

Research Initiatives

Department of Information Science and Engineering engages the research scholars, supervisors, faculty and advisors from academia and industry to motivate research in the Department. Research Scholars are involved in Research activities in various Research avenues. Faculty and Staff of Department of ISE are continuously involved in carrying out Research and Consultancy Projects. Various Research activities are regularly scheduled in the Research Centre to inculcate the Research arenas via Workshops, Technical Talks, Symposium, Seminars and Conferences. The Research Centre is totally abided to VTU rules and regulations with timely intimation to the scholars via circulars and other notifications, sent by VTU and College. A proper engagement with the Research Centre is assured for the scholars to regularly update their progress and documents in the ISE Research Centre files.

The Research has been carried out in prominent domain which has been categorized as follows:

- Computers Networks and Security, IOT, SDN, Cloud Computing, Cryptography, Data Security, Grid Security, Information Security, Product Security, Protocols, etc.
- Computer Vision and Image Processing, Soft Computing.
- AI & ML and allied areas
- Software Engineering and allied areas

Research Centre Head Details: [Attachment-1](#)

Research Avenues

The opportunities are enormous and a few of them are as below in the respective identified specialized areas.

1. Computer networks & security: SDN, cloud computing, cryptography, data security, grid security, information security, product security, protocols etc;
2. Image processing and Image prediction, cancer cell recognition, image filtering, bioinformatics etc;
3. Soft computing: machine learning, data mining, optimization, sustainable development, genetic algorithms etc;
4. Software Engineering: software rejuvenation, aspect-oriented requirements engineering etc;

Research Scholars

Sl. No	Criteria	Number
1	Male	14
2	Female	22
3	Full Time	2
4	Part Time	34
5	Internal Research Scholars	13
6	External Research Scholars	23
7	Awarded	23
8	Pursuing	13

Faculty guiding PhD (part time/integrated/full time)

Research Scholars and PhD. Awardees – Attachment-2

Research Scholars Pursuing PhD – Attachment-3

Research Scholars Guide and Co-Guide Details – Attachment-4

Consultancy Details – Attachment-5

Research Centre Infrastructure

The department provides a well-equipped **software infrastructure** that includes a combination of **open-source and commercial software** to support teaching and research. The available software resources cater to diverse domains such as **software engineering, data science, artificial intelligence, AR/VR and DevOps**.

Key **commercial software** available includes **Enterprise Architect** for system modeling and design, and **Unity** for AR/VR application development, enabling students to work on industry-relevant projects. In addition, the department leverages **open-source software** for programming, simulation, and research purposes, ensuring accessibility and flexibility for students and faculty.

To enhance hands-on learning in modern software development practices, the department also has **subscriptions to custom-configured cloud resources** that facilitate **DevOps training**, enabling students to gain practical experience in cloud-based software development, CI/CD pipelines, and containerized deployments.



List of Softwares

- Enterprise Architect Tool
- DevOps Infrastructure
- Unity Software

Visual Computing Lab



To support high-performance computing needs, the department has dedicated **workstations** designed for resource-intensive applications such as **machine learning, deep learning, data analytics, computer vision, and simulation-based research**. These workstations are equipped with **high-speed processors, dedicated GPUs, expanded RAM, and SSD storage**, ensuring optimal performance for computationally demanding tasks.

The availability of these high-end systems enables students and researchers to work on complex projects that require significant processing power. These workstations are strategically placed in Visual Computing Lab to support sponsored research initiatives. Regular upgrades and maintenance ensure that the infrastructure remains aligned with emerging technological advancements.

Details of Workstations

Sl No	Workstation Specifications
1	Workstation -1 HP Workstation Processor : Core i7 RAM: 32 GB HDD: 500 GB
2	Workstation -2 HP Workstation Processor : Core i9 RAM: 64 GB HDD: 1 TB
3	Workstation -3 HP Workstation Processor : Core i9 RAM: 64 GB HDD: 2 TB

IoT Lab Facilities

The department has a dedicated **Internet of Things (IoT) Lab** to support hands-on learning, prototyping, and research in IoT applications. The lab is equipped with **Raspberry Pi kits, Arduino boards, sensors, actuators, and other IoT development tools**, enabling students and researchers to design, implement, and test IoT-based solutions.

These resources facilitate practical experimentation in areas such as **smart systems, automation, embedded computing, and wireless sensor networks**. The lab provides an

ideal environment for students to develop real-world IoT applications, fostering innovation and interdisciplinary research. Regular updates and additions to the lab ensure that students have access to the latest technologies in the IoT domain.

Details of Hardware

Sl. No.	Equipment name	Quantity
1	Raspberry Pi 4	05
2	Raspberry Pi 4	05
3	Arduino Mega 2560 R3(05 no's)	05
4	Arm 7 LPC2148 Microcontroller kit	06
5	Arduino Mega 2560 R3	05
6	Arduino Yun board	01
7	Raspberry Pi 3 board	06
8	Raspberry Pi Camera Module	01
9	Raspberry Pi 3 Model B	05
10	Raspberry Pi Kits(Model 2B)	07
11	IoT Kit and Accessories	35