World-Class University in the Best College Town

“I love the student atmosphere in Ann Arbor. The students are really welcoming and fun. There are so many opportunities to get involved on campus.”

— Iverson Bell (MSE PhD ‘11 ’15)

As a student, Iverson Bell specialized in electrodynamic tether technology for very small satellites used for space weather, emergency preparedness, and emergency relief. He was a member of a coalition that traveled to Washington, DC to urge increased STEM support.

Mai was convinced Michigan was the right place after meeting with her advisor. She is now working on a better way to diagnose breast cancer with MRI, while giving back to the community with her many outreach activities.

“If you can change one life each decade the world will be different in a single generation.”

— Allan Evans (MSE PhD ’07 ’10)

Allan is co-founder with Ed Tang (BSE ’11), of Avegant, which is launching the Glyph, a next-generation near-eye display.

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Graduate Program in ECE

Electrical and Computer Engineering at Michigan is a top-ranked, world-class department that is pushing the boundaries of research in the most high-tech and innovative areas affecting society. Our faculty and students are relentless in their pursuit of excellence: whether that means finding the best solution to a problem, doing something no one has done before, or simply applying all of their knowledge and skills to the needs of society. At Michigan ECE, students learn, play, make lifelong friends, and one day join an enormous network of welcoming alumni. Michigan’s graduate program in ECE is designed around the excellence, diversity, and curiosity of its students. Come and experience the Michigan Difference!

Research Specialties
- Applied Electromagnetics & RF Circuits
- Communications
- Computer Vision
- Control Systems
- Embedded Systems
- Integrated Circuits & VLSI
- MEMS & Microsystems
- Optics & Photonics
- Power & Energy
- Robotics
- Signal & Image Processing and Machine Learning
- Solid State & Nanotechnology

Be Part of Something Great

“Michigan has, I think, the best circuits program in the world. One of the more exciting projects to come out of our group is the Michigan Micro Mote, which is the world’s smallest computer.”

~ Laura Freyman

Research by ECE Faculty and Students
- The robot MABEL clocked in as the world’s fastest bipedal robot with knees. Her successor, MARLO, walks unassisted.
- The Michigan Micro Mote (M3), smaller than a few millimeters, is the world’s smallest computer.
- HERCULES, a 300 TW laser is the world record holder for highest-focused intensity and amplified spontaneous emission.
- Theory and algorithms for big data analysis are making sense of massive datasets, as well as information streaming in from sensors designed by other ECE faculty.
- Improved lung cancer detection and treatment is being enabled through improved image processing and big data analysis.
- Decades of groundbreaking research has been accomplished in MEMS and Microsystems, including neural probes and prostheses, implantable devices, miniature sensors, gyroscope, accelerometers, hermetic packaging, and other devices for use in health, telecommunications, environmental, and electronic applications.
- Cleaner energy for a brighter tomorrow is being made possible through energy-efficient solar cells, lighting, and displays, and the improved integration of alternative energy sources into the grid.
- ECE researchers have built some of the most advanced radar calibration systems in the world. Today, their transponder system is interfacing with NASA’s satellite, SMAP, which is sensing soil moisture on a global scale for the first time.

State-of-the-art Research Labs and Computing Resources
- Lurie Nanofabrication Facility: one of the most comprehensive and advanced academic cleanroom facilities in the U.S. for research in MEMS, Solid-State Devices, and Nanotechnology
- Anechoic Chamber: 60’ long chamber for antenna and radar system development
- High-performance computing simulation pool; hundreds of state-of-the-art servers and high-performance cores; industry-standard computer-aided design software
- Extensive equipment for chip and device development
- Industry-standard software
- World’s fastest table-top laser, HERCULES; and additional labs for advanced research in optics and photonics
- 40+ research labs with state-of-the-art equipment in ECE, plus many more with dedicated group space for computing research. Additional access to labs throughout U-M for unlimited research possibilities.

“‘We provide the training to take students wherever they want to go.’

~ Khalil Najafi

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“Research by ECE Faculty and Students
- ‘I came from industry, and this lab is better equipped than what we had. Much of the equipment is identical to what I worked on in my last job.’

~ Nathan Roberts (MSE PhD ’11 ’15)