

DHANALAKSHMI SRINIVASAN  
ENGINEERING COLLEGE(AUTONOMOUS)

2022

# VELOCITY MAGAZINE 2K23

DEPARTMENT OF  
ELECTRONICS AND COMMUNICATION  
ENGINEERING

## Volume XII

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2022-2023

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# **DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE**

## **VISION OF THE INSTITUTE**

An active and committed centre of advanced learning focused on research and training in the fields of Engineering, Technology and Management to serve the nation better.

## **MISSION OF THE INSTITUTE**

- To develop eminent scholar with a lifelong follow up of global standards by offering UG,PG and Doctoral Programmes.
- To pursue Professional and Career growth by collaborating mutually beneficial partnership with industries and higher institutes of research.
- To promote sustained research and training with emphasis on human values and leadership qualities.
- To contribute solutions for the need based issues of our society by proper ways and means as dutiful citizen.

# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

## VISION OF THE DEPARTMENT

To achieve academic excellence in the field of Electronics and Communication Engineering and to produce meritorious engineers with human values by imparting high quality technical education.

## MISSION OF THE DEPARTMENT

- To create efficient Electronics and Communication Engineers to meet the current and future demands of industry and society with ethical values.
- To instil the quality of leadership and entrepreneurship in students.
- To elevate the spirit of innovation and creativity among students towards research and development.

# PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

- **PEO1: PREPARATION** To acquire strong knowledge in mathematics, science, engineering fundamentals and ability to use the tools in Electronics and Communication Engineering.
- **PEO2: CORE COMPETENCE** To develop the ability to demonstrate technical competence in the fields of electronics and communication engineering and develop solutions to the problems in various areas in Electronics and communication Engineering.
- **PEO3: LIFELONG LEARNING AND VIRTUES** Creating an excellent academic learning environment by providing awareness on lifelong learning and guidelines needed for successful professional career.
- **PEO4: RESEARCH AND DEVELOPMENT** To provide stimulating research environment to the faculty and students so that they feel motivated for higher studies and innovation in the specific and allied domains of electronics and communication engineering.
- **PEO 5: TEAM WORK AND LEADERSHIP** Flexibility to execute team work without any disparity based on gender, knowledge, social, work environmental and economic considerations.

# Our Founder-Chairman

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Shri A. Srinivasan, the Founder-Chairman of the Dhanalakshmi Srinivasan Group, typically focuses his speeches and official messages on the transformative power of education and the institution's commitment to social betterment.

My dear students, as you leave these portals, carry forward the flame of knowledge and the spirit of service. Our country needs skilled engineers, compassionate doctors, ethical leaders, and innovative entrepreneurs. Be the change-makers. Never forget: Success is not the key to happiness; happiness is the key to success. Stay grounded, stay humble, and always remember your roots.



**DR. D. SHANMUGASUNDARAM**  
Principal  
Dhanalakshmi Srinivasan Engineering  
College (Autonomous)  
Perambalur-621 212

It is a great pleasure to stand before you today and share a few words. Education is not only about learning from books but also about developing our character, creativity, and confidence. Every student has unique talents and abilities, and it is important to explore and develop them. Hard work, discipline, and determination are the keys to success in life. We should always respect our teachers, parents, and friends who support us in our journey. Challenges may come in our path, but they help us grow stronger and wiser. Let us always stay positive, work towards our goals, and contribute to society in a meaningful way.

Thank you.

**DR. K. ANBARASAN**  
Dean - Academics  
Dhanalakshmi Srinivasan  
Engineering College  
(Autonomous)  
Perambalur-621 212, Tamil Nadu, India



It is my great honor and privilege to address you all on this proud Moment at Dhanalakshmi Srinivasan Engineering College. Our institution has always stood as a symbol of excellence in engineering education, nurturing young minds with knowledge, innovation, and strong values. Over the years, the college has grown tremendously by providing quality education, modern infrastructure, dedicated faculty, and a learning environment that encourages creativity and research. We take immense pride in the achievements of our students in academics, placements, technical competitions, and social responsibility activities. Each success story reflects the hard work of our students, the commitment of our faculty members, and the vision of our management. Today's proud moment reminds us that our institution continues to grow stronger and reach greater heights in the field of education. As we move forward, we remain committed to shaping future engineers who will contribute positively to society and make our college proud.

Thank you.

# HOD OF ECE



## **Dr. P. Rajeswari**

Associate Professor & Head  
Department of ECE  
Dhanalakshmi Srinivasan Engineering  
College (Autonomous)  
Perambalur - 621 212, Tamil Nadu,  
India

I am very happy to be part of this wonderful Moment. Our college always encourages students to develop not only academic knowledge but also creativity, discipline, and leadership skills. Programs like this help students express their talents and gain confidence. I appreciate the efforts of the organizers, staff members, and students who worked hard to make this event successful. I hope all the participants enjoy the program and learn something valuable from it. Let us continue to work together for the growth of our institution and the bright future of our students.

Thank you.

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# Engineering made simple

-Raghul kanna B || year ECE

## Camera

An Arduino camera usually refers to small, low-cost image sensor modules that can be connected to Arduino boards for projects like surveillance, robotics vision, or machine learning experiments. The most common option is the OV7670 camera module, which is widely used in DIY electronics.



## Arduino

Arduino is an open-source electronics platform that makes it easy to design and build interactive projects. At its heart are microcontroller boards like the Arduino UNO, which can be programmed to read inputs from sensors and control outputs such as LEDs, motors, or displays. What makes Arduino special is its simplicity: you write code in the Arduino IDE, upload it to the board via USB, and immediately see your project come to life.



## How to Get Started

- Buy a board → Start with Arduino Starter Kit R4 (includes UNO R4, sensors, components, projects) – perfect for hands-on learning.

Download Software → Go to official site: Arduino's popularity stems from its versatility. It's used in robotics, home automation, IoT devices, wearable tech, and even art installations.

- First Project: Blink LED (Hello World!)
- Connect board via USB.
- In IDE: Select board/port → Open example sketch "Blink" → Upload.
- Built-in LED blinks! Then add your own LED on pin 13.



# MAIN COMPONENTS OF ARDUINO UNO



## Why Arduino Excels in IoT

- Easy prototyping — Simple programming (Arduino IDE or Cloud Editor), huge library support, and plug-and-play shields/modules for Wi-Fi, Bluetooth, LoRa, etc.
- Low cost & beginner-friendly — Perfect for students, hobbyists, and final-year projects in Tamil Nadu colleges (e.g., for placements or seminars).
- Arduino Cloud integration — Official platform ([cloud.arduino.cc](https://cloud.arduino.cc)) for remote monitoring, dashboards, over-the-air updates, and secure device management — no complex servers needed.
- Edge + AI shift in 2026 — With edge computing booming (global IoT investment hitting ~\$3.4 trillion), Arduino now supports lightweight AI, real-time control, and hybrid processing.

## How Arduino Works

1. Sense — Connect sensors (temperature, humidity, soil moisture, motion, etc.).
2. Process — Arduino reads data, runs logic (e.g., if soil dry → activate pump).
3. Connect — Send data to internet via Wi-Fi/ESP8266/ESP32 add-ons, LoRa for long-range, or Arduino Cloud.
4. Act/Visualize — AI

# REV3 – THE TRADITIONAL ONE

- Microcontroller (ATmega328P) – The “brain” of the board. It’s an 8-bit AVR chip running at 16 MHz, with 32 KB flash memory, 2 KB SRAM, and 1 KB EEPROM. It’s socketed (replaceable on older boards).
- USB Interface (Type-B connector + CH340/ATmega16U2 chip) – For connecting to your computer to upload code and power the board (via USB). Provides serial communication.
- Power Regulator (5V regulator like NCP1117 or similar) – Converts input voltage (7-12V from power jack or USB) to stable 5V for the board and peripherals.
- Power Jack (Barrel connector) – For external power supply (7-12V DC recommended).

## Conclusion

In today’s rapidly evolving digital world, Arduino has proven to be more than just a microcontroller – it is a powerful, accessible gateway to the Internet of Things (IoT) revolution.



codinGame (often stylized as codinggame.com) is a free, gamified online platform where programmers of all levels solve coding puzzles, build AI bots for games, and compete in real-time challenges to sharpen their skills. Launched in 2012 by French founders Frédéric Desmoulins, Nicolas Antoniazzi, and Aude Barral, it now boasts over 3 million users worldwide and is praised for making coding feel like play rather than grind.

### Why It's Awesome for Learning

Unlike dry problem sets on LeetCode or HackerRank, CodinGame turns coding into interactive games. You code in a browser-based IDE with instant feedback, visualizations, and multiplayer battles.

# C O D I N G G A M E

-MONIKA M || year ECE

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## How to Get Started (Takes ~15 Minutes)

1. Head to [codinggame.com](https://codinggame.com) and sign up (free, email or social login).
2. Click "Start Now" → Choose a language (e.g., Python if you're new).
3. Jump into the Onboarding Puzzle—a simple "print 'Hello World'" with visuals to guide you.
4. Explore: Training → Easy Puzzles, then try a Clash or Game.

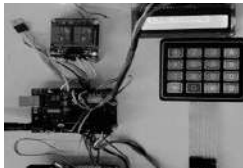
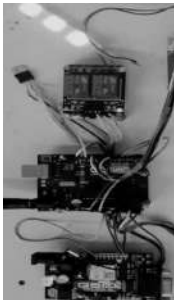


# MINI PROJECT

## AUTHSHIELD

### Abstract

In recent years, the need for enhanced security systems has increased due to rising concerns over unauthorized access and theft. This project presents the design and implementation of an OTP-based wireless door unlocking system that provides a higher level of security compared to traditional locking mechanisms. The proposed system uses a microcontroller integrated with a wireless communication module to generate and verify a One-Time Password (OTP). When a user attempts to unlock the door, an OTP is sent to the registered mobile device through a wireless network. The door unlocks only if the entered OTP matches the generated code within a specified time limit. This time-bound OTP mechanism prevents replay attacks and unauthorized access. The system is reliable, cost-effective, and easy to operate, making it suitable for homes, offices, and restricted areas. Overall, the OTP-based wireless door unlocking system enhances security by combining authentication, automation, and wireless communication.



### Team Name :

L.S Rithikasharmathi

K.Sharmila

S.sherina

J.Rakshana

# ENVIROTRACK



## Abstract

Rapid changes in climate and increasing demand for real-time environmental data have highlighted the need for intelligent monitoring solutions. This project presents the design and implementation of a Smart Weather Monitoring System that integrates sensors, microcontrollers, and wireless communication technologies to provide accurate and timely weather information. The system continuously measures key parameters such as temperature, humidity, rainfall, and atmospheric pressure, transmitting the data to a centralized platform for analysis and display. Users can access this information remotely through a mobile application or web interface, enabling proactive decision-making in agriculture, disaster management, and urban planning. By combining automation, IoT connectivity, and data visualization, the Smart Weather Monitoring System offers a reliable, cost-effective, and scalable solution for modern environmental monitoring needs.

## Team Name:

P. Nishanth

A. Mohanraja

S. Kousikram

V. Jeevabalan

# SKETCHES



“Omniscient”

# Behind the Scenes

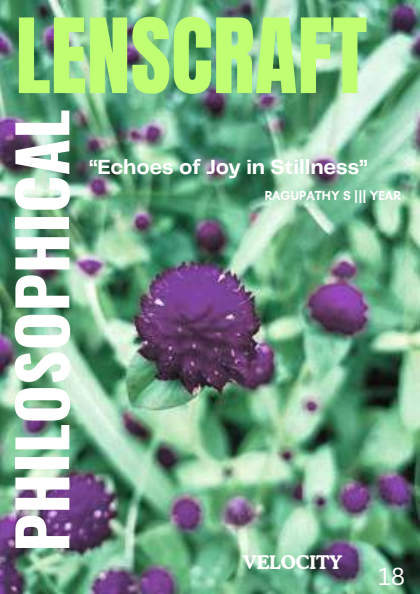
A mother carried by her children is more than a tender scene—it is the circle of love completed. Once she bore them with strength and sacrifice, and now they lift her with devotion and care. In their arms, she finds not only support but the reflection of her own soul, nurtured through years of love. It is a reminder that the bond between mother and child is eternal, flowing from one generation to the next, where love becomes both the weight and the wings of life.



Carried by Love

Between Ground and  
Soul

RAGUPATHY S ECE II  
YEAR



# LENSCRAFT

“Echoes of Joy in Stillness”

RAGUPATHY S ||| YEAR

PHILOSOPHICAL

VELOCITY

18



# Nature

# Centered

"Little Voyager in the Garden of Quiet"

"Wanderer Adrift on the Stillness of Bloom"  
Creates a more ethereal, dreamlike atmosphere.

VELOCITY

SHRATH S ||| YEAR ECE

# NATURE STRENGTH

NISHANTH P ECE ||| YEAR

VELOCITY

“Climb Higher, See  
Further.”

## A PEACE PATH WAY



# கவிதை

யாரோ நீ ! யாரோ நான் !

எது நம்மை ஈர்த்தது!!  
எது நம்மை சேர்த்தது!!

உன் கைவிரல் மோதிரமும் என் கால்விரல் மெட்டியும்  
உரசிட ஒரு  
வாழ்க்கை !!

நரை வந்த பின்னும்  
நரைக்காத நம் காதல்!!

தள்ளாடும் வயதிலும்  
தளராது இருத்தல் இருத்தல் வேண்டும்!!

நீ நீயாக இரு!!  
நான் நானாகவே இருக்கிறேன் !!

வா!!!! இருவரும் இணைந்தே பயணிப்போம் !!



ELAKKIYA. A III YEAR ECE A



# இன்றைய விவசாயம்

P.Gokul ECE , ll - year



விவசாய தொழில்நுட்பங்கள் பயனுள்ளதாக தெரிந்தது  
ஹைபிரிட் விதைகள் பயனுள்ளதாக தெரிந்தது  
இரசாயன உரங்கள் பயனுள்ளதாக தெரிந்தது  
பூச்சிக்கொல்லி மருந்து பயனுள்ளதாக தெரிந்தது  
அவ்வளவுதான் தெரிந்தது அந்த படிக்காத  
ஏழை விவசாயிக்கு

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



# " POETRY "

"EVERY POEM IS A BRIDGE BETWEEN  
SILENCE AND SPEECH, CARRYING  
EMOTIONS ACROSS TIME."



MELANCHOLIC  
SERENITY



Wet heart

Feeling so warm in this wet day, staying home to  
enjoy this without any delay,

This view at my window metts my heart, but I  
am staying apart.

With a cup of itra. sitting alone with tension  
free.

Covering my cold feet, with a thick bedstreet.

My heart inside me gets web, along the things  
outside In the rain...

R. JANANI ||| ECE



# Singing Green

R. JANANI ||| ECE

When I clients the stairs & open ithe gate.

I feel the greens saying you are not late Dancing to  
their own music see, makes me isick free.

Sitting there as admired by their pufomana, It true!  
I'm saying with full of isense.

My eyes are not ready to blink,

my hands are inot i care inot waiting to touch perior  
painer I feel the wind had me isomewhere to hevvan But  
its already seven.

A cup of tea and a melody just completes my day...

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# RECENT TECHNOLOGY

-PRASATH P ||| YEAR ECE

## What is 5G?

5G is the fifth generation of mobile network technology, succeeding 4G/LTE. It was standardized by 3GPP starting in 2018 (Release 15) and is designed to connect everyone and everything – phones, devices, machines, vehicles, and sensors – with ultra-fast, reliable, and intelligent connectivity. Unlike earlier generations focused mainly on faster mobile internet,

## Key Features of 5G

5G delivers three main capabilities: Enhanced Mobile Broadband (eMBB) Peak download speeds up to 20 Gbps (real-world often 1–10 Gbps), upload up to 10 Gbps – 100× faster than 4G. → Enables 8K video streaming, cloud gaming, and instant large file downloads.

Ultra-Reliable Low-Latency Communication (URLLC) Latency as low as 1 ms (vs. 20–50 ms in 4G)

**VELOCITY**



A new age where classic elegance intertwines with contemporary sophistication.

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### *How 5G Works*

Uses OFDM modulation + wider bandwidths (sub-6 GHz for coverage, mmWave 24-100 GHz for super speed/capacity).

Core architecture: 5G Standalone (SA) – fully independent cloud-native core (vs. Non-Standalone relying on 4G).

Key tech: Massive MIMO (many antennas), beamforming (directs signals to users), small cells, and edge computing.

### *Evolution to 5G-Advanced*

By 2026, 5G has moved beyond basic rollout to 5G-Advanced (also called 5.5G), based on 3GPP Release 18 (frozen 2024, commercializing 2025-2026):

AI/ML integration everywhere – for network optimization, energy savings, predictive maintenance, and automation.



### *Real-World Applications*

Smart Cities & Agriculture – Real-time traffic, pollution monitoring, precision farming (drones, soil sensors).

Industry 4.0 – Smart factories with wireless robots, predictive maintenance.

Healthcare – Remote surgery, telemedicine with haptic feedback.

Autonomous Vehicles & Drones – Vehicle-to-everything (V2X) communication.

Entertainment – Cloud gaming, live 8K streaming, AR concerts.

# MINDSET OF WINNERS

The mindset of winners (also called a "winning mentality" or "champion mindset") is not about luck, talent alone, or being born special. It's a developed way of thinking – rooted in psychology (like Carol Dweck's growth mindset) – that turns challenges into opportunities, failures into lessons, and effort into consistent progress. Winners believe abilities can be built through hard work, strategy, and persistence, rather than seeing them as fixed traits.

Here are the core characteristics and traits that define the mindset of true winners



## The Thought of Thinking

"I can, I will, I am." Winners constantly frame thoughts in terms of possibility and action: "I can learn this," "I will prepare harder," "I am capable." Losers dwell on "I can't," "What if I fail?" or "It's not fair." "This setback is temporary – what can I learn?" Failure isn't the end; it's data. Winners think: "What went wrong? How do I adjust next time?" They reframe losses as tuition for growth, not proof of inadequacy.

# way of Thinking

Effortless style for your everyday moments. Stay comfortable and chic with casual pieces made to fit your lifestyle.

**Growth Mindset** (Carol Dweck's foundation) – They believe skills, intelligence, and success improve with effort, learning, and practice. They embrace challenges, persist through setbacks, and see failure as feedback – not proof of inadequacy.

**No Excuses** – Winners own their results. They don't blame circumstances, others, or bad luck. Instead, they focus on what they can control and take full responsibility.

**Discipline & Consistency** – They prioritize long-term goals over short-term comfort. They show up daily – even on low-motivation days – and say "no" to distractions that don't align with their vision.

**Resilience & Grit** – They bounce back quickly from failures, disappointments, or criticism. They view obstacles as temporary and use them to grow stronger.

**Clear Goals & Vision** – Winners set specific, meaningful goals and visualize success in detail. They stay focused, track progress, and adjust strategies without losing sight of the big picture.



# Medals & Milestones

## **BASKET BALL**

Congratulations on securing 1st Prize in Basketball! 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.



## **CHESS**

Congratulations on securing 1st Prize in Chess! Your strategic thinking, patience, and dedication have truly paid off. This achievement reflects your sharp intellect and consistent practice. 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. 🏆👑





“Fast hands,  
fierce fight,  
One team, one  
light,  
Bounce, strike,  
and stand tall,  
Handball  
conquers all!”

# HAND BALL

VIGNESH G - IV YEAR  
PRAVEENKUMAR S - IV YEAR  
SANJEEV S - IV YEAR  
KALAIARASAN K - IV YEAR  
SIVABALAN P - III YEAR  
PRADHESHWARAN R - II YEAR

**VELOCITY**

Congratulations on securing 1st Prize in Handball! Your strength, speed, and teamwork made this victory possible. This achievement reflects your dedication, discipline, and consistent practice. You have brought pride and honor to our institution through your performance. May you continue to excel and achieve greater heights in sport. Wishing you many more victories in the future.

Anna University zonal 14 Handball tournament (men) our college & our department Students Won the (Third place), Venue- K.Ramkrishna Engineering College.

# STUDENTS ACHIVEMENT IN NPTEL



ABITHA



AALAKSYAZI



SACHIN



MONIKA



NIVETHA



AADHERA



ANUSHA



SARAVANAN



KAJITHIKA



ARJUNSELVAN



KIRTHANA



SANGAVI



GOPENATH



MOHAMMED  
RASHEDH



MOHAMMED  
DHAIR



SATHYA  
KALJIVARASAN



SANTHOSH  
KUMAR

## 2 YEAR ECE



MONICA M ||| year ECE



POOJA B ||| year ECE



POOJAMMA M ||| year ECE



PRASANTH P ||| year ECE



3 YEAR  
ECE



NISSANTH P ||| year ECE



NISSANTHI



NITHISH



SOPHIYA



SRIMATHI



TOGEMINARAN



SWETHA

## FINAL YEAR

# ALU MI NI

Representing their country or institution in international forums, sports, or diplomacy.

Chapters earn points for things like events held, donations raised, membership growth, community service, or professional networking



## MATHUMATHI M

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01

Senior Software  
Engineer  
COGNIZANT  
Chennai  
2017- 2021



## YASWITHA SWARNA

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02

M.S in Software  
Engineering  
Kennesaw State  
University  
United States  
2016-2020



## NISHANTH SAIRAM S

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---

03

Full Stack Developer  
ZOHO Corporation  
Chennai  
2018- 2022



## NARENDRA RAYA

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04

M.Sc Computer Science  
Birmingham City  
University  
London  
2018 - 2022



## NYJO JOSEPH

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05

M.Sc Electrical  
Engineering  
and Information  
Technology  
DEGGENDORF  
INSTITUTE  
OF TECHNOLOGY  
Germany  
2018 - 2022



2022

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This place gave me not only education but also values and confidence. The guidance of our teachers shaped who we are today. Every classroom here holds memories of learning and friendship. The discipline and support we received prepared us for real life. I am grateful to my college for believing in me. To the students, make use of every opportunity you get here. Never stop learning and never forget your roots.

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## FUTURE FORWARD RECRUITMENT



The welcome by the Principal is part of the ceremonial opening of the placement drive

The Placement Drive at was inaugurated with a warm welcome by our respected Principal. In his address, he expressed heartfelt gratitude to the visiting companies for their continued support in shaping the careers of our students. He emphasized the importance of industry-academia collaboration and highlighted the institution's commitment to nurturing talent with both technical expertise and ethical values.



The Principal emphasized that such events are not merely about securing jobs but about building long-term.



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 reflects the 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 share that 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 Electroshere, the vibrant pulse of electrical and electronics engineering echoes louder than ever. From the timeless reliability of the Arduino Uno – 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.

**DEPARTMENT OF  
ELECTRONICS AND COMMUNICATION  
ENGINEERING**

**STAFF EDITORIAL MEMBERS**



**DR.P.RAJESWARI  
(HEAD OF DEPARTMENT)**

Department Of  
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**Mr.C.SATHISHKUMAR  
( ASSISTANT PROFESSOR)**

Department Of  
Electronics And Communication  
Engineering

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**S.RAJAMOHAN/III SEM  
R.VIGNESH/III SEM  
D.SAFFIYULLA/III SEM**

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Electronics And Communication  
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