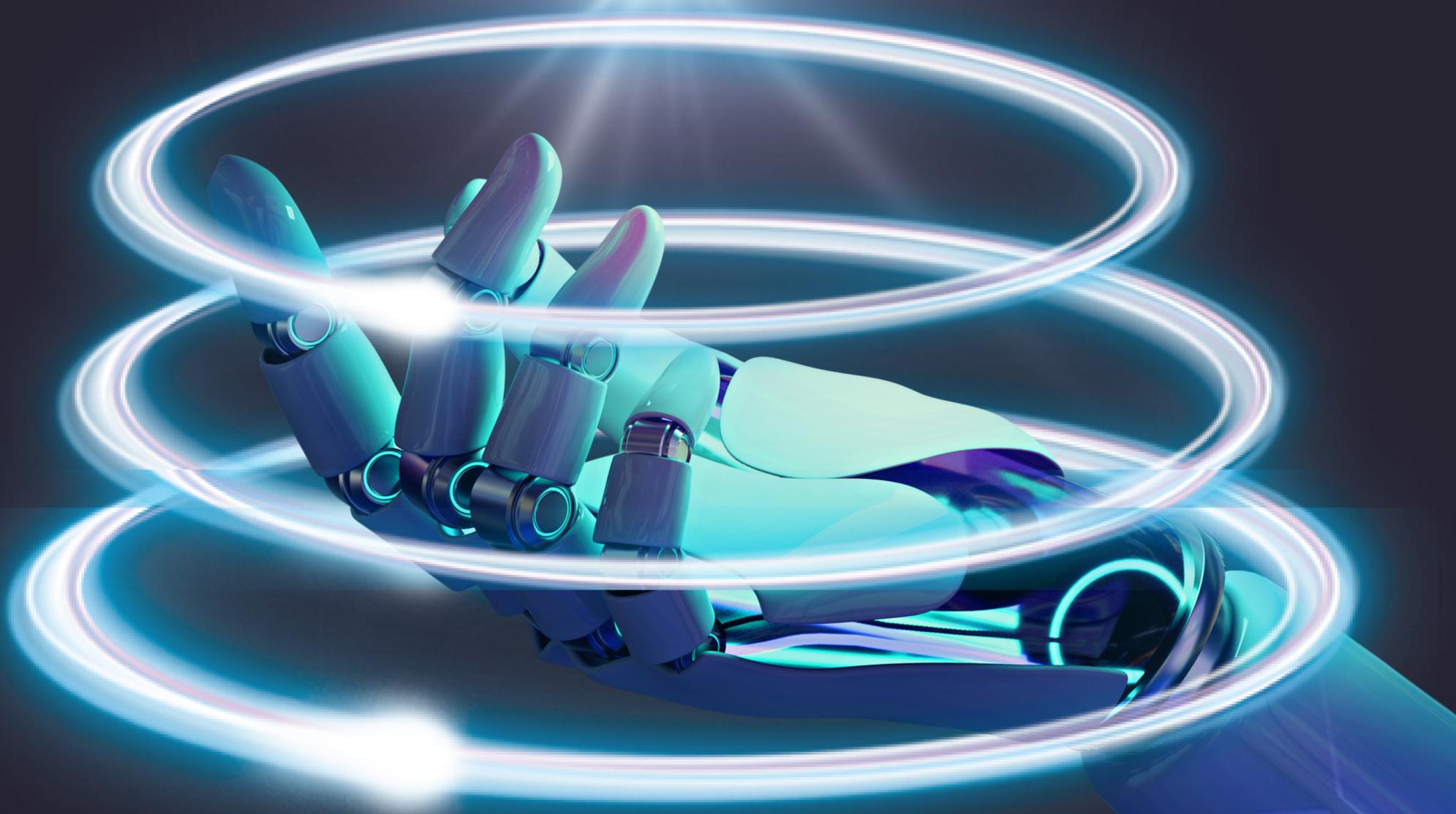


# CODE CHRONICLES

DEPARTMENT MAGAZINE

CSE

ACADEMIC YEAR : 2022-2023



"The science of today is the technology of tomorrow." – Edward Teller

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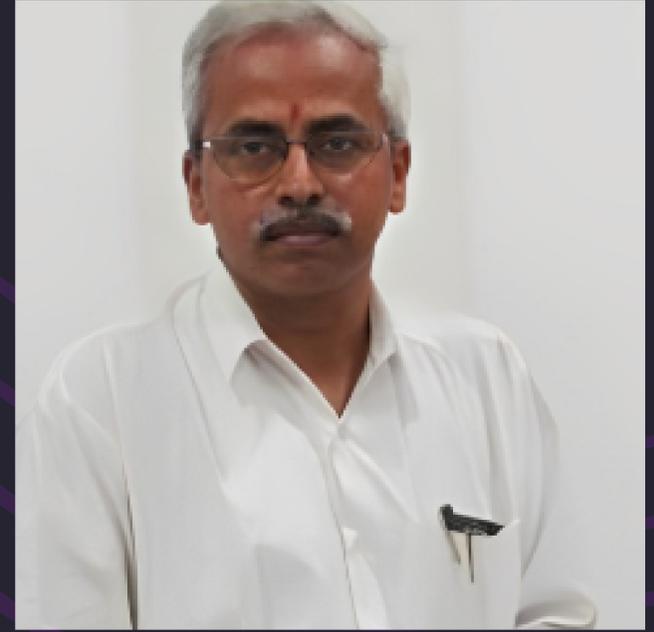
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# GUIDING LIGHTS OF EXCELLENCE



**Dr. K. Rajashekar Rao**

**DIRECTOR**

**Sunkara Ramabrahmam**

**CHAIRMAN**

**Dr. G.V.K.S.V. Prasad**

**PRINCIPAL**

At Usha Rama College of Engineering and Technology, our foundation of excellence is built upon the visionary leadership of our esteemed Chairman, Director, and Principal. Their guidance shapes the institution's journey toward academic brilliance, innovation, and holistic development.

**Chairman: Sri Sunkara Ramabrahmam**

A Visionary Leader Driving Progress

Sri Sunkara Ramabrahmam provides the strong foundation that fuels Usha Rama's growth. His visionary leadership ensures state-of-the-art infrastructure, industry collaborations, and an education system that blends theoretical excellence with practical exposure. Under his guidance, Usha Rama continues to empower students with cutting-edge knowledge and real-world skills.

**Director: Dr. K. Rajashekar Rao**

A Catalyst for Innovation and Research

Dr. K. Rajashekar Rao fosters an environment of research, creativity, and technological advancements. His emphasis on entrepreneurship, startup incubation, and interdisciplinary learning ensures that students think beyond textbooks, preparing them for industry challenges. His leadership strengthens Usha Rama's reputation as a center of innovation and academic excellence.

**Principal: Dr. G.V.K.S.V. Prasad**

A Mentor Shaping Future Leaders

Dr. G.V.K.S.V. Prasad is committed to academic excellence, student development, and industry-aligned education. He ensures students receive practical training, leadership skills, and ethical values, making them well-rounded professionals. His focus on placements, faculty development, and student-centric learning has elevated Usha Rama's academic standards.

A Legacy of Excellence

Together, Sri Sunkara Ramabrahmam, Dr. K. Rajashekar Rao, and Dr. G.V.K.S.V. Prasad form the backbone of Usha Rama, guiding students toward success. Their leadership ensures a progressive, innovation-driven, and student-focused learning environment, preparing graduates to thrive in the ever-evolving world of technology.

# EMPOWERING MINDS, SHAPING FUTURES



**Dr S M Roy Choudri**  
**HOD OF CSE**

As the Head of the Department of Computer Science and Engineering at Usha Rama College of Engineering and Technology, Dr. S.M. Roy Choudri is a visionary leader committed to fostering academic excellence and innovation. With years of experience in academia and research, he has been instrumental in shaping the department's success and creating a vibrant environment for learning and growth.

Dr. Choudri's dedication to integrating modern technological advancements into the curriculum has empowered students to stay ahead in the ever-evolving tech landscape. Under his guidance, the department has achieved significant milestones, including successful student projects, research publications, and collaborations with industry leaders. His passion for nurturing talent and promoting a research-oriented mindset

among students and faculty reflects his belief in the transformative power of education. Dr. Choudri's leadership continues to inspire the department to explore new horizons and embrace challenges with determination. We are privileged to have his guidance as we journey "Beyond the Algorithm" to redefine the future of technology and engineering excellence.

**Dr. K.P.N.V. Satya Sree** is a distinguished professor in the Department of Computer Science and Engineering at Usha Rama College of Engineering and Technology. With a profound passion for teaching and research, she has consistently contributed to academic excellence and the holistic development of students.

Dr. Satya Sree brings a wealth of expertise in her domain, having made significant contributions to research and innovation. Her dedication to fostering a student-centered learning environment has empowered numerous students to excel academically and professionally.

Renowned for her deep subject knowledge and effective teaching methodologies, Dr. Satya Sree has played a pivotal role in mentoring students and guiding them to achieve success in both academic and co-curricular pursuits. Her emphasis on integrating real-world applications with theoretical concepts ensures that students are industry-ready and equipped to tackle contemporary challenges in technology. Her commitment to excellence and unwavering focus on nurturing young minds make her an invaluable asset to the department. She continues to inspire both students and colleagues, driving the vision of the Computer Science and Engineering Department forward.



**Dr K P V N Satya Sree**  
**Professor**

# INSTITUTE VISION AND MISSION

## Institute Vision:

To emerge as a Centre of excellence in technical education by imparting quality teaching learning practices and research for the transformation of society.

## Institute Mission:

M1: Provide an ideal and the best class infrastructure to foster exploration in engineering and research

M2: Build dedicated faculty with student centric teaching, incorporating experiential, innovative skills.

M3: Encourage life-long learning, entrepreneurial thinking, and ethical responsibility in students to address societal challenges.

# DEPARTMENT VISION AND MISSION

## Department Vision:

To emerge as a skilled Technocrats on global scale in Computer Science and Engineering through quality education, innovation, collaborative researchers and entrepreneurs with moral values.

## Department Mission:

M1: To impart quality education to the students.

M2: To pursue creative research and new technologies in Computer Science and Engineering.

M3: To encourage entrepreneurship skills among students and inculcating moral and ethical values to serve for the society.

# Department Program Educational Objectives (PEOs)

PEO1: Our graduates will establish themselves as effective professionals in industry, academia and entrepreneurship.

PEO2: Our graduates will become profound researchers in multiple domains.

PEO3: Our graduates will act as leaders in society.

## Program Outcomes (POs)

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.

## Department Program Specific Outcomes (PSOs):

**PSO1:** Illustrating a comprehensive understanding of fundamental computer system principles encompassing both hardware and software components to cultivate strong conceptual skills in processing and assigning computation solutions.

**PSO2:** Demonstrate and design proficient and technical abilities in algorithms, networking, web design, cloud computing and data analytics enabling the development of innovative solutions to complex real-world problems while identifying and addressing emerging research gaps.

# CSE: MORE THAN A STREAM, IT'S A REVOLUTION

The Computer Science and Engineering (CSE) department at Usha Rama College of Engineering and Technology stands as a center of technological advancement, academic excellence, and innovative research. Committed to nurturing both creativity and technical acumen, the department offers a vibrant learning environment where theory is seamlessly blended with real-world application.

The comprehensive curriculum is aligned with current industry needs, encompassing areas such as programming, artificial intelligence, cybersecurity, cloud computing, data science, Internet of Things (IoT), blockchain, and full-stack development. Students are equipped with both core knowledge and practical skills to stay ahead in the rapidly evolving tech landscape.

Cutting-edge infrastructure—featuring modern computer labs, specialized AI and IoT facilities, and smart classrooms—enhances experiential learning. With access to virtual labs, cloud platforms, and high-performance computing clusters, students are empowered to undertake impactful research and complex projects.

The department actively fosters a culture of innovation and collaboration. Students regularly engage in hackathons, coding contests, and interdisciplinary research initiatives. Strong industry linkages and partnerships with IT companies, research bodies, and government agencies provide ample internship and project opportunities.

To enhance career readiness, the department offers focused training programs, certification courses, and job-oriented boot camps. Interaction with industry professionals and successful alumni offers students valuable exposure to emerging trends and career pathways. Robust placement support ensures that graduates secure positions in top MNCs, IT companies, and startups.

Outside the classroom, a thriving ecosystem of student-run clubs, technical festivals, and seminars encourages creativity and peer learning. The department also supports entrepreneurial aspirations through incubation centers, mentorship, and funding avenues. Embracing an interdisciplinary approach, the CSE department integrates concepts from electronics, business management, and applied sciences, preparing students for diverse career trajectories.

# 1. THREE DAY WORKSHOP ON DESIGN THINKING AND ANALYSIS

The workshop opened with an engaging introduction to the design thinking mindset—a way of solving problems that starts with people, not technology. Students were introduced to the five stages that guide this approach: Empathize, Define, Ideate, Prototype, and Test. Rather than presenting it as a rigid formula, the facilitators emphasized it as a flexible, iterative process used by innovators across industries. **Held from 28th to 30th September** and event was coordinated by **B.V.Praveen Kumar**.

To make the concept real, the session moved quickly into activities. Students paired up and conducted **short interviews** with each other to understand everyday frustrations—both academic and personal. These conversations were used to build empathy maps, where participants documented what users say, think, feel, and do. This helped students realize how often solutions fail simply because the real problem was never understood.

Real-world case studies were discussed to show how organizations apply design thinking to solve complex challenges. Through these examples, students saw how empathy-driven insights can lead to practical, impactful innovations. By the end of the **first day**, participants were no longer thinking in terms of “**what can we build?**” but instead “**what does the user actually need?**”



**The second day focused on turning understanding into action.** Students were divided into teams and given relatable problem statements. Using **brainstorming techniques**, teams generated a large pool of ideas without immediate judgment. This open flow of thinking encouraged creativity and reduced hesitation in sharing thoughts.

Next came **affinity mapping**, where similar ideas were grouped to identify patterns and promising directions. This exercise showed students how structured analysis can bring clarity to creative chaos.

The highlight of the day was **paper prototyping**. Teams translated their best ideas into simple sketches and models using basic materials. These prototypes were then shared with other groups for feedback. Students experienced firsthand how early feedback can refine ideas and uncover hidden flaws before investing too much effort.

**Collaboration** played a key role throughout the day. Participants learned to **listen, adapt, and improve collectively** rather than working in isolation.

**The final day centred on testing and iteration.** Teams conducted usability tests by observing how others interacted with their prototypes. Instead of explaining how things should work, students watched how users naturally behaved. **This revealed gaps between intention and usability.**

Using this feedback, teams refined their designs. Some made small changes; others reworked their concepts entirely. This iterative process helped students understand that **improvement comes from testing and learning**, not from getting it **perfect the first time.**

In the concluding session, each **team presented their journey**—how they understood the problem, how their ideas evolved, and what they learned through testing. This reflection reinforced the idea that design thinking is about the **process of discovery and refinement.**

The workshop ended with an interactive reflection where **students shared how their approach to problem-solving had changed.** Certificates were distributed, and the event concluded on a note of **enthusiasm and inspiration.**

## **Overall Learning and Impact**

Over three days, students gained practical exposure to tools such as **empathy maps, brainstorming techniques, affinity diagrams, and rapid prototyping.** More importantly, they developed a **user-centric mindset, stronger analytical abilities, and improved teamwork skills.**

The workshop successfully connected theoretical learning with **real-world application**, encouraging students to think **critically, creatively, and collaboratively.**

It left participants with a deeper understanding of how thoughtful design can create meaningful solutions in technology and beyond.



Emphasis was placed on divergent thinking to encourage a wide range of ideas and on convergent thinking to evaluate and refine those ideas into viable concepts. The session encouraged **collaborative innovation**, helping students tackle **problems with structured creativity**.

The spotlight was on rapid **prototyping and solution testing**. Students learned the importance of building quick, low-cost prototypes to visualise and communicate their ideas. They engaged in **hands-on activities to create mock-ups using paper, digital tools, and everyday materials**. Teams then tested their solutions, gathered feedback, and iterated on their designs. The day concluded with **group presentations and discussions**, allowing students to reflect on their learning journey.

Key Takeaways

- **Human-Centred Approach:** Students developed empathy-driven problem-solving skills by focusing on real user needs.
- **Analytical and Creative Thinking:** The workshop emphasized a balance of structured analysis and out-of-the-box creativity.
- **Team Collaboration:** Group-based tasks nurtured effective communication, teamwork, and peer learning.
- **Practical Exposure:** Through prototyping and testing, students gained firsthand experience in the iterative design process.

The workshop proved to be a stepping stone for students aspiring to become **innovative thinkers and problem solvers** in their engineering careers. By embracing the design thinking mindset, participants are now better equipped to tackle complex challenges with **confidence and creativity**.

## 2. REVERSE CODING CHALLENGE

The Reverse Coding Challenge conducted on **13 October 2022** by **M. Samba Siva Rao** a refreshing departure from routine programming contests. Instead of handing participants a **clearly written problem statement**, the event presented them with **outputs and a handful of input-output examples**. **The mission:** figure out the hidden logic and write code that reproduces the same behaviour

This twist transformed the contest from a **straightforward coding** exercise into a test of **pattern recognition, analytical reasoning, and algorithmic intuition**. Participants quickly realized that success depended less on syntax speed and more on how well they could **observe, hypothesize, test, and refine their understanding of the underlying rule**.



### Challenge Structure and Flow

The competition was organized in **multiple rounds**, each designed to increase **cognitive load and complexity**.

#### Round 1 – Pattern Discovery (Warm-up):

Participants received **simple numeric and string-based input-output pairs**. At first glance, the patterns appeared obvious, but subtle variations forced students to question initial assumptions. This round encouraged **careful observation and discouraged overconfidence**.

#### Round 2 – Algorithmic Inference:

Here, the problems involved **deeper logic—transformations resembling sorting rules, conditional mappings, or hidden iterative steps**. Students had to **simulate possibilities on paper before attempting code**. Many teams learned that jumping straight into coding without a hypothesis led to wasted time.



### Round 3 – Hidden Complexity (Final Round):

The last set introduced **layered logic**, in which multiple rules operated together. Participants had to reverse-engineer not one rule, but a sequence of operations. Time pressure added intensity, pushing teams to divide roles—some focused on **deduction**, others on **implementation**.

### Skills the Challenge Brought Out

Unlike traditional contests where the path is visible, this event required participants to find the path first.

- Careful analysis of examples before writing a single line of code
- Logical elimination of incorrect assumptions
- Translating observations into algorithmic steps
- Debugging through reasoning rather than trial-and-error alone
- Clear communication within teams to test hypotheses quickly

Students experienced firsthand how real-world debugging often works: you see outcomes and must trace back to the cause.



## Participant Experience:

The room atmosphere was intense but energetic. Some teams sketched possibilities on paper, others debated patterns aloud, and many repeatedly revised their logic after spotting exceptions in the examples. Moments of realization—when a hidden rule finally “clicked”—were met with visible excitement.

A key learning was patience. Participants discovered that rushing into coding without fully understanding the pattern led to repeated failures. Those who slowed down to analyse carefully often progressed faster overall.

Faculty observers noted how deeply engaged students were throughout the event. The challenge naturally promoted **collaboration, strategic thinking, and disciplined problem-solving**.

### Learning Outcomes

By the end of the competition, students had strengthened:

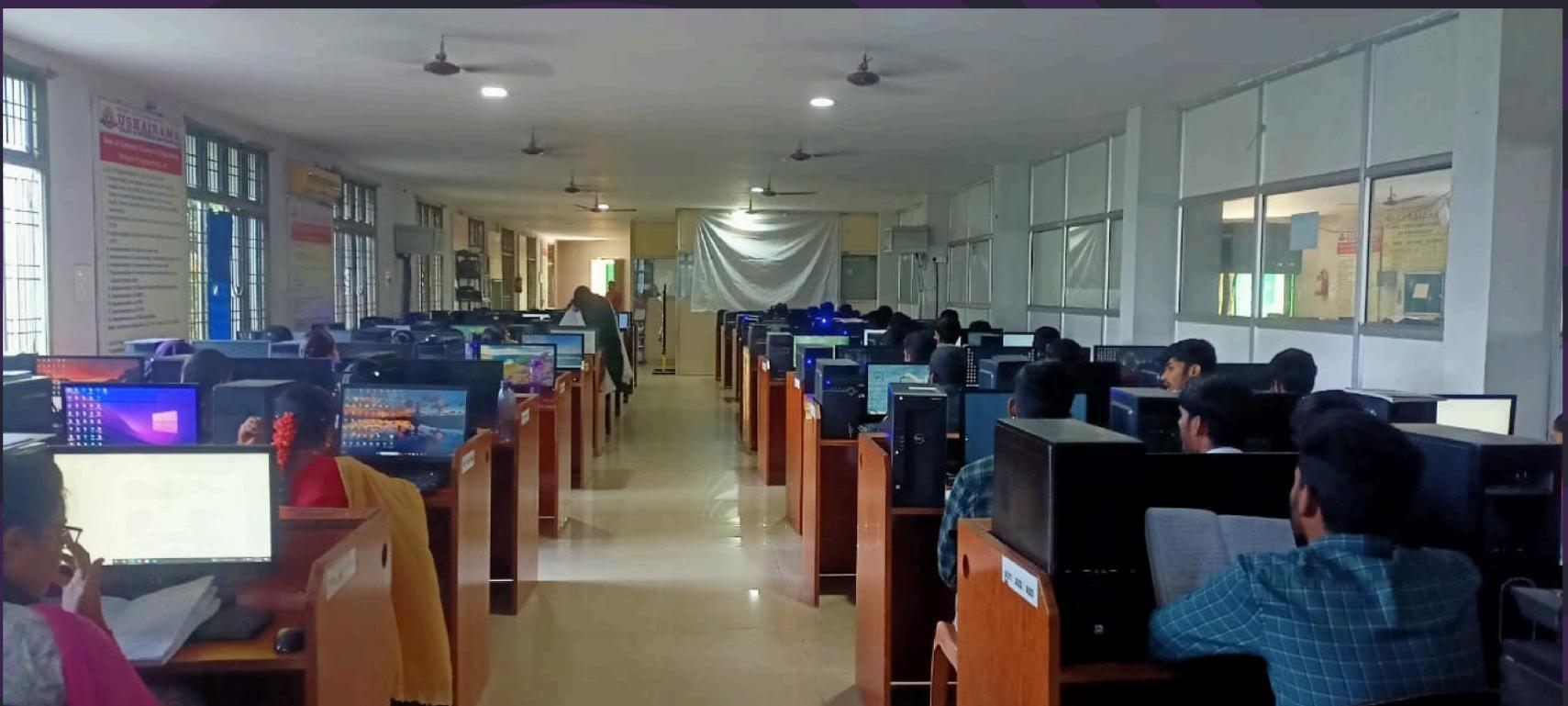
- Logical reasoning and pattern recognition
- Algorithmic thinking without explicit guidance
- Debugging and hypothesis-testing skills
- Time management under pressure
- Team coordination and idea validation

More importantly, they learned to become comfortable with **ambiguity**—a skill highly valuable in software development and research.

## Conclusion :

The Reverse Coding Challenge proved to be more than just a coding contest; it was a mental workout that sharpened analytical instincts and deepened participants’ understanding of how algorithms behave. By reversing the traditional approach to problem-solving, the event pushed students to think differently, observe more carefully, and reason more clearly.

Such innovative competitions play a vital role in preparing students for real-world technical challenges, where problems are rarely presented in a neat, well-defined format. The event concluded with enthusiastic feedback from participants and a renewed interest in exploring problem-solving from unconventional angles.



# 3. BUG HUNT

The Department of Computer Science and Engineering (CSE) at Usha Rama College of Engineering and Technology is proud to present the **Bug Hunt**, an exciting and hands-on event aimed at enhancing practical **cybersecurity skills** among students and tech enthusiasts on **26 October 2022, by S.Gogula Priya**

## About the Event:

In today's digital age, **vulnerabilities in systems, websites, and applications pose serious security threats**. The Bug Hunt is designed to simulate real-world scenarios where participants must **identify and analyse** potential **security flaws**. This interactive event encourages **critical thinking, ethical hacking skills, and security awareness**, fostering a proactive approach to cybersecurity.

## Event Format:

The Bug Hunt will be structured into **four escalating rounds**, each focusing on different layers of cybersecurity. Participants will explore systems, applications, and simulated environments to uncover security flaws, report vulnerabilities, and suggest possible mitigations. The complexity will increase with each round, testing both technical expertise and problem-solving ability

### Round 1: Basic Vulnerability Identification (Easy Level)

- Identifying weak passwords and login flaws
- Spotting insecure form fields and basic misconfigurations
- Recognising phishing elements and basic email spoofing



### Round 2: Web and Network Vulnerabilities (Moderate Level)

- Exploiting common web vulnerabilities (e.g., XSS, SQL injection)
- Analysing insecure cookies and session management
- Detecting open ports and misconfigured firewalls

### Round 3: Cryptographic & OS Exploits (Advanced Level)

- Identifying weak encryption schemes and insecure data storage
- Testing OS-level privilege escalation vulnerabilities
- Exploiting misconfigured services in Linux and Windows environments



## Round 4: Live Threat Simulation & Incident Response (Expert Level)

- Detecting advanced threats like malware or ransomware behavior
- Conducting mini penetration tests on test servers
- Investigating logs and tracing digital footprints
- Drafting a basic incident response report and mitigation plan

### Skills Developed During the Bug Hunt

This event pushed students to think like **defenders** by briefly thinking like **attackers**.

- Systematic vulnerability assessment
- Ethical hacking mindset and responsible reporting
- Use of security tools for inspection and testing
- Clear documentation of findings and suggested mitigations
- Analytical thinking under time constraints

Students discovered that cybersecurity is a discipline of **patience, precision, and continuous verification**.

### Participant Experience and Takeaways:

The lab environment was intense and immersive. Teams carefully examined clues, debated findings, and validated each other's observations before reporting vulnerabilities. Many were surprised at how small oversights—like **default credentials or missing input validation**—could compromise entire systems.

By the end of the event, participants had a stronger appreciation for:

- Secure coding practices
- The importance of configuration management
- Real-world attack vectors and prevention strategies
- Responsible disclosure and ethical standards

#### ◆ **Event Goals:**

In an era where cyber threats are constantly evolving, understanding how to identify and report bugs is essential for maintaining digital safety. The Bug Hunt is more than a competition—**it's a real-world simulation that builds a security-first mindset.**

Participants will not only strengthen their technical skills but also develop a deeper appreciation for **ethical hacking, vulnerability disclosure, and digital responsibility.**

#### **Conclusion:**

By the time the Bug Hunt concluded, participants had moved beyond surface-level knowledge of **“what a vulnerability is.”** They developed a working understanding of how vulnerabilities appear, why they are dangerous, and how they can be prevented at the source.

They began to see software not just as features and interfaces, but as systems that must be built with security in mind from the very first line of code.

Secure coding practices were no longer abstract guidelines. Students saw how missing input validation, hard-coded credentials, or poor session handling could be exploited within minutes. This practical exposure helped them understand why writing secure code is a responsibility, not an option.

They also understood configuration management—how default settings, open ports, unnecessary services, or improper permissions can silently weaken an otherwise strong system. Many realised that security failures often occur not because of complex attacks, but because of overlooked basics.

Through simulated attacks, participants became familiar with real-world attack vectors, including injection flaws, cross-site scripting, privilege escalation, and phishing. More importantly, they learned the **preventive side**: sanitising inputs, enforcing proper authentication, restricting permissions, encrypting sensitive data, and regularly auditing systems.

# 4. Exploring the Future with IOT

The Department of Computer Science and Engineering at Usha Rama College of Engineering and Technology conducted a three-day, practice-heavy workshop titled “Exploring the Future of IoT” from **14 to 16 November 2022 by P. Bhagya Sri**. The goal was simple: move students from hearing about IoT to building with IoT. **The sessions blended core concepts, live circuit building, device programming, and cloud integration** so participants could see how connected systems work end-to-end. Rather than limiting the workshop to theory, mentors ensured that every concept quickly translated into a hands-on task. Students wired **sensors, flashed microcontrollers, pushed data to the cloud, and visualized live dashboards—experiencing** the full IoT pipeline in action.

## ◆ Day 1 – Introduction to IoT & Smart Systems

The first day laid the foundation. Experts introduced IoT as a combination of **sensors** (data collection), **microcontrollers** (processing), **networks** (communication), and **cloud** (storage and intelligence).

### Concepts covered:

- Evolution, scope, and real-world relevance of IoT
- Components: sensors, actuators, microcontrollers, connectivity, cloud
- IoT architectures and communication models (device-to-cloud, device-to-device)
- Smart systems in homes, cities, healthcare, and agriculture

### Hands-on work:

- Building basic circuits using temperature, motion, and light sensors
- Interfacing sensors with Arduino Uno and NodeMCU ESP8266
- Observing live sensor readings via serial monitor

Students saw how raw environmental data can be captured and interpreted in real time.



## ◆ Day 2 – IoT Programming & Cloud Integration

The second day focused on programming for IoT devices and integrating them with cloud platforms for data management and remote access.

### Topics covered:

- Programming microcontrollers using Arduino IDE and MicroPython
- Collecting and sending sensor data to the cloud
- Introduction to platforms like ThingSpeak, Blynk, and Firebase
- Real-time data visualization and dashboard creation

Students developed simple IoT applications such as **temperature monitoring, motion detection, and real-time alerts using cloud-based triggers.**

### Platforms introduced:

- ThingSpeak for data graphs
- Blynk for remote control
- Firebase for live data sync

### Mini builds:

- Temperature monitoring with live graphs
- Motion detection with instant mobile alerts
- Light sensor automation using cloud triggers

Students experienced how devices can be monitored and controlled from anywhere.

### ◆ Day 3 – Future Trends, Security & Project Development

The final day was dedicated to exploring advanced **IoT applications, industry trends, and cybersecurity in IoT systems.** Students were also guided in developing **mini-projects.**

### Topics covered:

- Emerging trends: AI + IoT (AIoT), Industrial IoT, and Edge Computing
- IoT security challenges and best practices

### Students formed groups to build and present mini-projects such as:

- Smart irrigation using soil-moisture sensors and automated pumps
- Home automation with relay modules and mobile control
- Health monitoring with live dashboards

Mentors reviewed each project, offering feedback on **design, scalability, and security.**

### By the end of three days, participants could confidently:

- Wire sensors and interface them with microcontrollers
- Program devices and connect them to Wi-Fi networks
- Push data to the cloud and build live dashboards
- Design small but complete IoT solutions from scratch
- Understand security and privacy concerns in connected systems



- Ethical and privacy considerations in connected systems
- Group project development and presentations
- Students showcased their innovative IoT mini-projects, such as **smart irrigation systems, home automation models, and health monitoring devices**, receiving constructive feedback from mentors.

## Conclusion

This workshop acted as a launchpad for students curious about IoT. It replaced passive learning with active building and showed how connected devices power **smart homes, smart farms, smart healthcare, and smart cities**.

Participants left with **practical confidence, project ideas, and clarity on career paths and certifications** in IoT. The Department of CSE reaffirmed its commitment to such experiential programs that prepare students **not just to learn technology—but to build with it**.



# 5. Unleashing the Power of Data for Insight

The CSE Department at Usha Rama College of Engineering and Technology ran a focused, hands-on workshop titled “Unleashing the Power of Data for Insight.” From **21 to 23 December 2022, by Dr Asha Latha Bandi**. The aim was practical clarity: to help students understand how raw data becomes **decisions through cleaning, analysis, and visualisation**. Across three days, participants worked with real datasets, learned essential tools, and practised converting messy information into meaningful insights—**mirroring how data teams operate in industry**.

## ◆ Day 1 — Introduction to Data and Its Importance:

The first day **established the foundation**: what data is, why it matters, and how it flows through a lifecycle before becoming insight.

### Key ideas covered:

- Types of data: structured, semi-structured, unstructured
- Data lifecycle: collection → storage → processing → analysis → interpretation
- Where data drives impact: healthcare, finance, marketing, logistics
- Working with CSV and JSON formats

### Tools introduced:

- Microsoft Excel for quick inspection and sorting
- Python with NumPy and Pandas for cleaning and structuring datasets

### Hands-on session:

Students cleaned inconsistent data (missing values, duplicates, wrong formats) and reshaped it into analysis-ready tables. The takeaway was immediate: most real work in data starts before analysis—with cleaning.



## ◆ Day 2 — Data Analysis and Visualisation Techniques

The second day focused on **Exploratory Data Analysis (EDA) and communicating insights visually.**

### Concepts practised:

- Summarising datasets using basic statistics
- Finding trends, correlations, and anomalies
- Turning numbers into visual stories

### Visualization tools:

- Matplotlib and Seaborn for coded plots
- Microsoft Power BI and Tableau for dashboards

### Hands-on work:

Teams analyzed sample datasets and built dashboards in Power BI that highlighted key metrics and trends. This simulated a real analytics workflow where insights must be presented clearly to non-technical stakeholders.



## Day 3 — Applications, Insights, and Future Trends

The final day connected skills to real-world applications and future opportunities.

### Focus areas:

- How organizations use data for prediction and decision-making
- Introduction to basic machine learning workflow (data → model → prediction)
- Industry use cases across domains
- Career paths, certifications, and project ideas in data science

Students presented their dashboards and explained the insights they derived—practicing not just analysis, but data storytelling.

What Students Walked Away With

### **By the end of the workshop, participants had:**

- A clear understanding of the **data lifecycle**
- Practical experience in **cleaning and analyzing** datasets
- Confidence using **Python libraries and dashboard tools**
- The ability to present insights **visually and logically**
- Awareness of **career paths** in data analytics and data science

Most importantly, they learned to ask better questions of data—a **skill more valuable than any single tool**.

### **Conclusion:**

The workshop did more than introduce tools—it changed how students approach problems. Participants stopped seeing data as rows and columns and started seeing it as **evidence for decisions**. They experienced the full journey: messy inputs, careful cleaning, structured analysis, and clear communication of insights. This end-to-end exposure mirrors how data actually happens in industry.

### **Two shifts were especially visible:**

- From guessing to validating.
- Students learned to test assumptions with data instead of relying on intuition.
- Example 1: Rather than assuming which product category sells more, they grouped and summarized sales data to prove it.
- Example 2: Instead of guessing why attendance dipped, they plotted trends over time and spotted a pattern linked to specific days.
- From numbers to narratives.
- They learned that analysis is incomplete unless insights are communicated visually and logically.
- Example 1: A raw table of survey responses became a dashboard highlighting top pain points.
- Example 2: A list of monthly figures turned into a trend chart that immediately revealed seasonality.

By the end, students were comfortable with the reality that most effort in data work lies in cleaning, organizing, and questioning the dataset before any advanced analysis begins. They also understood how dashboards and visualizations act as bridges between technical analysis and real-world decision-making.

The workshop reinforced a **critical mindset: tools will change**, but the ability to think analytically, question data quality, extract patterns, and present insights will always remain valuable.

For many participants, this event was the first time they handled data the way analysts and data scientists do in professional environments. It built confidence to take up data-driven projects, pursue internships in analytics, and explore career paths in data science with clarity rather than curiosity alone.

Ultimately, the workshop succeeded in its purpose—helping students move from learning about data to working with data, and from observing information to deriving insight.

# 6.5G AND ITS APPLICATION WORKSHOP



Usha Rama College of Engineering and Technology hosted a focused workshop on 5G and its Applications at the R Block Seminar Hall From **6 to 8 February 2023**, by **Ch.Phani Kumar** The event introduced students to the fundamentals of **fifth-generation mobile networks and, more importantly**, to the real transformations 5G enables across industries.

Rather than limiting the discussion to speed comparisons with previous generations, the sessions unpacked how 5G changes system **design—lower latency, higher device density, and reliable high throughput** that unlock new categories of applications in **cities, factories, hospitals, classrooms, and homes**.

## **Day 1 — Foundations of 5G: What Changes and Why It Matters**

The opening day built conceptual clarity. Experts explained how 5G is not just faster 4G, but a redesign of network architecture.

### **Core ideas explored:**

- Ultra-low latency and why milliseconds matter for real-time control
- Massive device connectivity for dense IoT environments
- Higher bandwidth for data-heavy applications like AR/VR and 4K streaming
- Technologies such as Massive MIMO, beamforming, and small cells
- The concept of network slicing—running multiple virtual networks for different needs on the same infrastructure

### **Students learned that 5G enables three broad capability groups:**

1. Enhanced mobile broadband (speed and capacity)
2. Ultra-reliable low-latency communication (real-time response)
3. Massive machine-type communication (IoT at scale)

These capabilities set the stage for everything discussed in the next two days.

## Day 2 — 5G in Action Across Industries



The second day translated **theory into industry use cases**, showing where 5G becomes a necessity rather than a luxury.

### Smart Cities

Real-time traffic monitoring, **smart lighting, waste management sensors, and surveillance systems** rely on thousands of devices sending continuous data. 5G's device density and reliability make such ecosystems feasible.

- **Autonomous Vehicles**

Self-driving systems require instant communication between **vehicles, sensors, and road infrastructure**. Even small delays can be dangerous—this is where ultra-low latency becomes critical.

- **Healthcare and Telemedicine**

Remote diagnostics, live transmission of medical imaging, and even robotic surgery require uninterrupted, high-speed, low-latency connections.

- **AR/VR and Immersive Learning**

Augmented and virtual reality demand high bandwidth and minimal lag to create realistic experiences for **training, education, and entertainment**.

Students began to see how 5G acts as an enabler for technologies that previously struggled with network limitations.

### Conclusion:

The 5G workshop provided clarity on one of the most talked-about technologies of the decade. It connected network theory to real-world transformation and showed students where opportunities lie in the coming years.

Participants walked away with a broader perspective on how communication infrastructure shapes innovation across domains. The sessions **sparked curiosity about building, securing, and optimizing** the next generation of connected systems.

Through events like this, the institution continues to prepare students not just to learn about emerging technologies, but to understand how those technologies will define the future of **engineering, communication, and intelligent systems**.

# 7. Peer–Lead Sessions

On **1 March 2023**, the CSE Department at Usha Rama College of Engineering and Technology formalized a simple but powerful idea: a dedicated **Seminar Period in the timetable** where students regularly present to their peers. The goal was not marks, not attendance, but growth—specifically in **communication, clarity of thought, and confidence under an audience’s gaze**.

This initiative recognizes a reality many students face: strong technical knowledge often fails to make an impact if it cannot be explained clearly. The Seminar Period was introduced to close that gap by giving students a safe, structured space to speak, present, receive feedback, and improve—week after week. The initiative is coordinated by **Ms Tulimilli Naga Mounika**

## Why a Seminar Period Matters:

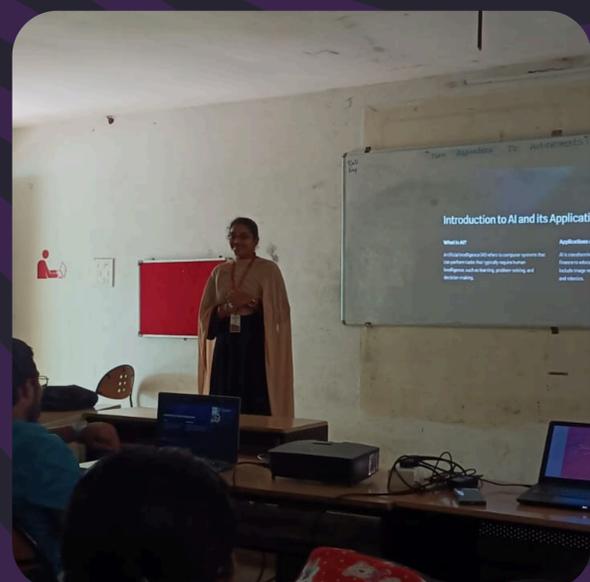
Technical education typically emphasizes coding, theory, and exams. But in professional life, students must:

- Explain ideas to teammates
- Present solutions to clients
- Defend decisions in meetings
- Communicate findings to non-technical audiences

The Seminar Period directly targets these **real-world needs**. By presenting regularly, students practice:

- Organizing thoughts logically
- Designing effective slides and visual aids
- Speaking clearly and confidently
- Managing time and audience attention

Over time, repeated exposure reduces **stage fear** and replaces **hesitation with composure**.



## How the Sessions Are Conducted:

Each session follows a simple structure:

1. Topic Selection
2. Students choose topics ranging from core subjects to emerging technologies—**AI, cybersecurity, cloud computing, IoT, data science, and more**. Faculty mentors guide them in narrowing broad ideas into focused presentations.
3. Preparation with Guidance
4. Students prepare slides using **PowerPoint or similar tools**. Faculty help refine structure: introduction, core content, examples, and conclusion.

## 5. Presentation Delivery

The presenter speaks before classmates, using visuals to support explanations.

## 6. Peer and Faculty Feedback

After each talk, peers share observations and suggestions. Faculty provide practical feedback on **content flow, body language, and communication style**.

This cycle repeats across sessions, creating steady improvement rather than **one-time performance**.

### **Skills Students Develop (Beyond Speaking):**

While public speaking is the visible goal, the Seminar Period strengthens multiple hidden skills:

- **Research ability** – students must understand topics deeply before presenting
- **Critical thinking** – they anticipate questions and clarify doubts
- **Content structuring** – learning how to break complex ideas into simple parts
- **Visual communication** – designing slides that support, not distract
- **Time management** – delivering meaningful content within limits

Confidence here is not **motivational**—it is trained through **repetition**.

A Collaborative Learning Environment

The Seminar Period also reshapes classroom dynamics. Instead of one-way teaching, sessions become interactive:

- Peers ask questions and share viewpoints
- Presenters learn to think on their feet
- Discussions extend beyond the syllabus into current tech trends

This creates a culture where **students learn from each other, not only from faculty**.

### **Alignment with the Department's Vision:**

The CSE Department's vision extends beyond academic scores. It aims to produce graduates who are:

- Technically competent
- Clear communicators
- Confident presenters
- Thoughtful problem-solvers

### **Conclusion:**

The introduction of the Seminar Period is a practical, forward-thinking step that addresses a critical but often neglected aspect of engineering education—communication. By providing a structured platform for students to present, reflect, and improve, the department ensures that learners grow not only as technologists but also as confident speakers and thinkers.

This initiative nurtures clarity, confidence, and collaboration—qualities essential for future leaders and innovators in computer science. Through consistent practice and mentorship, the Seminar Period is shaping students who can not only build solutions but also articulate them with impact.

# 8. Fastest Fingers



On **12 April 2023**, Usha Rama College of Engineering and Technology hosted “Fastest Fingers,” a high-energy quiz event built around one core ability: think fast, answer faster. Unlike traditional quizzes where time is generous, this competition rewarded the student who could process a question, decide confidently, and respond within seconds. The event was coordinated by **B. Sowmya**

The event blended **knowledge, reflexes, and composure** under pressure—turning a quiz into a test of mental agility and decision speed.

**What Makes “Fastest Fingers” Different**

Most academic contests test how much you know. This one tested how quickly you can use what you know.

**Participants faced:**

- Rapid-fire questions projected on screen
- Buzzer-based answering where timing mattered as much as accuracy
- Strict time windows that forced instant thinking

The format ensured that hesitation cost points. Students had to trust their preparation and react decisively.

**Structure of the Competition**

The event was conducted in multiple rounds, each increasing in intensity.

**Round 1 — Quick Recall**

Straightforward questions from computer science **fundamentals, general aptitude, and current technology trends**. The goal was to warm up reflexes and set the pace.

**Round 2 — Application Thinking**

Questions required short reasoning—small logic **steps, code snippets, or scenario-based thinking**. Speed still mattered, but clarity of thought became crucial.

### Round 3 — Pressure Round

The final round raised the stakes with tighter time limits and trickier questions. Participants had to remain calm while the clock ticked loudly in the background. This progression tested not only knowledge but focus and stress management.

#### Skills the Event Brought Out

“Fastest Fingers” sharpened abilities that are rarely trained in classrooms:

- Instant recall of concepts
- Rapid decision-making without overthinking
- Maintaining accuracy under time pressure
- Staying composed in a competitive environment
- Observing questions carefully to avoid traps

Students realized that quick thinking is a skill that improves with practice and exposure to timed challenges.

#### The Energy in the Room

The atmosphere was electric. Every question triggered a race to the buzzer. **Peers cheered, the scoreboard updated live, and the ticking timer added intensity.** Moments where two participants pressed almost simultaneously created suspense and excitement.

The event turned learning into a live, competitive experience that students thoroughly enjoyed

Students left with the realization that knowledge becomes more powerful when paired with speed and clarity.

#### Conclusion

“Fastest Fingers” was more than a quiz—it was a celebration of mental agility. By **combining speed, accuracy, and competition**, the event provided students a platform to test their reflexes, sharpen their thinking, and enjoy learning in a dynamic way.

Such initiatives reinforce that education is not only about learning concepts but also about applying them swiftly and confidently when it matters most.



# 9. Hackthon



On **10 May 2023**, by **DR K P N V Staya Sree** Usha Rama College of Engineering and Technology hosted a full-throttle Hackathon that brought students together to **design, build, and present working solutions to real problems**—within a tight deadline. The event wasn't about slides or theory. It was about shipping something that works.

Teams formed, ideas flew onto whiteboards, laptops opened, and the room turned into a live build zone where collaboration, speed, and clarity of thinking decided progress.

## **What the Hackathon Focused On:**

Participants were encouraged to solve problems across domains such as:

- Artificial Intelligence and automation
- Cybersecurity and safe systems
- Web and mobile applications for daily use

The brief was simple: identify a problem, design a solution, and build a functional prototype before time ran out.

## **How the Event Unfolded:**

- **Team Formation and Ideation:**

Students formed small teams and brainstormed ideas. Mentors helped them refine broad ideas into achievable scopes suitable for the time limit.

- **Design and Development Sprint:**

Once ideas were locked, teams split responsibilities—frontend, backend, logic, testing. Whiteboards filled with architecture sketches while code began to take shape.

## **Mentor Checkpoints**

Industry experts and faculty moved between teams, asking tough questions:

- Who is the user?
- What problem are you actually solving?
- Can this be demonstrated clearly?

This prevented teams from overbuilding and losing focus.

At the end, each team presented a live demo to judges, explaining their problem statement, approach, and working prototype.

## Skills Students Strengthened:

The Hackathon environment forced students to practice what classrooms rarely simulate:

- Rapid problem breakdown
- Clear task distribution within a team
- Building minimum viable solutions under time pressure
- Debugging quickly when things fail
- Presenting technical work in a simple, understandable way

Students learned that perfection is not the goal—working solutions are.

## The Role of Mentors and Judges:

Mentors acted as **guides, not fixers**. They nudged teams in the right direction, challenged assumptions, and encouraged practical thinking. Judges evaluated projects based on:

- Problem relevance
- Creativity of the solution
- Technical implementation
- Clarity of presentation

Constructive feedback after demos helped students understand how to improve both **product and pitch**.

Energy, Collaboration, and Innovation

The room buzzed with intensity. Some teams debated logic, others hunted bugs, while a few refined their UI for the final demo. Despite the competition, teams helped each other with **tools, libraries, and ideas—showcasing** a supportive tech community spirit.

## Conclusion:

The Hackathon proved to be a powerful learning experience where students moved from ideas to implementation within hours. It encouraged innovation, teamwork, and decisive execution—qualities essential in the tech industry.

By the end of the event, participants didn't just leave with certificates. They left with **prototypes, practical experience, and the confidence** that they can build real solutions when challenged.



# THE METAVERSE

## The Year of Emergence

The year 2022 marked a significant milestone in the evolution of the digital world. The concept of the metaverse—a shared, immersive, and persistent virtual universe where users interact with each other and digital environments—began to move from sci-fi fantasies into tangible reality. Virtual worlds were no longer just the domain of video games or niche online spaces; in 2022, the metaverse emerged as a cultural and technological force that reshaped how we work, play, socialize, and create. This article delves into the rise of the metaverse in 2022 and how it laid the foundation for future virtual experiences that promise to redefine the internet as we know it.

### The Metaverse: A Glimpse into the Future of the Internet

The term "metaverse" was popularized in Neal Stephenson's 1992 novel *Snow Crash*, where it described a virtual reality-based internet. However, the metaverse's emergence in 2022 marked a major shift in its potential, bringing us closer to realizing this futuristic vision. The metaverse is not a single platform or application, but rather a collective term for interconnected virtual worlds, platforms, and experiences that people can access through virtual reality (VR), augmented reality (AR), and other immersive technologies.

In 2022, major tech giants—such as Meta (formerly Facebook), Microsoft, and Google—accelerated their investments into creating and enhancing the metaverse. For example, Meta's rebranding was a clear signal of its commitment to the metaverse, with CEO Mark Zuckerberg announcing plans to build a digital universe where people could connect, create, and interact in ways that transcend traditional internet experiences. Similarly, Microsoft's venture into the metaverse with its Mesh platform, aimed at revolutionizing remote work with holographic meetings, showcased the increasing influence of virtual environments in business.

### Virtual Real Estate and Digital Economies

One of the most fascinating aspects of the metaverse's rise in 2022 was the explosion of virtual real estate. Digital land in virtual worlds like Decentraland, The Sandbox, and Cryptovoxels became valuable assets, bought and sold for significant sums of money. These virtual worlds allow users to build, own, and monetize their digital properties. Whether it's hosting concerts, creating virtual stores, or establishing galleries, virtual real estate in the metaverse presents new opportunities for creators, entrepreneurs, and investors alike.

In 2022, the virtual economy began to flourish as digital currencies and Non-Fungible Tokens (NFTs) played pivotal roles in these online economies. NFTs, which are unique blockchain-based digital assets, became the foundation for selling virtual goods, artwork, and even land in the metaverse. Artists and developers started to monetize their creations through NFT marketplaces, and virtual goods such as avatars, clothing, and accessories saw rising demand. The real-world monetary value tied to virtual assets became a symbol of the metaverse's potential to create entirely new markets, driving not only investment but also innovation in virtual economies.

Social platforms within the metaverse, such as VRChat and Horizon Worlds, allowed users to interact with others through customizable avatars, attend virtual parties, and explore immersive environments. These experiences blurred the lines between the physical and digital worlds, offering new ways for people to connect and express themselves.

### The Metaverse in Business and Education

Beyond entertainment, the metaverse began to make waves in business and education. Companies started exploring virtual workspaces, where employees could collaborate in immersive environments using VR headsets. Microsoft's Mesh platform, for instance, enabled holographic meetings, making remote work more engaging and interactive.

In education, the metaverse opened up new possibilities for immersive learning. Schools and universities experimented with virtual classrooms, where students could explore historical sites, conduct virtual science experiments, or participate in interactive lessons. These innovations demonstrated the metaverse's potential to transform traditional education and training methods.

### Challenges and Concerns

Despite its rapid growth, the metaverse faced several challenges in 2022. Privacy and security emerged as major concerns, as the collection of personal data in virtual environments raised ethical questions. Additionally, the high cost of VR/AR devices and the need for reliable internet access highlighted issues of accessibility, potentially creating a digital divide.

There were also concerns about the psychological and social impacts of spending extended periods in virtual worlds. Questions about addiction, mental health, and the erosion of real-world social skills began to surface, prompting calls for further research and regulation.

### The Road Ahead

The developments of 2022 laid a strong foundation for the metaverse's future. As technology continues to advance, the metaverse is expected to become more accessible, immersive, and integrated into our daily lives. From transforming industries like healthcare, retail, and entertainment to redefining how we connect and collaborate, the metaverse holds immense potential.

However, its success will depend on addressing the challenges it faces. Governments, tech companies, and society at large will need to work together to establish ethical guidelines, ensure accessibility, and protect users' privacy and security.

### Conclusion

The year 2022 was a turning point for the metaverse, marking its transition from a futuristic concept to a tangible reality. As virtual worlds continue to evolve, the metaverse promises to reshape how we live, work, and interact. While challenges remain, the possibilities are endless, and the metaverse is poised to become a defining feature of the digital age. Whether it's through virtual real estate, immersive entertainment, or innovative business solutions, the metaverse is no longer a distant dream—it's the future unfolding before our eyes.

# Nanotechnology: The Tiny Revolution

## Reshaping Our World"

### ### Exploring Nanotechnology: A Double-Edged Sword

In recent years, nanotechnology has emerged as one of the most revolutionary fields in science and engineering. By manipulating matter at the nanoscale, which is one billionth of a meter, researchers are unlocking new possibilities across various industries, including medicine, electronics, energy, and materials science. As we delve into the realm of nanotechnology, it is crucial to understand both its significance and the potential pitfalls that accompany it.

### #### Importance of Nanotechnology

The significance of nanotechnology cannot be overstated. It promises to create innovative solutions that can address some of the most pressing challenges facing humanity. In healthcare, for instance, nanotechnology is paving the way for targeted drug delivery systems, which enable medications to be delivered precisely to affected areas in the body, minimizing side effects and enhancing efficacy. This targeted approach could revolutionize cancer treatment, allowing for treatments that are more effective and less invasive.

In the field of electronics, nanomaterials are fundamental in developing smaller, faster, and more efficient devices. The miniaturization of components has led to the evolution of smartphones, tablets, and other gadgets that define modern technology. Similarly, nanotechnology is facilitating advances in renewable energy. Materials engineered at the nanoscale can significantly increase the efficiency of solar panels and batteries, contributing to the development of cleaner energy solutions.

Moreover, nanotechnology holds the potential to create stronger, lighter materials, influencing sectors such as construction and aerospace. With the ability to enhance material properties, we could see innovations that lead to safer buildings and reduced fuel consumption in transportation.

### Pros of Nanotechnology

1. **Enhanced Performance** : Nanotechnology improves the functionality of materials, increasing strength, durability, and responsiveness.
2. **Targeted Treatments** : In medicine, it allows for precision therapy, which can lead to better health outcomes with fewer side effects
3. **Environmental Benefits** : Innovations in nanotechnology can lead to more effective pollution control strategies and the development of green technologies.
4. **Cost-Effectiveness** : As processes are optimized at the nanoscale, production costs might decrease, making advanced technologies more accessible.
5. **Versatility** : The applications of nanotechnology span numerous domains, from textiles to food safety, showcasing its wide-ranging potential.X

## Cons of Nanotechnology

However, the application of nanotechnology is not without its drawbacks. One of the primary concerns is the potential health risks associated with exposure to nanoparticles. The long-term effects of inhaling or consuming nanoparticles are still not fully understood, leading to calls for rigorous testing and regulation.

Additionally, the environmental impact of manufacturing and disposing of nanomaterials is a point of contention. Toxicity and bioaccumulation in ecosystems could pose significant risks, raising questions about sustainability.

Ethical concerns also abound. As with any powerful technology, the potential for misuse exists. Issues related to privacy, security, and inequality could emerge if nanotechnology is not managed responsibly.

## Conclusion

Nanotechnology stands at a crossroads, presenting not only incredible opportunities but also significant challenges. As we advance in this field, it is imperative to strike a balance between innovation and responsibility. Policymakers, scientists, and consumers must work together to ensure that the benefits of nanotechnology are realized while mitigating its risks, paving the way for a safer and more sustainable future. Only then can we fully harness the potential of nanotechnology for the betterment of society.

Furthermore, public awareness and education play a crucial role in shaping the future of nanotechnology. It is essential to inform society about both its advantages and potential risks, fostering informed discussions and responsible decision-making. Transparency in research and development, along with clear regulatory frameworks, can help build public trust and ensure ethical applications of this technology.

Collaboration between governments, industries, and academic institutions is necessary to establish guidelines for safe usage, disposal, and production of nanomaterials. Investments in green nanotechnology—developing eco-friendly nanomaterials and sustainable production methods—can mitigate environmental concerns and make the field more sustainable.

As research progresses, interdisciplinary efforts in medicine, electronics, and energy will further expand nanotechnology's reach, revolutionizing industries while maintaining ethical and safety considerations. By addressing current challenges through proactive regulation, responsible innovation, and ethical oversight, nanotechnology can become a driving force for positive change, enhancing human life while preserving the environment for future generations.

To achieve this vision, ongoing dialogue among scientists, policymakers, and the public is essential to ensure that nanotechnology develops in a way that benefits all of society. Robust safety assessments, ethical considerations, and sustainable practices must be embedded into every stage of research and application. With responsible innovation and global cooperation, nanotechnology has the potential to drive breakthroughs in healthcare, energy efficiency, and environmental protection, ultimately shaping a future where scientific progress and societal well-being go hand in hand.

# Canvas of Creativity



**21NG1A0511**

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**TAMIRI ASRITHA**



# Rally for Glory!



The students of the Computer Science and Engineering (CSE) department at Usha Rama College of Engineering and Technology are not just confined to lines of code and algorithms—they bring the same zeal and strategic mindset to the sporting arena. With unwavering enthusiasm, teamwork, and sheer determination, they actively engage in various sporting events, transforming the playground into a battlefield of skill and spirit. Whether it's athletics, cricket, basketball, or volleyball, CSE students step forward with passion, resilience, and an unyielding drive to conquer.

Their dedication to sports transcends mere participation; it is a testament to their relentless pursuit of excellence. They train rigorously, strategize meticulously, and push their boundaries, proving that true champions are forged through perseverance and discipline. Balancing academic rigor with sporting ambitions, they exhibit an extraordinary synergy between intellect and physical prowess. Their ability to collaborate, adapt under pressure, and execute game plans not only ensures triumph on the field but also nurtures invaluable life skills that extend far beyond college.

Every victory, every milestone etched in sports becomes a badge of honor for the CSE department, inspiring a culture of active engagement and holistic growth. Their relentless spirit fosters camaraderie, resilience, and a competitive edge that prepares them to take on future challenges with confidence. More than just games, these experiences shape them into well-rounded individuals, blending intellect with athleticism in pursuit of greatness.



# Chalk Dust to Championship Dust



The faculty sports day at Usha Rama College of Engineering and Technology unfolded as a vibrant tapestry of athleticism and collegiality. Amidst the spirited competition, the presence of the Computer Science and Engineering department staff was undeniably felt. Though distributed across various teams, their participation was a constant thread, weaving through the day's events. They were not defined by team allegiances, but by their collective engagement

The CSE staff demonstrated a commitment to the event's spirit, contributing to the lively atmosphere through their active involvement in a diverse range of sporting activities. Their presence was a testament to the department's dedication to both intellectual and physical pursuits, adding a distinct energy to the day's festivities. Their participation was a silent affirmation of the department's holistic approach, a reminder that the pursuit of knowledge and the celebration of physical activity can coexist in perfect harmony.

They moved with a shared purpose, a quiet strength that resonated beyond any individual victory, shaping the overall experience of the day. Their presence was a subtle, yet powerful current, flowing through the games, a reminder that the spirit of the department extended beyond the walls of their labs and classrooms. They were not merely participants, but contributors to the collective narrative of the day, their energy leaving an indelible mark on the campus, a testament to their unified spirit.

The echoes of their participation extended beyond the final whistle, leaving a lasting impression of balance and well-rounded dedication. It served as a reminder that within the realm of technology, a vibrant and dynamic spirit of unity and physical activity thrives, enriching the entire academic community.





# NATIONAL SERVICE SCHEME

At Usharama College, Computer Science Engineering (CSE) students have consistently demonstrated their dedication to social service by actively participating in a wide range of National Service Scheme (NSS) events. These students have taken part in several impactful awareness campaigns, including raising awareness about AIDS prevention, where they organized informative sessions and distributed pamphlets to educate the community on the importance of safe practices. They also contributed significantly to the "Say No to Plastic" initiative, promoting the use of eco-friendly alternatives and encouraging people to reduce plastic waste through various workshops and campaigns.

In addition to awareness programs, CSE students have actively participated in humanitarian initiatives such as blood donation drives, where they not only volunteered to donate but also helped organize and manage the event by setting up online registration platforms and promoting the cause. During the New Year, the students spread warmth by distributing blankets and fruits to underprivileged families, ensuring that those in need had a little extra care during the cold months.

Furthermore, CSE students have supported education for underprivileged children by distributing stationery and other educational materials to government schools in surrounding areas. This initiative helped provide students from disadvantaged backgrounds with the tools they needed for their studies, fostering a positive impact on their academic progress.

The students have also been involved in various cleanliness drives, tree plantation activities, and local health camps, working towards improving the community's environment and well-being. Through their contributions, the CSE students of Usharama College have shown how technology and social responsibility can go hand in hand. By actively participating in these diverse activities, they have not only enhanced their leadership and organizational skills but also made a tangible difference in the lives of the people they've served. Their involvement in NSS has strengthened the college's commitment to creating socially responsible individuals who are ready to contribute to society in meaningful ways.



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## పరిశోధనలపై దృష్టి సారించాలి

**మాట్లాడుతున్న చీఫ్ ఇంజనీర్ డీఈఆర్ రత్నకుమార్, వేదికపై జనార్దనరావు, శైలికర్ రాజశేఖర్, ప్రొఫెసర్ ప్రసాద్ తదితరులు**

**శైలికర్ డీఆర్ఎం శ్రీనివాసరావును సన్మానిస్తున్న ప్రొఫెసర్ రత్నకుమార్, శ్రీనివాస్, సునీత, వెంకటరమణ తదితరులు**

**హనుమాన్ జంక్షన్: ఇంజనీర్లు జయరాజు, శ్రీనివాసరావు, శ్రీనివాసరావులతో హనుమాన్ జంక్షన్ లయన్స్ సభ్యులు**

**కామారా, న్యూస్టుడే:** మోక్షగుండం సేవలు ఎనలేనివిని శైలికర్ డీఆర్ఎం డి. శ్రీనివాసరావు అన్నారు. గురువారం ఇంజనీర్ల సందర్భంగా డీఆర్ నిర్వహించిన ఇంజనీరింగ్ కళాశాలలో ఆయనను సన్మానించారు. ప్రొఫెసర్ రత్నకుమార్, డా. శ్రీనివాస్, సునీత, వెంకటరమణ పాల్గొన్నారు.

**గుర్తితరం గ్రామీణులు:** శేరిలింగంపల్లిలో ఇంజనీరింగ్ కళాశాలలో జరిగిన కార్యక్రమంలో డి.ఎస్.ఎస్.ఎల్.ఎల్. డి.విజయలక్ష్మి ఇంజనీర్ రత్నకుమార్ ముఖ్యఅతిథిగా పాల్గొని మోక్షగుండం విశ్వశిక్షణ విభాగంలోని నాణ్యత రత్నకుమార్ మాట్లాడుతూ సమాఖ్యలో ఇంజనీర్ల పాత్ర కీలకమన్నారు. డా.జనార్దనరావు, శైలికర్ సుజిత రాంబ్రహ్మం, శైలికర్ రాజశేఖర్, ప్రొఫెసర్ ప్రసాద్, అధ్యక్షులతో కలిసి బహుమతులు అందజేశారు. డా.రాజశేఖర్ ఎన్.టి.టి.ఎం క్యాంపస్లో లయన్స్ క్లబ్ అధ్యక్షులతో ప్రొఫెసర్ మహాదేవ ప్రతినిధులు డీ.ఎం. సుందరరావు, శ్రీనివాసరావు, సుజితరావు, శ్రీనివాసరావులతో వివిధ కళాశాలలో జరిగిన ఇంజనీరింగ్ అధిష్టానంను ఆయా విభాగ సచివాలయం నిర్వహించారు.

**హనుమాన్ జంక్షన్:** ఇంజనీర్ల వృత్తి ప్రభుత్వం కారణంగానే దేశంలో ఎన్నో కీలక అభివృద్ధి పనులు ప్రాజెక్టులు సాకారమయ్యాయని పలువురు లయన్స్ క్లబ్ ప్రతినిధులు పేర్కొన్నారు. హనుమాన్ జంక్షన్ లయన్స్ క్లబ్ అధ్యక్షులలో నిర్వహించిన కార్యక్రమంలో మోక్షగుండం సేవల్ని కొనియాడారు. అనంతరం సీ.పీ.ఎల్.ఎల్. డి. శ్రీనివాస్ శ్రీనివాస రావు, ఎ.కె.ఎ. శ్రీనివాసరావు, మంజులక్ష్మిరాజ్ ఎ.కె. డి. జయరాజులను మనంగా సత్కరించారు. లయన్స్ క్లబ్ మాజీ గవర్నర్ వీరమాచంద్ర రావు ప్రహ్లాద, మేడికొండ బుద్ధిరాజయ్య నందిగం సార్లు, చలసాని వెంకటేశ్వరరావు, గూడపాటి రత్నశేఖర్, కామల సుబ్బారావు, తుమ్మల అంజలి లామ, మాకినేని శ్రీనివాసరావు, పాల్గొన్నారు.

**న్యూఢిల్లీలోని హనుమాన్ జంక్షన్:** నున్న విభాగ కళాశాల కంప్యూటర్ సైన్స్ విభాగం అధ్యక్షులలో శైలికర్ అనే వారికి సాంకేతిక వ్యతిరేక అధ్యాపక నిర్వహించి విడుదల చేశారు. ముఖ్యఅతిథిగా కళాశాల కార్యదర్శి నరేంద్ర సత్యనారాయణరెడ్డి, ప్రొఫెసర్ డాక్టర్ బి.రమణ, డాక్టర్ బి.రామోజీరావు విభాగవిభాగ అధ్యక్షులతో పాల్గొన్నారు.

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The Computer Science and Engineering (CSE) students of Usha Rama College of Engineering and Technology (URCE) have consistently demonstrated their dedication to social service by actively participating in various NSS (National Service Scheme) events. Their involvement in activities such as cleanliness drives, blood donation camps, plantation programs, and awareness campaigns showcases their commitment to making a positive impact on society alongside their academic pursuits. These initiatives have not only enhanced their sense of social responsibility but also encouraged them to actively contribute to the welfare of society, proving that technical education goes hand in hand with humanitarian values.

One of the most impactful initiatives was the "Clean Campus, Green Campus" drive, where CSE students took the lead in promoting environmental sustainability within the college premises. Their collective efforts in spreading awareness about cleanliness and greenery transformed the campus environment and inspired others to join hands in maintaining a clean and green campus. The students showed exceptional dedication by planting saplings, ensuring proper waste management, and emphasizing the importance of eco-friendly practices. This initiative not only contributed to the beautification of the campus but also instilled a sense of responsibility toward nature among the students.

Another significant contribution was witnessed during the Blood Donation Camp organized under the NSS wing, where the response from the CSE department was commendable. A large number of students voluntarily came forward to donate blood, demonstrating their compassion and readiness to serve humanity. Their willingness to contribute to this noble cause reflected their understanding of social responsibility, as they knew their act of kindness could save many lives. This participation helped the students realize that true service goes beyond the boundaries of academics, emphasizing the importance of empathy and care towards society.





In addition to these major events, CSE students have also been actively involved in various social awareness campaigns such as health and hygiene drives, educational programs, and community engagement initiatives. Their participation in these activities highlighted their commitment to uplifting society and promoting a better standard of living. By stepping into real-world social challenges, the students learned the importance of teamwork, communication, and problem-solving, which are essential qualities not only for an engineer but also for a responsible citizen. These campaigns have enabled them to understand the ground realities of society and strengthened their will to contribute meaningfully toward social causes.

The continuous involvement of CSE students in NSS activities has also greatly contributed to their personal growth, allowing them to develop leadership skills, organizational abilities, and a strong sense of empathy. Being a part of such initiatives has given them an opportunity to connect with different communities, understand their challenges, and work towards solutions. Their efforts in conducting community outreach programs and addressing social issues reflect their dedication to creating a positive social impact. This practical exposure has complemented their technical knowledge, making them not just skilled engineers but also socially responsible individuals.

The department takes immense pride in witnessing its students embrace the spirit of social service and humanitarian values. Their active participation in NSS events has not only strengthened their character but also inspired their peers to engage in community service. As the students continue to take part in such noble initiatives, they set a remarkable example of leadership, compassion, and teamwork. The CSE department hopes to see this spirit of selfless service grow stronger among students, reinforcing the belief that education is truly meaningful when it contributes to the betterment of society. With such dedicated and socially responsible students, the future of technology and humanity appears promising and bright.

# Hall of Excellence

The Computer Science and Engineering (CSE) Department at Usha Rama College of Engineering and Technology (URCE) is proud to have a highly skilled and experienced faculty that plays a crucial role in shaping the academic and professional growth of students. The faculty members are not only experts in their respective fields but also committed to continuous learning and development to keep pace with the rapidly evolving world of technology.

## Professional Certifications and Specializations

To ensure that students receive the best education aligned with industry trends, many faculty members have obtained professional certifications in various cutting-edge domains. These certifications include:

- Artificial Intelligence & Machine Learning – Enabling faculty to integrate AI-driven problem-solving techniques into the curriculum.
- Cybersecurity – Strengthening knowledge in data protection, network security, and ethical hacking.
- Cloud Computing – Focusing on cloud-based technologies such as AWS, Microsoft Azure, and Google Cloud.
- Data Science & Big Data Analytics – Enhancing expertise in data-driven decision-making, predictive modeling, and business intelligence.
- Internet of Things (IoT) – Exploring smart devices and connectivity solutions for real-world applications.
- Universal Human Values (UHV) Certification – Encouraging holistic education by incorporating ethics, empathy, and human-centric learning into technical education.



These certifications enable faculty members to stay updated with the latest technological trends and incorporate industry-relevant skills into the teaching-learning process.

## Active Participation in Faculty Development Programs (FDPs)

To further enhance their teaching methodologies and technical expertise, faculty members actively participate in Faculty Development Programs (FDPs), workshops, and short-term training programs organized by premier institutions such as IITs, NITs, and AICTE-approved organizations. These FDPs help educators gain advanced knowledge in emerging technologies, refine their pedagogical approaches, and explore innovative teaching strategies to make learning more interactive and engaging.

Regular participation in hands-on training sessions, coding boot camps, and online certification programs ensures that faculty members stay ahead in the academic and technological domains. Their continuous learning efforts directly benefit students by providing them with exposure to the latest tools, software, and programming paradigms used in the tech industry.



## Research Contributions and Industry Collaborations

Many faculty members of the CSE department are actively involved in research and innovation, publishing their findings in renowned national and international journals and conferences. Their research covers diverse fields such as Artificial Intelligence, Blockchain Technology, Network Security, and Automation. Faculty members also guide students in research projects, hackathons, and coding competitions, fostering a culture of innovation and problem-solving.

Additionally, the department collaborates with leading tech companies and industry experts to provide faculty and students with real-world exposure. These collaborations include:

- Guest lectures and expert talks from industry professionals.

- Internship and training opportunities for students under the mentorship of faculty.

- Industry-academia tie-ups to design and update the curriculum as per industry standards.

Through these initiatives, the faculty ensures that students are well-prepared to face the challenges of the modern tech-driven world.

### Creating an Industry-Oriented Learning Environment

The faculty members at URCE's CSE department go beyond traditional teaching methods to create an industry-oriented learning environment. By incorporating real-world case studies, project-based learning, coding challenges, and open discussions, they encourage students to think critically and develop problem-solving abilities.

Additionally, the UHV-certified faculty members focus on imparting ethical values, teamwork, leadership skills, and professional responsibility. This ensures that students not only excel in technical knowledge but also develop a strong moral foundation to contribute positively to society.

### Conclusion

The CSE Department at URCE takes immense pride in its highly qualified, certified, and research-oriented faculty, who continuously strive to enhance their knowledge and teaching methodologies. Their commitment to lifelong learning, active research, and professional development ensures that students receive top-quality education, industry exposure, and ethical guidance.

Through certifications, FDPs, research, and industry collaborations, the faculty empowers students to excel in the competitive world of technology, making them job-ready and future innovators.

# Hall of Fame – Beyond the Grades

The Department of **Computer Science and Engineering** at **Usha Rama College of Engineering and Technology** is proud of its students' participation and achievements in inter-collegiate and national-level technical competitions this academic year.

Our CSE students have actively participated in hackathons, coding contests, technical symposiums, robotics events, project expos, and innovation challenges organised by reputable institutions across the state and the nation. Through these platforms, students showcased their creativity, technical knowledge, and problem-solving skills while competing with talented peers from different colleges.

During the year, nearly **135 students** from our department participated in competitions hosted by several prestigious institutions, including:

- SV College of Engineering, Tirupati
- MVR College of Engineering and Technology, Vijayawada
- VIT-AP University
- SRM University, Andhra Pradesh
- Krishna University, Rudravaram
- PB Siddhartha College of Arts & Science, Vijayawada
- SRK Institute of Technology, Enikepadu
- Sona College Of Engineering Salem , Tamil nadu

Among the participating students, 55 students secured 1st, 2nd, and 3rd prizes, bringing recognition and honor to our institution at both state and national levels. Their achievements reflect dedication, teamwork, and innovative thinking nurtured within the department.

These competitions not only strengthened students' technical capabilities in areas such as Artificial Intelligence, Machine Learning, Software Development, and Cybersecurity but also helped them develop essential skills like communication, collaboration, leadership, and time management. Participation in such events has also opened opportunities for internships, industry exposure, and professional networking.

The department firmly believes that participation and learning are more important than winning, as every competition becomes a valuable learning experience for students. The consistent performance and enthusiastic involvement of our students make the entire department proud and motivate juniors to aim higher.

Through continued encouragement and support from faculty and management, Usha Rama College of Engineering and Technology remains committed to creating opportunities that help students grow into confident and competent professionals ready to excel in the competitive world.

<b>S.NO</b>	<b>Name of the Student</b>	<b>Name of the Event</b>	<b>State OR National level</b>	<b>Date of Event</b>	<b>Name of the Award</b>
<b>1</b>	Chintha Pratheepa	Blind Coding	State Sv College Of Engineering Tirupati ,Ap	14th July 2022	Second
<b>2</b>	Enikepalli Satish	Blind Coding	State Sv College Of Engineering Tirupati ,Ap	14th July 2022	Third
<b>3</b>	Vemuri Hema Sri	Project Expo	State Mvr College Of Engineering And Technology, Vij Ap	14th July 2022	Second
<b>4</b>	Shaik Musthafa	Project Expo	State Mvr College Of Engineering And Technology, Vij Ap	14th July 2022	Third
<b>5</b>	Vajja Prem Chandu	Sixth Sense	State Vit Ap	20th July 2022	Second
<b>6</b>	Gudise Sravanthi	Sixth Sense	State Vit Ap	20th July 2022	Third
<b>7</b>	Muddineni Ashok Babu	C2 Hack	State Srm University, Ap	24th Sept 2022	Second
<b>8</b>	Maila Nagaraju	C2 Hack	State Srm University, Ap	24th Sept 2022	Third
<b>9</b>	Kolluru Ruthwik	Hackathon	State Srm University, Ap	24th Sept 2022	Second
<b>10</b>	Bandi Jahnvi	Hackathon	State Srm University, Ap	24th Sept 2022	Second
<b>11</b>	Govada Jeevana	Robo Battler	State Mvr College Of Engineering And Technology, Vij Ap	28th March 2023	First
<b>12</b>	Kandala Pavan Sai	Robo Battler	State Mvr College Of Engineering And Technology, Vij Ap	28th March 2023	Second
<b>13</b>	Lavu Sai Anusha	Cine Shot	National Sona College Of Engineering Salem , Tn	25 <sup>th</sup> feb 2023	Second

S.NO	Name of the Student	Name of the Event	State OR National level	Date of Event	Name of the Award
14	Sonti Anjalii	Technical Quiz	National Pb Siddhartha College Of Arts And Science Vij , Ap	25th March 2022	Third
15	N Durga Malleswari	Paper Presentation	National Pb Siddhartha College Of Arts And Science Vij , Ap	25th March 2022	Second
16	Vuyyuru Leela Priya	Poster Presentation	State Mvr College Of Engineering And Technology, Vij Ap	29thjan 2023	Third

### Conclusion:

While many students proudly secured prizes in various competitions, there are even more students who gained valuable experience, confidence, and exposure through their participation. Every participant contributed to the department's success, and their efforts make us proud. The CSE department strongly believes that learning and participation matter just as much as winning, as they prepare students for greater achievements in the future.



# Enigmatic Minds

Van Rossum continued to lead Python's development as its "Benevolent Dictator For Life" (BDFL), guiding its evolution while ensuring it remained accessible and powerful. Python grew rapidly in the 2000s, becoming widely used in fields such as web development, data science, machine learning, and automation. Its extensive libraries and ease of use allowed it to flourish in both academic and industrial settings, becoming one of the most popular programming languages in the world.



**Guido van Rossum**  
**Creator of Python**

In 2018, Guido van Rossum announced his retirement from active leadership in the Python community, passing the baton to a steering council. However, his influence on Python's design and its community-driven development model continues to have a lasting impact. Python remains one of the most widely used languages today, especially in fields like artificial intelligence, data analysis, and web development, thanks to van Rossum's vision for a language that balances simplicity with power.



**Brendan Eich**  
**Creator of JavaScript**

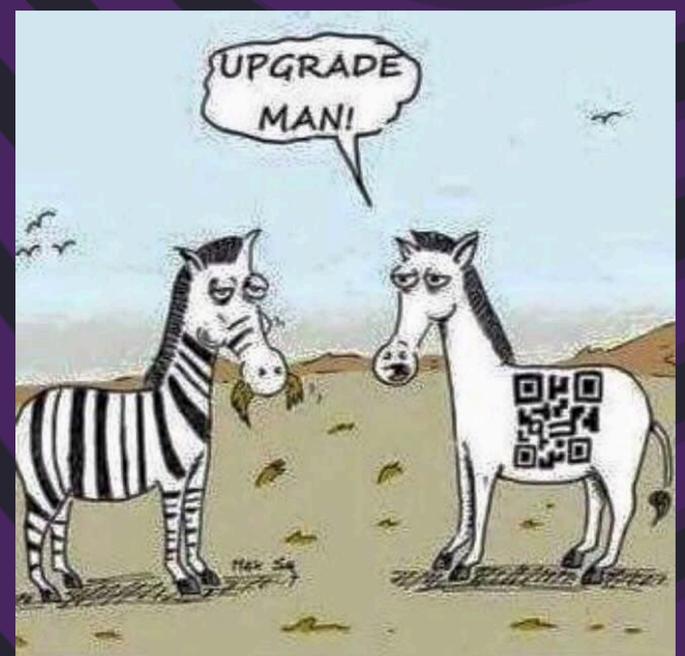
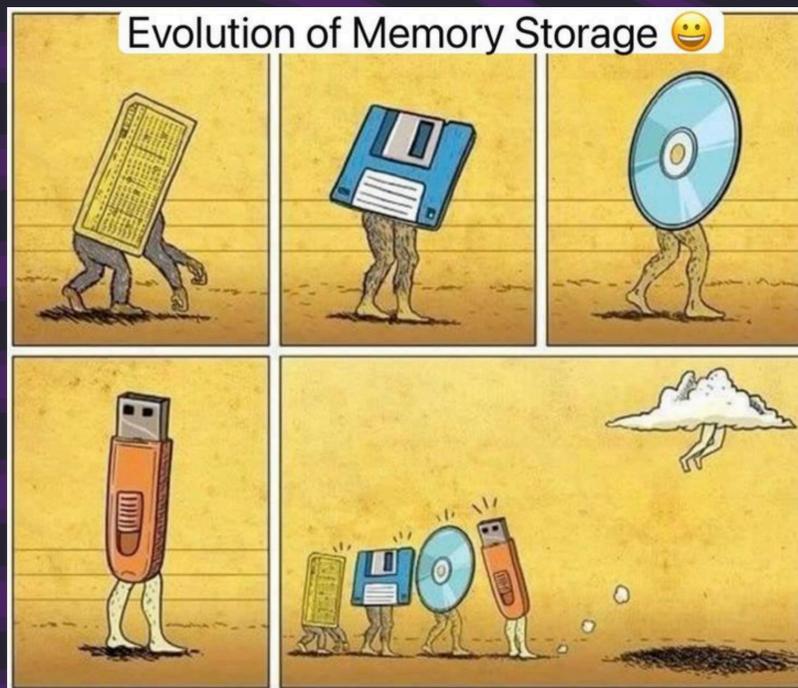
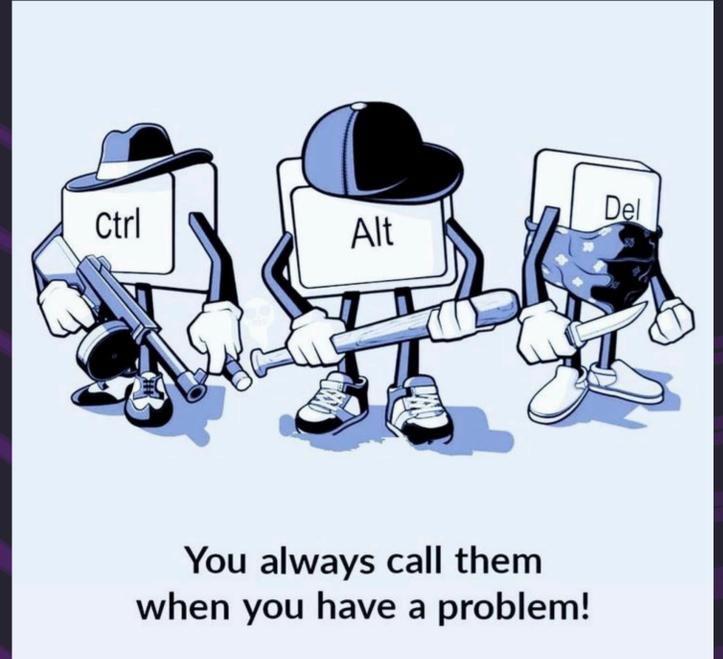
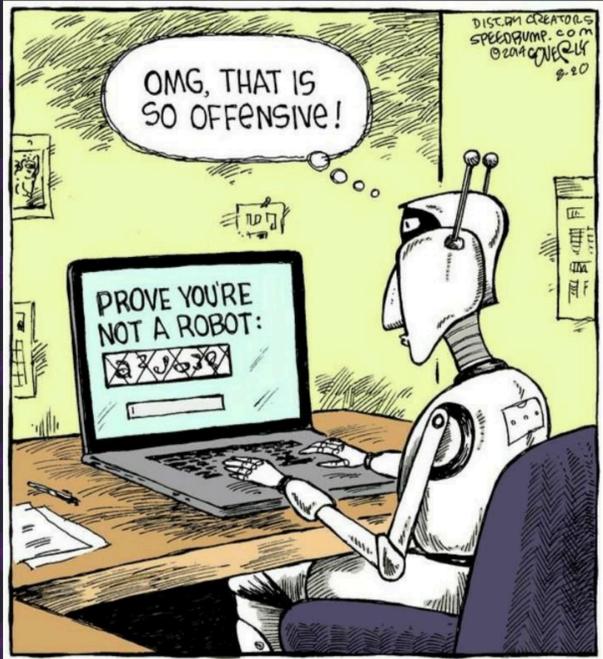
Brendan Eich is an American computer scientist and the creator of JavaScript, a programming language that revolutionized web development. Born in 1961, Eich studied mathematics and computer science at Santa Clara University and the University of Illinois at Urbana-Champaign. In 1995, while working at Netscape Communications, Eich developed JavaScript in just 10 days to make Brendan Eich, the creator of JavaScript, developed the language in 1995 while working at Netscape Communications.

He designed JavaScript in just 10 days to make web pages interactive and dynamic. The language quickly became essential for web browsers and has since evolved into one of the most widely used languages in the world, powering everything from websites to applications and server-side programming with Node.js.

Eich later co-founded Mozilla, where he contributed to the development of the Firefox browser and supported open-source software. After briefly serving as CEO of Mozilla in 2014, he resigned due to public controversy over his personal views. In 2015, Eich co-founded Brave Software and launched the Brave browser, focusing on privacy and ad-blocking features. His work in both JavaScript and privacy continues to shape the future of web development and online security.

web pages more interactive, and it quickly became an essential tool for web browsers, powering dynamic websites and applications

# Digital chuckles



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