# RAJEEV INSTITUTE OF TECHNOLOGY

Plot 1-D, Growth Center, B-M Bypass Road, Hassan, Karnataka - 573201.

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

# TECH PULSE

July - Dec 2024




## PSO

- To apply software engineering principles and practices to design, develop and implement software solutions.
- To use recent software tools to solve and analyse a given problem.

## PEO

- Graduates will become software developers in diverse domains and/or pursue higher studies.
- Graduates will process an agility to adapt to challenges in their profession.
- Graduates exhibit leadership qualities and will be a team player.
- Graduates will be able to communicate effectively and cultivate ethics.

## Message from the Desk



**Dr. Arjun BC**
***Professor & Head, CSE***

Greetings from the Department of Computer Science and Engineering (CSE). I feel that the CSE discipline has been universally acknowledged as an indispensable source and technique for the improvement of all human endeavors in the present and future. As India transforms into one of the fastest-growing economies, job creation and skill development appear to be natural strategies for sustaining prosperity. The Department has made a significant contribution to the growth of the nation by delivering high-quality education and enabling students to be globally competent.

The Department is privileged to have extraordinarily qualified, devoted, and scholarly faculty. Our faculty members have a fantastic sense of teamwork in order to produce the most qualified technocrats for the industry and prepare students to face global issues. The department has recognized the importance of integrating significant research activities with academics in order to improve the scholastic standards in teaching and the output quality.

The department's current mission is to strengthen the laboratory infrastructure by bringing in new industry-relevant technologies to enable students to learn at a higher level, stimulate integrated learning by providing multiple industry-relevant interfaces, and enable students to take up industry-relevant projects. Our goal is to cultivate the critical thinking and analytical skills in ensuring that graduates are employable, entrepreneurs, and ethical members of the global community. As part of Industry Institute Collaboration, our department has already signed Memorandum of Understanding (MOU) with various reputed industries, to provide platform for the students to work with companies for internships and projects and build technology products that have an influence on industry and society to enhance their employment skills.

Entrepreneurial–minded students should use this opportunity to become successful entrepreneurs.

Let me conclude my thoughts with a saying "Education is a continual process, it's like a bicycle… If you don't pedal you don't go forward".

Wishing all the very best to the faculty fraternity and students of our department.

## Vision

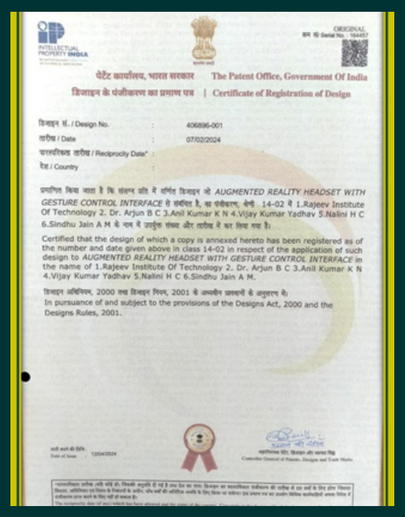
To become an exemplary centre for engineering education and research in the frontier areas of Computer Science and Engineering.

## Mission

- Render quality education through best teaching learning process and modern Educational tools to enable students for good careers.
- Impart essential skills to make students industry ready and future Professional with social concern.
- Provide facilities and expertise in recent computer technology to promote research and innovations.

# PATENTS







We are excited to highlight some of the latest patents developed by our department, reflecting our ongoing commitment to technological innovation. These patents demonstrate cutting-edge advancements in Augmented Reality (AR) and Artificial Intelligence (AI), designed to address real-world challenges and contribute to a wide array of industries.

1. Augmented Reality Headset with Gesture Control Interface

This patent introduces a revolutionary AR headset that integrates a gesture control interface, allowing users to interact with the virtual environment through simple hand gestures. The immersive experience this technology offers makes it highly applicable in sectors such as:

- Gaming: Enhancing user engagement through intuitive controls.
- Education: Enabling interactive learning environments.
- Remote Collaboration: Facilitating seamless communication in virtual workspaces.

The technology holds vast potential for transforming how we interact with digital content in real time.

2. Augmented Reality Headset with Gesture Control Interface (Advanced Model)

Building on the previous innovation, this advanced AR headset model offers enhanced precision and dynamic interaction capabilities. By providing sophisticated gesture recognition, it creates a more refined user experience. This version is particularly useful in professional fields such as:

- Medical Training: For simulations and virtual surgeries.
- Design & Engineering: Assisting in the visualization of complex structures and prototypes.
- Industrial Applications: Improving workflow efficiency through hands-free interaction.

The advanced model opens up new possibilities for professional applications, enabling more immersive and accurate AR experiences.

3. Artificial Intelligence-Based Plant Extract Analyzing Device

This AI-powered device is designed to analyze plant extracts and identify potential diseases. Utilizing machine learning algorithms, the device can detect subtle patterns and anomalies in plant samples, allowing for quicker and more accurate diagnoses. Its applications include:

- Agriculture: Detecting plant diseases early to prevent crop loss.
- Environmental Sustainability: Monitoring plant health to ensure ecosystem stability.

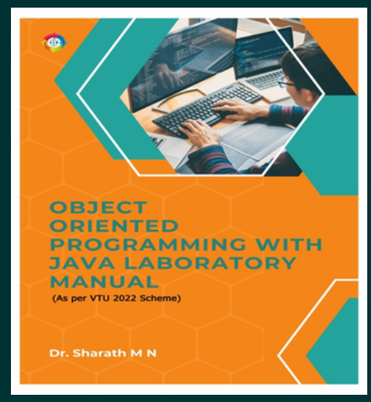
Precision Farming: Improving crop management by enabling farmers to take proactive measures.

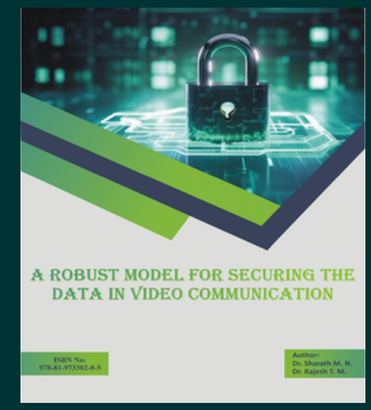
This innovation aims to revolutionize the way agricultural practices are managed, ensuring healthier crops and more efficient farming techniques.

These patents represent our department's dedication to advancing Augmented Reality and Artificial Intelligence, providing solutions that not only drive technological progress but also address the evolving needs of industries. We are proud to contribute to the next generation of innovations that have the potential to shape the future

# BOOK PUBLISHED BY CSE FACULTY




Author Spotlight: Dr. Sharath MN

Dr. Sharath MN is a Associate professor known for their latest book, "Advance Java Programming", "Object Oriented Programming with Java Laboratory Manual", & " A Robust Model for Securing the Data in Video Communication", With extensive experience in teaching field, Dr. Sharath MN offers valuable insights on Java programming & Computer Networks. Their work has been recognized in department of CSE, RIT, Hassan.

# INTERNATIONAL CONFERENCE





The Department of Computer Science and Engineering organized a hands-on workshop focusing on the latest trends, challenges, and best practices in the field of cybersecurity. This workshop provided participants with valuable insights into protecting digital assets, preventing cyber threats, and securing online platforms.

Attendees had the opportunity to learn from industry experts who shared their knowledge on key topics such as:

- Identifying and mitigating cyber threats.
- Best practices for data encryption and network security.
- Real-world applications for securing online systems and platforms.
- The importance of building resilient IT infrastructures against evolving cyber-attacks.

Through practical exercises and real-world scenarios, participants gained hands-on experience in implementing cybersecurity measures, enhancing their skills in safeguarding critical systems and data. The workshop aimed to prepare students and professionals to tackle the growing challenges in the cybersecurity landscape. This event was a great opportunity for participants to stay ahead of the curve and deepen their understanding of the vital role cybersecurity plays in today's digital world.

# EVENTS ORGANIZED BY COMPUTER SCIENCE & ENGINEERING

## Cyber security workshop






Organized by Department of CSE , A hands-on workshop focusing on the latest trends, challenges, and best practices in cybersecurity. Learn from industry experts about protecting digital assets, preventing cyber threats, and securing online platforms.
The workshop aimed not only to enhance technical knowledge but also to inspire participants to adopt cybersecurity best practices in their personal and professional lives. By equipping students and professionals with the tools to defend against cyber risks, the workshop contributed significantly to creating a more secure digital environment.

## Workshop on Augmented Reality Development







Internship for students of the 5th semester from the Department of Computer Science and Engineering (CSE) on "Augmented Reality Development" using Unity Engine was conducted by the Department of Computer Science and Engineering in association with Unity and ARK from Oct 3, 2024, to Oct 7, 2024.

## IoT Workshop





IoT (Internet of Things) Workshop Organized by Department of CSE, Dive deep into the world of IoT with interactive sessions on smart devices, data communication, and IoT security. Explore transforming industries and creating new business opportunities.
Interactive Sessions: Participants engaged in interactive demonstrations of smart devices, gaining firsthand experience of how IoT technologies function in real-world applications.
Data Communication in IoT: The workshop covered the crucial aspect of data communication, exploring how devices exchange information seamlessly through networks and the role of protocols such as MQTT and CoAP.
IoT Security: A key topic of discussion was IoT security, focusing on how to protect IoT systems from vulnerabilities, threats, and data breaches. Experts shared strategies for securing networks, devices, and data in IoT ecosystems.
Transforming Industries: Attendees learned how IoT is revolutionizing industries like healthcare, agriculture, manufacturing, and smart cities by enabling real-time data collection and decision-making.
Creating New Business Opportunities: The workshop highlighted the business potential of IoT, showing how businesses can leverage IoT technologies to innovate, enhance efficiency, and create new revenue streams.

## Women Transformation Program





Empowering Women in Technology: Career Development and Leadership Program

The Department of Computer Science and Engineering is proud to introduce an empowering Women's Career Development and Leadership Program designed to inspire and support women in pursuing successful careers in the tech industry. This initiative aims to break down barriers, build confidence, and provide the tools necessary for women to lead in their professional and personal lives.

- Career Development:

The program offers women the resources to enhance their career paths in technology and engineering fields. Through workshops, training, and hands-on sessions, participants gain practical skills to navigate the tech industry and advance their careers.

- Leadership Training:

Participants are equipped with leadership tools to help them take on leadership roles and succeed in high-impact positions. The training focuses on effective communication, strategic thinking, problem-solving, and decision-making, all of which are critical for leadership in technology and beyond.

# ACHIVEMENTS



**Winners of State level throw ball championship**




**VTU Regional Fest – Fashion Show Runners**



**Winner of VTU Intercollegiate karate championship**

Achievements in Sports and Dance Competitions

The Department of Computer Science and Engineering continues to excel not only in academics but also in extracurricular activities, with remarkable achievements in sports and dance competitions. Our students showcased their talent, dedication, and teamwork across various events, bringing home accolades and making the department proud.

These winners have not only excelled in their respective areas but have also set a benchmark of excellence for their peers. The department is incredibly proud of their accomplishments and looks forward to more students reaching new heights in the future.

Congratulations to all our winners and participants for their continued success and dedication to representing the CSE Department with pride!

## Editoranal Board

***Dr. Sharath M N***
*Associate Professor*

***Mr. Modak GN***
Student

***Mr. Anil Kumar K N***
*Assistant Professor*

***Mr. Chetan M***
Student

# AICTE ACTIVITY





"Helping local schools to achieve good results and enhance their enrollment in higher/technical/vocational education" was organized by the Department of Computer Science and Engineering on December 7, 2024, at Government Higher Primary School, Hampankuppe, as part of an AICTE activity.

# Winners of Hackathon Techtrivia 2024


Government of Karnataka
Department Of Collegiate and Technical Education
GOVERNMENT ENGINEERING COLLEGE HASSAN - 573201
INDIAN SOCIETY FOR TECHNICAL EDUCATION
STUDENT CHAPTER (KA117)

CERTIFICATE
OF ACHIVEMENT
PROUDLY PRESENTED TO
Mr/Mrs Yashwanth D of
Team Synergy Squad (Open Innovation)
reconized as the WINNERS of the hackathon "Techtrivia 24"
held from 9th to 10th of November,2024 hosted by GEC
Hassan in association with ISTE.

Dr. THIRTHEGOWDA M T
ISTE Coordinator

Dr. GIRISH D P
Principal




Winners of "Techtrivia 2024" Hosted by GEC in Association with ISTE

The Department of Computer Science and Engineering is thrilled to announce the winners of the "Techtrivia 2024", a highly anticipated technical quiz competition organized by GEC, Hassan in association with the Indian Society for Technical Education (ISTE).

Techtrivia 2024 brought together talented students from various institutions, challenging their knowledge in the fields of technology, engineering, and innovation. The competition tested participants on a range of topics, including emerging technologies, coding, computing, and engineering trends.

These winners showcased exceptional technical knowledge, quick thinking, and problem-solving abilities throughout the competition. Their outstanding performance reflects the high level of skill and expertise nurtured by the CSE Department and the broader academic community.

The event provided an excellent opportunity for students to demonstrate their technical acumen and engage with fellow peers, fostering a spirit of collaboration and healthy competition. We are proud of the success of Techtrivia 2024 and extend our heartfelt congratulations to all the participants, especially the winners, for their remarkable achievements!