DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH LABORATORY

The Department of Computer Science and Engineering at CMR Engineering College undertakes numerous initiatives aimed at fostering research and development (R&D) activities. Although efforts to establish a fully operational research laboratory began in February 2020, the laboratory is now functioning smoothly under the visionary leadership of the Principal, Dr. A.Srinivasula Reddy. The responsibilities of the Research and Development Centre and the Research Committee within the CSE department are outlined as follows:

- **Promotion of Research & Development:** The primary responsibility of the Research and Development Cell is to encourage and support research and development activities across the department.

- **Exploration of New Scientific and Technological Areas:** The department emphasizes the exploration of emerging fields in science and technology, with a focus on innovative and cutting-edge developments.

- **Policy Formulation:** The R&D Centre plays a crucial role in the formulation of policies that govern various research and development activities within the department.

- **Implementation of Common Research Policies:** The Centre ensures the implementation of uniform and comprehensive research policies that guide all R&D efforts.

- **Identification of Major Research Areas:** It is responsible for identifying key research domains that are critical to the department's growth and success.

- **Exploring Potential for Further Research:** The Centre works to discover untapped areas for future research, enabling the department to stay ahead of technological advancements.

- **Training Needs Assessment:** The Centre assesses and identifies the training needs of faculty and students, ensuring that the R&D culture in the Department of Computer Science and Engineering is strengthened.

- **Development of Instructional Guidelines:** The Centre defines clear and standardized instructions to govern various R&D activities within the department.

- **Designing Forms and Formats:** The Centre is responsible for designing standardized forms and formats to ensure efficient administration of the R&D Laboratory.

- **Industrial Collaboration and Agreements:** The Centre manages existing collaborations with industries and oversees agreements, ensuring that the department remains connected with the latest industry trends and innovations.

Through these efforts, the Research and Development Centre continues to contribute to the advancement of knowledge, innovation, and collaboration within the field of Computer Science and Engineering.

Research and Development Laboratory in the Department of Computer Science and Engineering – Key Functions

The Research and Development Laboratory in the Department of Computer Science and Engineering (CSE) mainly focuses on the following functions:

- **Promotion of Research Publications:** To encourage faculty members to publish research papers in reputed journals such as IEEE Transactions, SCI, Scopus, Web of Science (WoS), and UGC CARE–listed journals, and to participate in reputed national and international conferences.
- **Training and Motivation of Faculty:** To train and motivate departmental faculty members to actively engage in and enhance their research and development activities.
- **Identification of Domain Experts:** To identify core faculty members with specialized expertise in their respective research domains and promote their involvement in advanced research initiatives.
- **Organization of Research-Oriented Programs:** To organize seminars, workshops, and Short-Term Training Programs (STTPs) in research-related areas, conducted by experts from research organizations or industries, on a periodic basis, at least once every semester.
- **Support for Student Projects:** To assist students in successfully completing their curriculum-based projects by providing guidance, technical support, and research facilities.

These functions aim to strengthen the research culture and promote innovation within the CSE Department.

Activities Conducted in the Research Laboratory:

S No.	Academic Year	Activities Conducted in the Research Laboratory
1	2024-25	1. Mini Projects 2. Major Projects 3. Research Paper Publication 4. Real Time Research Project 5. Patent
2	2023-24	1. Mini Projects 2. Major Projects 3. Research Paper Publication 4. Real Time Research Project 5. Patent
3	2022-23	1. Minor Projects 2. Major Projects 3. Research Paper Publication 4. Real Time Research Project 5. Patent

The Research Laboratory carries out a wide range of activities to promote research excellence and innovation. The major activities include:

- Facilitating research paper publications in reputed national and international journals and conferences.
- Organizing seminars, workshops, and Short-Term Training Programs (STTPs) on emerging research areas.
- Conducting faculty development and research orientation programs.
- Providing guidance and support for faculty and student research projects.
- Encouraging interdisciplinary and collaborative research initiatives.
- Identifying and nurturing domain-specific expertise among faculty members.
- Supporting proposal writing for research grants and funded projects.
- Promoting industry–institute interaction through expert talks and collaborations.
- Maintaining research documentation, reports, and standardized formats.
- Assisting students in project development, implementation, and presentation.

These activities collectively contribute to building a strong and sustainable research ecosystem within the department

The Department of Computer Science and Engineering (CSE) is actively engaged in cutting-edge research and is organized into several specialized research areas. These include Wireless Communications, Network Security, Machine Learning, Artificial Intelligence (AI), High Performance Computing (HPC), Text and Speech Recognition, Data Mining, Cloud Computing, Big Data, Data Analytics, Internet of Things (IoT), Deep Learning, and other emerging domains.

To effectively promote and manage research activities, the department has established dedicated Research Groups, each led by an experienced Team Leader.

The details of the Research Groups and their respective Team Leaders are presented briefly below.

	AY:2022-23	**AY:2023-24**	**AY:2024-25**
Research Domain	**Research Group Leader**	**Research Group Leader**	**Research Group Leader**
Data Mining and Automated Testing, Machine Learning	Dr. Sheo Kumar	Dr. Sheo Kumar	Dr. Sheo Kumar
Image Processing and Machine Learning	Dr. Rajesh Tiwari	Dr. Rajesh Tiwari	Dr. Rajesh Tiwari
Artificial Intelligence	Dr. Rajesh Kumar Verma	Dr. Rajesh Kumar Verma	Dr. Rajesh Kumar Verma
Web Development	Dr. Ravi Kumar Chandu	Dr. Ravi Kumar Chandu	Dr. Ravi Kumar Chandu
Deep Learning	Mrs.M.Prashanthi	Mrs.M.Prashanthi	Mrs.M.Prashanthi
Machine Learning, Data Analytics	Mr.E.Suresh Babu	Mr.E.Suresh Babu	Dr.E.Suresh Babu
Cyber security, Block chain	Mr.K Vijaya Babu	Mr.K Vijaya Babu	Dr.K Vijaya Babu
Cyber security	Mr.B.Prasad	Mr. B. Prasad	Dr.B.Prasad
Machine Learning	Mrs.G. Sumalatha	Mrs.G.Sumalatha	Dr.G.Sumalatha
Deep Learning	Mrs.Y. Prathima	Mrs.Y. Prathima	Mrs.Y. Prathima

Cloud Computing	D.Nagesh	Mr.D.Nagesh	Dr.D.Nagesh
Cyber security	Dr. Praveen.C	Dr. Praveen.C	Dr. Praveen.C
Machine Learning	Mr. Mrutyunjaya Yalawar	Mr. Mrutyunjaya Yalawar	Dr. Mrutyunjaya Yalawar
Machine Learning	Mr.D Uma vishweshwar	Mr.D Uma vishweshwar	Mr.D Uma vishweshwar
Big Data&ML	Mrs.U.Mahendher	Mrs.U.Mahendher	Mrs.U.Mahendher
Machine learning & Networking	Mr. Md.Gulzar	Mr. Md.Gulzar	Mr. Md.Gulzar
Machine Learning	Mr.K.Ramana Reddy	Mr.K.Ramana Reddy	Mr.K.Ramana Reddy
Web Development	Mr.S.Kiran Kumar	Mr.S.Kiran Kumar	Mr.S.Kiran Kumar
Deep Learning	Mrs.K.Mamatha	Mrs.K.Mamatha	Mrs.K.Mamatha
Artificial intelligence	Mr.M.Prabhakar	Mr.M.Prabhakar	Mr.M.Prabhakar
Data Mining	Mrs.B.Mamatha	Mrs B.Mamatha	Mrs.B.Mamatha
Artificial intelligence	Mrs.B.Mahendher	Mrs.B.Mahendher	Mrs.B.Mahendher
Medical image processing	Mr. J Subbarayudu	Mr. Jsubbarayudu	Mr. J Subbarayudu
Cloud Computing	Ms.D.Navanitha	Ms.D.Navanitha	Ms.D.Navanitha
CSE Department R&D Meeting Co-Coordinator	Dr. Rajesh Tiwari	Mrs.M.Prashanthi	Mrs.M.Prashanthi

SOFTWARE'S SIMULATION TOOLS

The faculty members, postgraduate students, and undergraduate students of the Department of Computer Science and Engineering (CSE) make significant contributions to engineering research at the institution. Their active involvement enables innovative and creative research pathways, allowing researchers to pursue their areas of interest effectively. Owing to the department's strong focus on diverse real-world applications, research outcomes have been published in several leading national and international journals and presented at reputed conferences across the globe.

These research activities have had a long-lasting impact by facilitating consultancy services, patent publications, and initiatives toward entrepreneurship, including the establishment of start-up companies, as viable alternatives for knowledge transfer and innovation.

The Research Laboratory is equipped with the following hardware and software facilities to support and enhance research activities.

Software's Simulation Tools:

- PYTHON
- Visual Studio Code
- Eclipse
- JDK
- Sublime Text
- Code::Blocks
- SPAN
- AVISPA
- Cod elite
- CodeWarrior
- Selenium
- Ranores
- SCILAB
- OCTAVE

Licensed software's:

- Oracle
- MSDN
- MAT LAB software
- Drill bit

Open Source software's:

- Python
- NS2/NS3(Testing tool)
- Haddop
- Pig
- Hive
- Java
- Oracle
- Mongodb
- SCILab
- Octave
- OpenCV