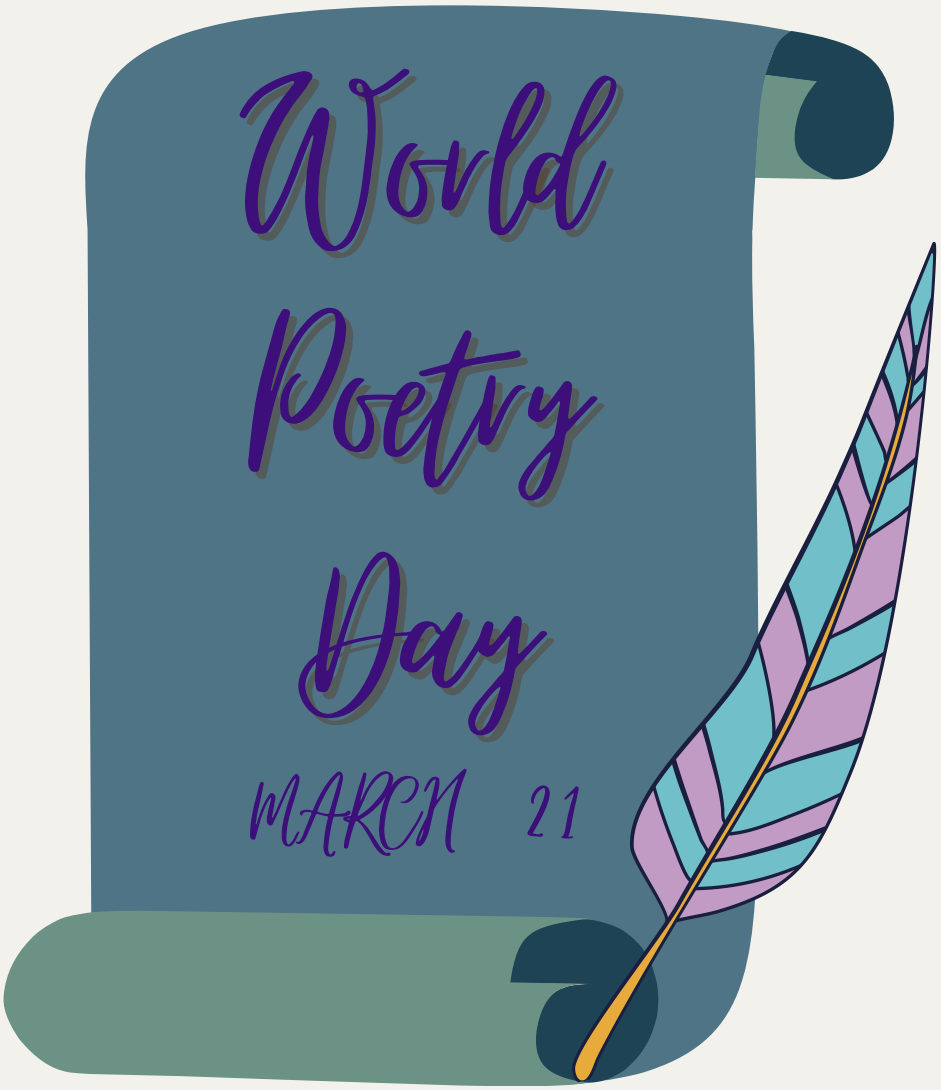
வாடிய என் முகத்தை பார்த்து என்னை நாடி வந்து நிமிடத்தில் என்னை சரிசெயததற்கு☺️ !!
எனக்கு வயது ஆனாலும் கூட இன்னும் என்னை சிறுபிள்ளை போல என்னை அணைத்துக்கொண்டு தானே இருகிறாய் 😩!!!

நான் எந்த பிறவியில் செய்த தவமோ நீ இன்று என் அம்மாவாக இருக்க 💌 !!
இதற்கு கைமாறு நான் என்ன செய்ய போகிறேன் என்று தெரியவில்லையே 🥲

இறைவா நீ ஆணையிடு
தாயே எந்தன் மகளாக மாற 🙏❤️😘

Elakkiya. A
III YEAR ECE

Poetry is the mirror of the heart, where words dance to the music of thought."



Men's Bulge

Some men have ones, That really stick out, Others have ones, That jiggle about.
Some are quite small, And quite discreet, Others bulge out. You stare when you meet
Its only the males, When men they become, Named after Adam, Who had the first one.
Women have missed out, But they don't care, Instead of an apple. They have a pair

HARIS SANJAY
II YEAR ECE

RECENT TECHNOLOGY

What is 6G?

- 6G is the sixth generation of mobile communication technology, planned as the successor to 5G.
- Development is being coordinated by the International Telecommunication Union (ITU-R) under the IMT-2030 framework.
- Commercial rollout is expected around 2030, though research and pilot projects are already underway.

6G NETWORK

HOW 6G WORKS

- Higher Radio Frequencies: Operates in the terahertz (THz) spectrum, far beyond the millimeter waves used in 5G.
- Ultra-Low Latency: Promises latency at microsecond speeds, up to 1,000 times faster than 5G.
- Massive Bandwidth: Enables multi-sensory data fusion (touch, vision, sound) and supports hyper-connectivity across billions of devices.
- AI-Driven Networks: Uses cognitive technologies like artificial intelligence for self-optimizing, adaptive communication.
- Integration with Computing: Designed to merge communication with universal computing and precise sensing, making networks more intelligent and context-aware.

POTENTIAL APPLICATIONS

- Holographic Telepresence: Real-time 3D communication.
- Fully Immersive AR/VR: Seamless integration of digital and physical worlds.
- Autonomous Systems: Smarter self-driving cars, drones, and robotics.
- Smart Cities & IoT: Billions of devices interconnected with ultra-fast response.
- Healthcare: Remote surgeries with real-time precision.

CHALLENGES AHEAD

- Infrastructure Costs: Requires massive investment in new hardware and spectrum allocation.
- Energy Demand: Higher frequencies may consume more power.
- Security & Privacy: More connected devices mean greater risks.
- Global Standards: Needs international cooperation for interoperability.

Would you like me to also compare 6G vs 5G in detail so you can see exactly how it improves over the current generation?

MEDALS & ACHIEVEMENT

CRICKET

Congratulations on securing lst Prize in cricket! Your teamwork, discipline, and dedication on the court are truly commendable. This victory reflects your hard work, skill, and sportsmanship. You have brought great pride to our institution with your outstanding performance. Keep aiming higher and continue to inspire others through your game. Wishing you many more wins and continued success in the future.

You have made us all proud with your excellent performance. Keep striving for excellence and continue to achieve greater success. Wishing you many more victories in the future.

VISHWA K from III Year ECE Bronze medal in the (Taekwondo) Anna University - Inter zonal tournaments..

CARROM

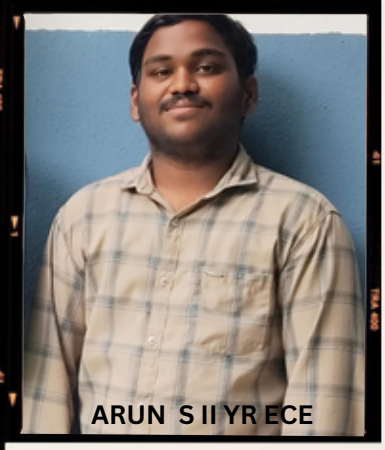
Life is like a carrom game Some times you hit the target sometimes you don't The journey is never over!

Mr.S. Arunjothi from III Year ECE ,He played in the CENTRAL CIVIL SERVICES CULTURAL & SPORTS BOARD in CARROM won the district first carrom championship with 10,000₹ cash price.

NPTEL ACHIEVERS


AADHIRA S II YR ECE


ANUSHA P II YR ECE


ARUN S II YR ECE


GOKUL P II YR ECE


PRIYADHARSHAN D III YEAR

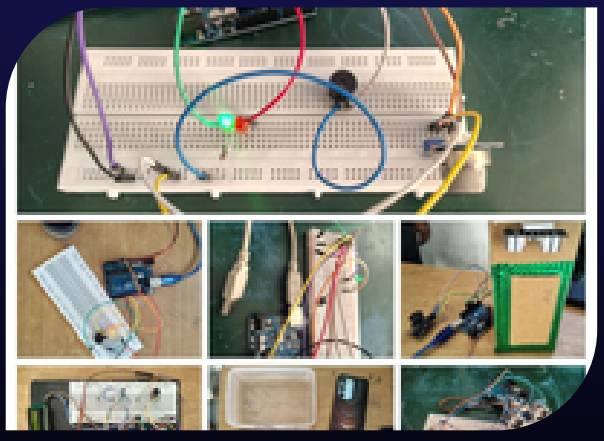

MUTHU SELVAM M III YEAR


NISHANTH P IIII YEAR


MADHUSUDANAN S S III YEAR

"Congratulations to all NPTEL Elite Achievers! Your hard work and dedication have earned you this prestiglous recognition -may this success inspire greater milestones ahead

PROJECT EXPO 2K25



ON-CAMPUS PLACEMENT STUDENTS

The recent campus placement drive was a proud milestone for our institution, with nearly 93% of eligible students successfully securing job offers. This remarkable outcome reflectsthe dedication, perseverance, and talent of our students, who prepared themselves with determination to meet the expectations of leading recruiters.

Their success is a testament to the strong academic foundation and practical exposure provided throughout their course of study Happy to sharethat Our department achieved 93% placement, out of 131 students 123 students were placed with packages from 3 LPA to 9 LPA. We proud of you guys

CONCLUSION

As we turn the final page of this edition of VELOCITY WALL the vibrant pulse of electrical and electronics engineering echoes louder than ever. From the timeless reliability of the RASPBERRY PI with its versatile pins, microcontroller heart, and endless connectivity possibilities to its seamless role in powering the Internet of Things (IoT) revolution, we've journeyed through circuits that connect not just devices, but dreams to reality.