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.
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 develops power electronics architectures that fully utilize the full power density and energy density capabilities each energy storage device offers.

Zhao Lab

The Zhao 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 the development of photonic devices and systems with the potential for integration into mainstream electronics on the same molecular level.

Nanobio Lab

The Nanobio 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.

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 as be 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.

Yaze "Alice" Sun earned a $580,000 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.

All 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 mechatronics, microsystems, and micro-nano-optics.