

ELECTRICAL ENGINEERING

You've got the power.

Given the vast number of things in our world that are powered, connected, and smart, electrical engineers have nearly endless potential. Electrical engineers use their command of physics and mathematics to design electronics and electrical devices at all scales: tiny microelectronics that cannot be seen without a microscope, massive generation plants that deliver electricity throughout the world, data processing algorithms that run on wearable devices, and global air and ground communication networks, among many others.



“My senior design project and other undergraduate research opportunities, on top of the radical things I learned in class, have set me up to succeed.”

Mohamad Merei, Electrical Engineering '22
Electrical Engineer at Milwaukee Tools

Streamlining competitive algorithms

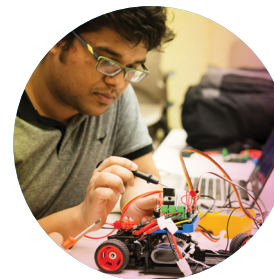
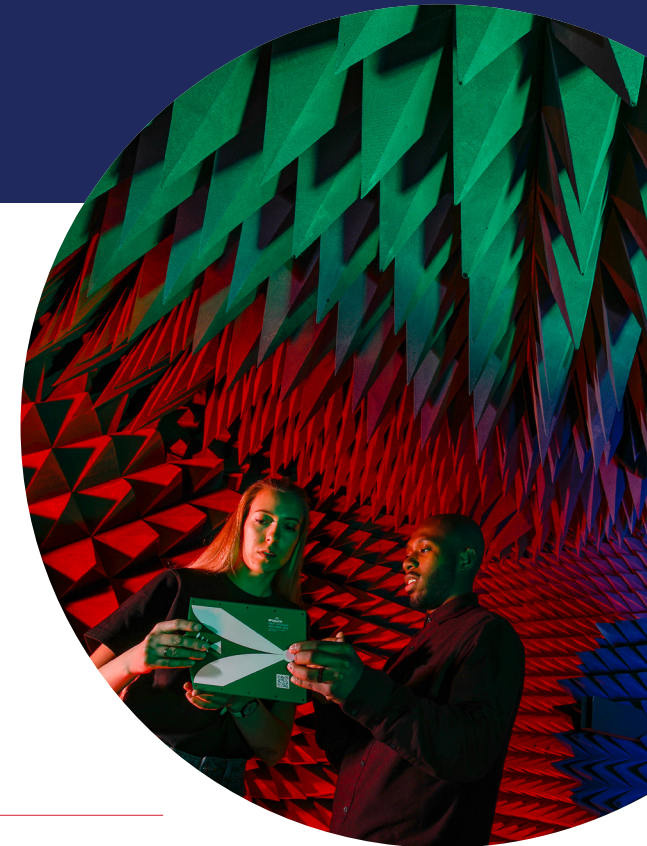
Mesrob Ohannessian, a UIC faculty member in electrical and computer engineering, studies the broad impact of fairness in artificial intelligence algorithms. He wants to understand the limits of what is possible with data and how to achieve this potential fairly.

Just as humans learn, machine learning algorithms used for artificial intelligence also form patterns and connections from the data they receive, improving themselves with more experience. He plans to streamline the design of competitive algorithms, improving their accuracy.

As an electrical engineering student, you can take courses, including:

- ECE 407: Pattern Recognition I
- ECE 415: Image Analysis and Computer Vision I
- ECE 491: Introduction to Neural Networks

Visit ece.uic.edu to learn about student organizations, courses, and more.



CREATIVITY IN ACTION

For our annual senior design showcase, the UIC Engineering Expo, electrical engineering students have created:

- ▶ A battery and battery management system for UIC Motorsports' first Formula Electric race car
- ▶ A redesigned ball that is more durable, easier to hear, and has an improved center of gravity, for use in "beep baseball," a sport played by visually impaired athletes
- ▶ A 3D-printed spoon that can detect and correct for involuntary movements, easing mealtimes for people with neurological illness or impairment
- ▶ An impact detection system for sports helmets, which measures g-forces and sends alerts about dangerous impacts

With an electrical engineering degree, you might:



Develop and improve wireless networks that support global communications



Invent new touch-sensitive coatings that make display screens stronger



Design navigation systems that guide autonomous cars, trucks, and ships

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