Degrees

- Ph.D. in Electrical Engineering
- Master of Science in Electrical Engineering
- Master of Engineering in Electrical Engineering

Student Composition and Diversity

U.S. News and World Report rated UTA as the 5th-most diverse university in the United States in 2017. The University is an Hispanic-serving institution and is one of the 40 most popular U.S. colleges and universities for international students, based on data from the Institute of International Education's 2014-15 Open Doors Report.

How to Apply

Begin your application for graduate admission today at:

uta.edu/admissions/graduate/apply.

Please be sure to check application deadlines and include all of the required application materials and fees.

Financial Assistance

All applications for admission will be also be considered for assistantships, fellowships, and scholarships. Complete your application early to take advantage of all opportunities for financial aid.

Who Hires Our Graduates?

Graduates of the department work at many companies in the region, including Lockheed Martin, Oncor, Raytheon, American Airlines, Atmos Energy, Baird, Hamilton and Brown, and several others.

Learn More

For more information about the Electrical Engineering Department, visit our website at **uta.engineering/ee** or contact the graduate advisor:

Steve Gibbs, Ph.D.
Master's students
817-272-7058
sgibbs@uta.edu

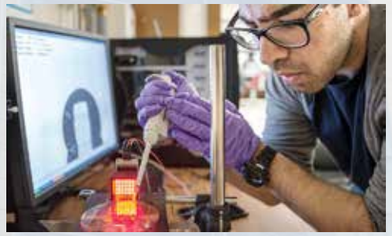
William Dillon, Ph.D.
Doctoral students
817-272-2671
dillon@uta.edu

Why Pursue a Graduate Degree at UTA?

The Electrical Engineering Department is working to develop the latest innovations in unmanned vehicle systems, sensor systems, photonics, power grids and healthcare. With access to world-class facilities like the Shimadzu Nanotechnology Research Center, our students and faculty work closely on cutting-edge technology that is changing how we responsibly and efficiently power the world around us, and how we monitor our health and well-being. We prepare our students to apply fundamental concepts in the applications of new technologies and to contribute to the growth of these technologies and employ knowledge from other disciplines in electrical engineering designs.

An Impactful Research University

The University of Texas at Arlington is rising in stature through its commitment to transforming the lives of students and pushing the boundaries of knowledge. Dramatic, measurable advancements continue to propel the University toward its goal of becoming one of the nation's premier research institutions. UTA is designated an R-1 Carnegie "highest research activity" institution. Research activity at the university has more than tripled to more than $85 million over the past 10 years, with increasing expertise in bioengineering, medical diagnostics, micro-manufacturing, and defense and Homeland Security technologies, among other areas. With a projected total global enrollment of close to 57,000 students, UTA is one of the largest universities in Texas. UTA is a first-choice university for students seeking a vibrant college experience. In addition to receiving a first-rate education, our students participate in a multitude of activities that prepare them to become the next generation of leaders.



An Ideal Location

UTA is located in the heart of the Dallas/Fort Worth Metroplex, the fourth-largest metropolitan area in the United States. Arlington is located between the cities of Dallas and Fort Worth and is a center for sporting events, tourism and manufacturing. The Metroplex has one of the highest concentrations of corporate headquarters in the United States, with corporations such as Texas Instruments, AT&T, Ericsson, Lockheed Martin, Bell Helicopter Textron, Jacobs Engineering, and many more. Also, just minutes from campus, DFW International Airport and several interstate highways allow easy access to global collaboration and commerce.

Electrical Engineering

UNIVERSITY OF TEXAS ARLINGTON | DEPARTMENT OF ELECTRICAL ENGINEERING

Graduate Faculty and Research Interests

Kambiz Alavi alavi@uta.edu
Professor and Associate Chair
Nanotechnology, MEMS, optical devices, systems

Jonathan Bredow jbredow@uta.edu
Professor and Chair
Electromagnetic fields and applications, telecommunication and information systems

Zeynep Çelik-Butler zbutler@uta.edu
Professor
Nanotechnology, MEMS, VLSI and semiconductors

Jung-Chih Chiao jcchiao@uta.edu
Janet and Mike Greene Endowed Professor
Jenkins Garrett Endowed Professor
High frequency microelectronics devices and circuits, nanotechnology, MEMS, optical devices and systems

Ali Davoudi davoudi@uta.edu
Associate Professor
Power electronics and machine drives, renewable energy systems, vehicular systems, micro-grids

Venkat Devarajan venkat@uta.edu
Professor
Digital signal and image processing

Samir Iqbal smiqbal@uta.edu
Associate Professor
Nanotechnology, MEMS, biosensors, bio-inspired fabrication

Sungyong Jung jung@uta.edu
Associate Professor
High frequency microelectronics devices and circuits, VLSI and semiconductors

George V. Kondraske kondraske@uta.edu
Professor
Digital and microprocessor/controller systems, controls and automated manufacturing

Wei-Jen Lee wlee@uta.edu
Professor
Digital and microprocessor/controller systems, power systems and industrial power electronics

Frank L. Lewis lewis@uta.edu
Professor
Moncrief-O'Donnell Endowed Chair
Feedback control and automation, cooperative decisions and game theory, robotics, nonlinear and adaptive control

Qilian Liang liang@uta.edu
Professor
Telecommunication and information systems, systems, controls and automated manufacturing, digital signal and image processing

Ramtin Madani ramtin.madani@uta.edu
Assistant Professor
Power systems, smart grids, optimal control, nonlinear optimization

Robert Magnusson magnusson@uta.edu
Professor
Texas Instruments Distinguished University Chair in Nanoelectronics
Nanophotonics

Michael T. Manry manry@uta.edu
Professor
Digital signal and image processing, neural networks and pattern recognition

Kamisetty R. Rao rao@uta.edu
Professor
Digital signal and image processing

Ioannis D. Schizas schizas@uta.edu
Assistant Professor
Statistical signal processing, wireless sensor networks, data dimensionality reduction

Yuze (Alice) Sun yuzesun@uta.edu
Assistant Professor
Optofluidic biomedical and chemical sensing, microfluidics and point-of-care devices, bio-inspired photonic devices and systems

Saibun Tjuatja tjuatja@uta.edu
Associate Professor
Electromagnetic fields and applications, telecommunication and information systems

Michael Vasilyev vasilyev@uta.edu
Professor
Nonlinear and quantum optics, optical communication systems and devices, nanophotonics

Yan Wan yan.wan@uta.edu
Associate Professor
Decentralized control, cyber-physical systems, large-scale dynamical networks, stochastic network modeling/analysis, airborne networking, air traffic flow management, sensor networking, systems biology

David A. Wetz wetz@uta.edu
Associate Professor
Pulsed power, high-voltage engineering, power electronics, power systems

Weidong Zhou wzhou@uta.edu
Professor
Optoelectronic materials and devices, microcavity photonic crystal-based semiconductor lasers and detectors, OEIC, nanophotonics-based system on a chip

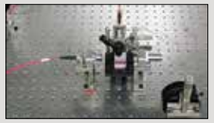
State-of-the-Art Research Facilities

Pulsed Power and Energy Lab

The Pulsed Power and Energy Lab strives to understand the challenges faced when energy storage must be integrated in as small a footprint as possible, which often demands that the energy storage be safely operated at higher than normal power rates, and developes power electronics architectures that fully utilize the full power density and energy density capabilities each energy storage device offers.

Zhou Lab

The Zhou Lab has active research projects in the areas of infrared photonics, silicon photonics, and solar cells, based on photonic crystals, semiconductor nanomembranes, quantum dots, and other nanoscale structures. The group works on all aspects of device research, including design, simulation, fabrication, and characterization.



Nanophotonics Device Group

The Nanophotonics Device Group's current focus is on theory of and experiments with periodic nanostructures, nanolithography, nanophotonics, nanoelectronics, nanoplasmonics, and optical bio- and chemical sensors.

Nano-Bio Lab

The Nano-Bio Lab focuses on the sensing and detection of biological targets and interactions using novel solid state devices. Its research aims at development of specific and ultrasensitive nanoscale biosensors and systems with the potential of characterizing biological processes at the molecular level.

Current Research

Robert Magnusson is using a $370,000 National Science Foundation grant to explore the possibility of using a novel optical resonance effect in nanostructured silicon films to generate light, which could lead to more efficient and compact integrated photonic-electric circuits.

Ioannis Schizas is working to develop a framework for a network of simple sensors that could be as powerful as a supercomputer, but smaller and less costly. The network would use many simple devices to process data that currently requires the use of a supercomputer.

Samir Iqbal has developed a novel cancer cell detection method that will improve early diagnosis through a tool that tracks cellular behavior in real time using nanotextured walls that mimic layers of body tissue.

Yuze "Alice" Sun earned a $500,000 National Science Foundation CAREER grant to develop an all-liquid optofluidic laser that could better detect cancer in the comfort of a doctor's office and be used for other biosensing applications and fundamental biological and medical research as well.

Weidong Zhou, with Sun, is using a $600,000 grant from the U.S. Army Research Office to develop a new type of ultra-thin semiconductor laser that can be integrated with mainstream electronics on the same silicon substrate with increased capacity and energy efficiency.

Ali Davoudi is leading a team that is using a $285,000 NSF grant to develop hybrid software/hardware approaches and create highly accurate models that incorporate high-frequency effects and mimic an actual power electronic hardware prototype as closely as possible, all at very high speed on a desktop platform.

J.-C. Chiao has secured nearly $5 million in research funding during his career. His work is focused on medical micro devices and microsystems, bioelectronics systems, MEMS, quasi-optical wireless systems and micro-nano-optics.

Qilian Liang has earned $6 million in research funding from the National Science Foundation, Office of Naval Research, and others for his work in fuzzy logic, radar and wireless sensor networks, and advanced communications related to 5G.

Ramtin Madani recently won the 2016 INFORMS ENRE Best Publication Award. In a series of papers, he and his colleagues have developed a mathematical foundation for solving large-scale power optimization problems.

Michael Vasilyev is part of an $8 million DARPA initiative studying advanced quantum communications. He uses multimode fiber cables to transmit information quickly and securely over great distances. He has also developed technology that restores the quality of optical signals at multiple wavelengths simultaneously without ever converting them to electrical signals.

Yan Wan has earned funding from the National Science Foundation and others to study the development of fundamental theories and tools with applications to air traffic management, airborne networking, systems biology, and complex information systems.

David Wetz is using an $801,224 Office of Naval Research grant to investigate how batteries age when they're run at high rates. He has earned more than $5 million in funding since 2011. He also was instrumental in earning UTA an affiliate partnership in Argonne National Laboratory's Joint Center for Energy Storage Research.

Frank Lewis' Advanced Controls and Sensors Group focuses on control design for robotic, aerospace and autonomous systems and has garnered more than $9 million in grants since 1990. His key contribution has been to add additional self-learning mechanisms to neural network controllers for dynamical systems, such as aircraft and robot systems, by making it possible to design and tune the neural adaptive controllers based on the patterns of use of different modes in the system.