

Graduate Programs in Electrical and Computer Engineering

ABOUT

The department's graduate students work with distinguished faculty on a variety of focus areas, from smart sensors, radar and navigation systems, and power-generating systems to systems design and networks. The department is housed in the Harris Corporation Engineering Center, a modern, 113,866 square-foot facility.

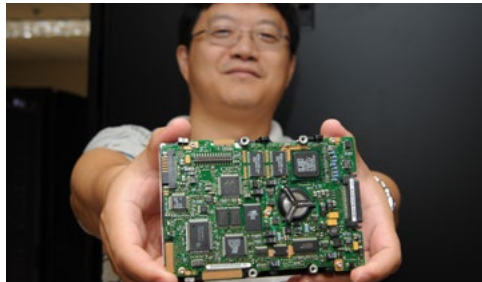
THE UCF DIFFERENCE

NATIONALLY-RANKED PROGRAMS

Electrical Engineering: 52 out of 123 (30th among public schools). Computer Engineering: 58 out of 95.

LEADERS IN SMART GRID ENERGY RESEARCH & EDUCATION

UCF leads a national, multi-partner consortium, known as FEEDER, funded by the U.S. Department of Energy. More than 50 partners, including 12 universities and 22 utilities and co-ops, are working together to modernize and sustain the nation's power grid as it transitions to renewable energy sources such as wind and solar. Through industry-relevant courses and shared curriculum, FEEDER partners are educating the nation's current and future smart grid workforce. ECE Department Chair Zhihua Qu is principal investigator. UCF's Florida Solar Energy Center is also on the team.



PRIME LOCATION

Orlando is in the center of the I-4 High Tech Corridor. The region's top tech industries include modeling, simulation and training, optics and photonics, smart sensors, advanced turbomachinery, advanced materials, biomedical engineering, defense, aerospace and entertainment. The Central Florida Research Park, adjacent to UCF, is the nation's 7th largest with more than 10,000 employees and 120 companies.

FACTS OF INTEREST

UCF's electrical and computer engineering researchers are part of a team that landed the largest single grant in UCF history, \$55 million from NASA. The project, "Global Observations of the Limb and Disk" will launch a satellite to observe the sun's interactions with Earth's atmosphere.

Prof. Juin J. Liou received the prestigious IEEE Electron Devices Society Education Award for "promoting and inspiring global education and learning in the field." His expertise is electrostatic discharge (ESD) and electromagnetic compatibility protection design. With 10 books and about 500 papers written, the prolific author and researcher has overseen 1,000 students who have worked in his four labs.

Prof. W. Linwood Jones works to improve hurricane surveillance with a microwave remote sensor known as HIRAD (Hurricane Imaging Radiometer) that can measure ocean surface wind speed and rain rates while on-board a high-flying unmanned research aircraft. Dr. Jones leads the research team that is responsible for data analysis software and validation of wind speed and rain rate measurements.

GRADUATE DEGREES OFFERED

MASTER'S

Electrical Engineering
(Non-Thesis & Thesis option with tracks)

Computer Engineering
(Non-Thesis & Thesis option with tracks)

DOCTORAL

Electrical Engineering
Computer Engineering

FACULTY HONORS

Our faculty are members and fellows of professional societies, including the prestigious National Academy of Engineering (1 member); IEEE (7 fellows); AAAS (3 fellows); American Society of Engineering Education (1 fellow); ECS (1 fellow); National Academy of Inventors (1 member).

ALUMNI AND STUDENTS SAY

"The Ph.D. journey at UCF equipped me with excellent knowledge and taught me to be perseverant and tough."

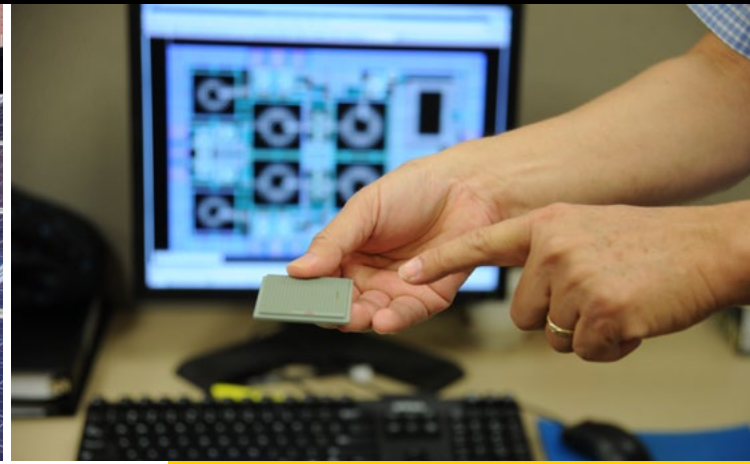
– Cong Li, Ph.D., '14
Software Engineer, Google

"My outstanding experience at UCF made it my only choice for graduate school. The extensive availability of night and online classes allows me to work full time and study."

– Walther Del Orbe, '05, '06, Master's
Student and Engineer, Lockheed Martin

"UCF has a great campus, excellent professors, advanced learning methods, modern facilities and flexible programs that allow students to acquire unique skill sets. The close proximity to Central Florida Research Park allows for networking and job opportunities."

– Assem Kaylani, Ph.D., '01, '08, Lead
Software Engineer, GE Transportation



FUNDAMENTAL AND APPLIED RESEARCH FOCUS GROUPS

COMPUTER SYSTEMS AND VLSI:

Data-intensive High Performance Computing, Massive Storage and File System, I/O Architecture
Computer Architecture and Evolvable Hardware
Secure, Trusted, and Reliable Processor and ASIC Design; Cyber Security and Cryptography

CYBER-PHYSICAL SYSTEMS (COMMUNICATION, CONTROLS, SIGNAL PROCESSING, AND ENERGY SYSTEMS):

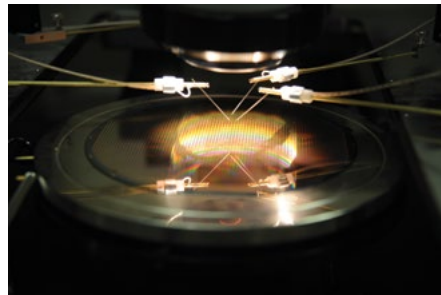
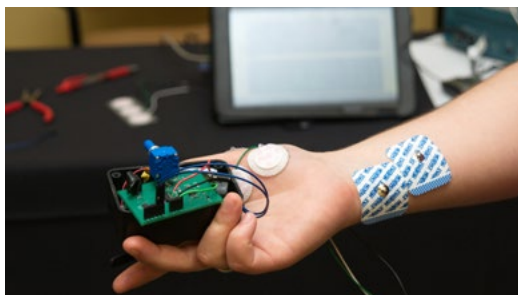
Network Systems, Cooperative Control, Optimization and Games
Autonomous Robotics Vehicles, Medical and Assistive Robotics
Smart Grids, Distributed Generation and Optimization, Protection and Control
Biomedical Devices and Control
Digital Signal Processing, Detection and Estimation
Communication Theory, Cognitive Radios and Networks, Wireless Communication and Sensor Networks
Machine Learning, Artificial Neural Networks, Distributed Decision

MICRO- AND NANO-SYSTEMS:

Micro- and Nano-Electronics, MEMS devices, Device Modeling, Acoustic Wave Devices
Power Electronics, Power Semiconductor Devices and ICs
Optoelectronic Materials, Thin Films, Micromachining

ELECTROMAGNETICS:

Microwave Sensors, Antennas, Phase Arrays and Integrated RF
Remote Sensing, Satellite Communications



RESEARCH LABORATORIES

ECE has 17 labs, including state-of-the-art Class 100/1000 Cleanroom microfabrication facilities, Remote Sensing, Nano/MEMS, Medical Robotics and Antenna, RF & Microwave Integrated Systems Labs, and Smart Grid Lab.

COMPETITIVELY-AWARDED RESEARCH CENTERS

Foundations for Engineering Education for Distributed Energy Resources (FEEDER), U.S. Department of Energy

Electric Vehicle Transportation Center (EVTC), U.S. Department of Transportation

Multi-functional Integrated System Technology (MIST), addressing the Internet of Things, National Science Foundation

ALUMNI STARS

GENE FRANTZ, EE, '71

Rice University Professor in the Practice and Principal Fellow, Texas Instruments. He invented the technology inside the Texas Instruments Speak & Spell and is considered the "father" of digital signal processing.

BRIAN CRUTCHER, EE, '95

Executive Vice President of Business Operations, Texas Instruments.

CONTACT

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ADMISSION

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