Electrical and Computer Engineering
AT RUTGERS

Do you dream of designing a "smart" home or advancing 5G network applications? Do you see yourself devising failsafe cybersecurity systems? Are you interested in using machine-learning to solve complex problems? As an electrical or computer engineer you will be at the forefront of technological advances that transform the way we will live tomorrow and for generations to come.

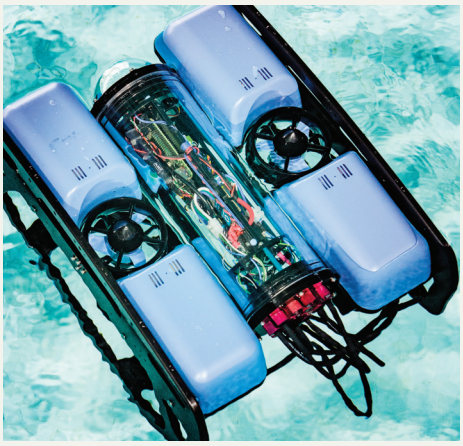
Rutgers' dynamic electrical and computer engineering program is noted for up-to-the-minute coursework and research opportunities in world-class labs in fields ranging from cloud computing, robotics, and digital signal processing to virtual reality and nanotechnology. With two curriculum options, students can focus coursework and electives in electrical engineering or computer engineering.

A background in ECE fundamentals is provided by coursework in linear systems, electronic devices and circuits, digital signal processing, and communications engineering, logic design, computer architecture, computer graphics and vision, Internet of Things, robotics, and virtual reality technology.

Co-op programs and internships at leading technology, banking, and manufacturing companies provide invaluable technical and business experience and can lead to offers of full-time employment.

PROFESSIONAL OPPORTUNITIES

Computer engineering
Wireless communications
Electronics
Semiconductors
Signal processing
Telecommunications
Power industry
Cybersecurity
Biomedicine
Financial engineer



THE FUTURE IS NOW

Seth Karten joined Prof. Dario Pompili's lab to explore the problem of underwater drones unable to ascertain their location using Global Positioning System. Karten's research utilized computer vision and artificial intelligence to calculate a robot's location using submerged landmarks.

DEGREES OFFERED AND CURRICULAR OPTIONS

BS

Options:
- Electrical Engineering
- Computer Engineering

BS/BA Dual Degree

BS/MS Five-year Dual Degree

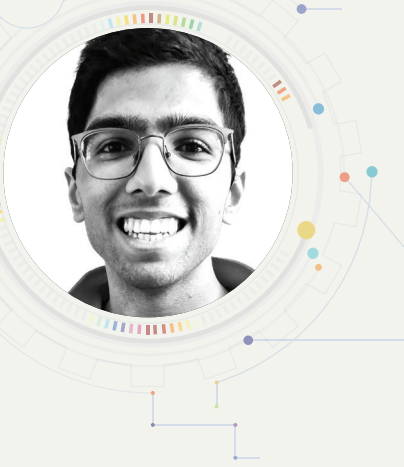
BS/MBA Five-year Dual Degree

MS

PhD

For more information, visit
ece.rutgers.edu

"Don't be afraid to try anything new. Try to put yourself out there and try as many things as you can. And have fun. It's been a wild ride and I've had a blast."
Shantenu Laghate



RUTGERS
School of Engineering

Established in 1864, Rutgers University's School of Engineering is a vibrant academic community whose richly diverse students and faculty members are committed to globally sustainable engineering. Its mission is built on a commitment to fostering the integration of education and research to achieve transformational innovation that is ethically responsible. With seven academic departments representing key engineering disciplines, the School of Engineering is recognized around the world as comprehensive and leading-edge, training the next generation of innovators across a broad spectrum of professions.

Electrical and Computer Engineering at Rutgers

PROGRAM HIGHLIGHTS

Students in the undergraduate ECE program can pursue one of two options for their BS degree: electrical engineering or computer engineering. Students also have the opportunity to do research with faculty in areas such as wireless information networks, computer vision, digital signal processing and digital logic design, microelectronics, and computer architecture. All department graduates join a vibrant network of alumni holding prominent positions in industry, academia, and research.

HANDS-ON ACTIVITIES

Students gain invaluable, relevant work experience and make lasting professional network connections through industry internships and co-op programs.

Student teams address areas such as sensor, control, and DSP systems; wireless/mobile communication systems; computer networks; software engineering; robotics; virtual reality; and circuit and microelectronic systems in senior design projects.

Additionally, guided by an award-winning faculty, students can engage in ground-breaking research in areas ranging from cloud computing to nanotechnology to biorobotics.

COURSES OFFERED

Digital Systems Design
Electronic Devices and Circuits
Mobile App Engineering and User Experience
Programming Methodology
Robotics and Computer Vision
Virtual Reality
Digital Signal Processing
Software Engineering
Computer Architecture

RESEARCH FACILITIES AND CENTERS

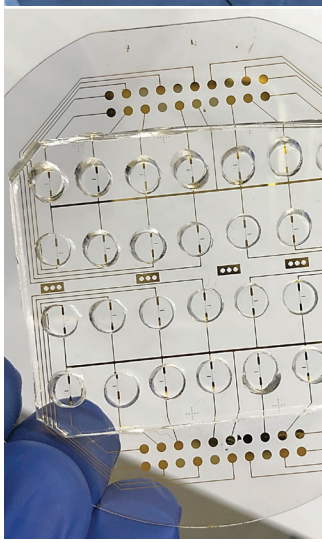
High-Performance Computing Center
Wireless Information Network Laboratory (WINLAB)
ORBIT Wireless Testbed

STATE-OF-THE-ART LABORATORIES

Communications and signal processing
Power electronics
Neuroimaging
Coding and securing information
Data analysis and information security
Computer vision
Immuno-engineering
Micro-nanotechnologies

Socially Cognizant Robotics for a Technology Enhanced Society (SOCRATES) is an interdisciplinary project funded by the National Science Foundation and led by **Prof. Kristin Dana**, integrating technology domains of **robotics, computer vision,** and **machine learning** with social and behavioral sciences including psychology, cognitive science, and urban policy.

Using **biosensors and artificial intelligence**, a device known as a lab-on-a-chip is being developed by **Prof. Mehdi Javanmard** that could be used in hand-held or wearable devices to monitor health and exposure to dangerous bacteria, viruses, and pollutants.



Watch this space. ECE's WINLAB is partnering with leading universities to design, develop, and deploy a city-scale advanced wireless testbed in Manhattan in order to support real-world experimentation on next-gen wireless technologies and applications.