



# IIT KANPUR

Indian Institute of Technology Kanpur

# DEPARTMENT OF INTELLIGENT SYSTEMS

POST GRADUATE  
PROGRAM

2026 - 27

<https://iitk.ac.in/dis/>

# DEPARTMENT OF INTELLIGENT SYSTEMS

The Department of Intelligent Systems offers M.Tech, MS(R), and Ph.D. programs in machine learning, data science, natural language processing, computer vision, cyber-physical systems, robotics, and related fields. These postgraduate programs emphasize rigorous research training and advanced specialization, equipping students with a solid foundation and the ability to address challenging real-world problems. The programs are designed to prepare graduates for impactful careers in industry, research, and academia across the rapidly evolving field of intelligent systems.



# POST-GRADUATE PROGRAMS OFFERED

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For detailed information regarding eligibility and minimum qualifications, applicants should refer to the website of the Dean of Academic Affairs ([www.iitk.ac.in/doaa/](http://www.iitk.ac.in/doaa/)). Candidates are also advised to check <https://iitk.ac.in/dis/> for regular updates on DIS admissions.

## M.Tech.

In M.Tech. program, a student takes eight courses, some of which may be compulsory for the area of specialization chosen, the rest being electives to be chosen in consultation with the program advisors. The program also includes a research/project component, which culminates in a thesis.

## MS(R)

In MS(R) program, a student has to complete a minimum of four courses in the area chosen by the student in consultation with the thesis advisor. After completing the course work, the student is expected to do research work leading to a thesis. Focus on research makes this program exciting and provides in-depth knowledge to the student.

## Ph.D.

In the Ph.D. program, students need to complete minimum of four courses. The most important part of the doctoral program is the research work leading to a thesis. Students work on exciting research problems, usually sponsored by industry or government agencies, come up with innovative/original ideas, build cutting edge systems, and publish in top tier international venues.

# FACULTY LIST

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Manindra Agrawal



Nitin Saxena



Indranil Saha



Shakti S. Gupta



Vimal Kumar



Piyush Rai



Ketan Rajawat



Amey Karkare



Soumya Ranjan Sahoo



Rohit Budhiraja

# LABS / FACILITIES

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The department provides well-equipped laboratories with the necessary instruments, computing infrastructure, and workstations to support research activities and hands-on practical learning.



# FINANCIAL ASSISTANCE

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Non-sponsored Indian nationals admitted to the regular full-time PG program are eligible for financial assistance as per institute norms. Students receiving assistantship may be required to participate in teaching or research activities assigned by the department, such as serving as a teaching assistant or tutor.

# BROAD RESEARCH AREAS

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## Cyber-Physical Systems

**Faculty Members: Indranil Saha**

Design and verification of cyber-physical systems interacting with the physical world, with applications in autonomous vehicles, warehouse automation, disaster response, and precision agriculture.

## Robotics

**Faculty Members: Shakti S. Gupta, Ketan Rajawat, Indranil Saha**

Research on autonomous robots focusing on perception, planning, control, multi-robot coordination, UAV systems, and quadruped robot design.

## Optimization

**Faculty Members: Ketan Rajawat**

Development of stochastic, distributed, and nonconvex optimization algorithms for machine learning, signal processing, and autonomous systems.

## Machine Learning

**Faculty Members: Piyush Rai and Rohit Budhiraja**

Research on probabilistic models and efficient algorithms for learning from high-dimensional data under uncertainty and limited resources.

## **Human-AI Interaction**

**Faculty Member: Nisheeth Srivastava**

Study of human interaction with intelligent systems to design AI technologies aligned with human cognition and behavior.

## **Software Engineering**

**Faculty Member: Amey Karkare**

Development of AI-driven educational technologies including personalized learning, automated tutoring, and secure digital credentialing.

## **Control**

**Faculty Member: Soumya Ranjan Sahoo**

Design of control algorithms for autonomous systems operating in uncertain and dynamic environments.

## **Cybersecurity**

**Faculty Member: Manindra Agrawal, Somitra Sanadhya and Nitin Saxena**

Research on cryptography, malware analysis, secure protocols, and AI-based defense mechanisms including post-quantum security.

## **Pervasive and Mobile Computing**

**Faculty Member: Rohit Budhiraja**

Research on 5G/6G wireless systems using optimization, signal processing, and AI, with contributions to standards and real-world testbeds.

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# CONTACT

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