Department of Electrical, Computer, and Systems Engineering at Rensselaer

INTELLIGENT SYSTEMS AND MACHINE LEARNING

GRAPHICS AND COMPUTER VISION

COMPUTER HARDWARE SYSTEMS

COMMUNICATIONS AND INFORMATION

NETWORKING AND CYBER-PHYSICAL SYSTEMS

PHOTONICS, OPTICS, AND OPTOELECTRONICS

CONTROL, ROBOTICS, AND AUTOMATION

ENERGY AND POWER SYSTEMS

PHOTONICS, OPTICS, AND OPTOELECTRONICS

CORE SKILLSETS AND COURSES

- **Computer Systems**
  - Computer components and operations;
  - Computer architecture and networking;
  - Computer operating systems

- **Data and Information**
  - Probability and statistics; Signal processing; Analog and digital communication

- **Learning and Control**
  - Time and frequency domains; Feedback control; Digital control; Machine learning

- **Image Science and Computer Vision**
  - Computer graphics; Machine vision; Image processing

- **Circuits and Electronics**
  - Analog and digital circuits; Circuit analysis, simulation, and design; Microelectronics; Integrated circuits, VLSI

- **Energy and Power**
  - Electromagnetic fields and waves; Power grids; Renewable sources; Electric machines

- **Design and Teamwork**
  - Embedded control; Engineering design; Multidisciplinary capstone design

FOCUS AREAS

- AI and Machine Learning
- Computer Vision and Image Processing
- Communications and Computer Networks
- Control Systems
- Robotics and Automation
- Computer Hardware Systems
- Electric Power and Energy
- Microelectronics and Photonics
- Mixed Signal Electronics

ABOUT ELECTRICAL, COMPUTER, AND SYSTEMS ENGINEERING

Founded in 1907, one of the first Electrical Engineering programs in the U.S.

**Students**

- 591 Undergraduates
- 16 Masters Students
- 95 Doctoral Students

**Ranked 42th (EE), 42th (CSE) in 2023 U.S. News & World Report Graduate Rankings**

**Ranked 24th in 2022 TFE Times Best Master’s of Computer Engineering Programs**

**Ranked 25th in 2022 College Factual Best Electrical Engineering Programs**

**Ranked 26th (EE), 25th (CSE) in 2023 U.S. News & World Report Undergraduate Rankings**

**Degrees Offered**

- Electrical Engineering (B.S., M.S., Ph.D.)
- Computer Systems Engineering (B.S., M.S., Ph.D.)
- Minors in Electrical Engineering, Computer Systems Engineering

**Dual Major Opportunities**

- Electrical and Computer Systems Engineering, Computer Science, Applied Physics, ITWS

**Undergraduate Opportunities**

- Undergraduate Research Projects, Internships, Co-ops, Study Abroad

**Graduate Student Support**

- Almost all doctoral students receive financial assistance

**Research Areas**

- Information Science and Systems
- Control and Automation
- Communication and Networking
- Computer System Design
- Energy and Power Systems
- Electronics and Photonics

**Affiliated Research Centers**

- Center for Materials, Devices, and Integrated Systems (CMDIS) cmdis.rpi.edu
- Center for Future Energy Systems (CFES) cfes.rpi.edu
- NSF Engineering Research Center for Lighting Enabled Systems and Applications (LESA) lesa.rpi.edu
- NSF Engineering Research Center for Ultra-Wide-Area Resilient Electric Energy Transmission (CURENT)
- Cognitive and Immersive Systems Lab (CISL), cisl.rpi.edu
- Center for Mobility with Vertical Lift (MOVE) move.rpi.edu
- Center for Initiatives in Pre-College Education (CIPCE) cipce.rpi.edu

**Contact Us**

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**Faculty**

- 27 Tenured/Tenure-Track
- 6 Lecturers and Professors of Practice
- 11 IEEE Fellows, 8 NSF CAREER Awards
- $10M annual research expenditures

**Staff**

- 3 Technical Support Staff
- 4 Administrative Support Staff