



ELECTRICAL AND COMPUTER ENGINEERING

Graduate Programs

PROGRAM OVERVIEW

The Division of Electrical & Computer Engineering is a leader in research, teaching, and service in a field that is crucial to the world's economy. It is the largest and most active electrical and computer engineering division at both the undergraduate and graduate levels in Louisiana. It offers both a Master of Science and Doctor of Philosophy in Electrical Engineering and has 24 full-time faculty who are leading experts in their fields, providing hands-on research experience and mentoring you throughout your graduate studies.

PROGRAM HIGHLIGHTS

- Our students conduct cutting-edge research and are published in premier journals and conferences.
- Our students receive financial support from various scholarships, fellowships, and assistantships.
- Graduate students consistently receive job offers with salaries above the national average.
- Graduate students are working at companies such as Google, Microsoft, Intel, Cisco, Qualcomm, Garmin, Entergy, and numerous universities in the United States and abroad.
- Many of our graduates are business owners, CEOs, and/or vice presidents of major corporations.

FACILITIES AND RESOURCES

- BioMEMS and Bioelectronics Lab: BioMEMS and bioelectronics devices and systems.
- CAMD (The Center for Advanced Microstructures and Devices): Synchrotron radiation source in the UV and X-ray regions.
- Cognitive Radio Lab; Wireless communication, coding, and information theory; security in wireless networks; and signal and image processing.
- Computer Architecture Lab: High-performance, energy-efficient, reliable, and secure computer design.

- EMDL (The Electronic Material and Device Lab): Semiconductor material growth and characterization, device fabrication and device measurements.
- Entergy Smart Grid & Renewable Power Lab: Synchronous generators, solar panels, and smart grid equipment for microgrid analysis and control purposes.
- Graphic & Visual Computing Lab: Three-dimensional computer graphics, vision, and visualization research.
- Information Sensing, Learning, and Security Lab: Information processing, transmission, and security.
- Micro-Biomedical Lab: Development and application of micro-scaled devices based on MEMS and microfluidic technology.
- Nanoscale Circuit Design & Integration Lab: Nanoelectronics, such as carbon nanotubes and graphene, as well as development of wireless embedded sensors.
- PreSonus Digital Signal Processing Lab: Biomedical and ultrasonic signal processing, speech processing, wireless networking, and algorithm design.

ACADEMIC COORDINATOR

Beth Cochran
225-578-5477
brobe38@lsu.edu

GRADUATE ADVISOR

Jin-Woo Choi
225-578-8764
choijw@lsu.edu

FACULTY RESEARCH AREAS

Jin-Woo Choi

choijw@lsu.edu — MEMS and BioMEMS, biosensors and bioelectronics devices, microfluidic devices and systems, lab-on-a-chip systems, nanomagnetic particle separators for biomedical applications, nanoscale transducers

Leszek Czarnecki

lczarn1@lsu.edu — power electronics, nonsinusoidal systems, network analysis and synthesis

Theda Daniels-Race

tdrace@lsu.edu — growth and characterization of bandgap engineered compound semiconductor heterojunctions, analysis of novel optoelectronic devices, characterization of hybrid electronic materials and nanostructures

Mehdi Farasat

mfarasat@lsu.edu — design, modeling, and control of power electronics converters in renewable energy and electrified transportation systems

Martin Feldman

mfeldm1@lsu.edu — applied optics, X-ray lithography, micromachining

Guoxiang Gu

ggu@lsu.edu — networked control systems and consensus control; estimation, detection, and security for distributed sensor networks; robust, optimal, and adaptive control with industrial applications

Amin Kargarian

kargarian@lsu.edu — power systems operation and planning, decentralized/distributed optimization, decision-making in smart grids, renewable energy and energy storage integration, infrastructure interdependency analyses in future power systems

David Koppelman

koppel@ece.lsu.edu — advanced computer architectures, multiprocessors, interconnection networks

Xin Li

xinli@lsu.edu — computer graphics, visualization, medical imaging, vision, geometric modeling, computer animation and simulation, virtual reality/environment, computer-aided geometric design, and human-computer interaction

Xue-Bin Liang

xbliang@lsu.edu — wireless communications, information theory, signal and image processing, neural networks, computation and complexity

Shahab Mehraeen

smehraeen@lsu.edu — power systems stability; renewable energies; smart grid; energy conversion; and nonlinear, adaptive, and decentralized control

Xiangyu Meng

xmeng5@lsu.edu — cyber-physical systems, event-triggered control/estimation/optimization, multi-agent systems, networked control systems, time-delay systems, stochastic systems, applications (green buildings, smart cities, autonomous and connected vehicles)

Morteza Naraghi-Pour

naraghi@lsu.edu — wireless communications, communication theory, telecommunication networks, signal and image processing, machine learning

Kidong Park

kidongp@lsu.edu — bioMEMS and microfluidic devices, single cell analysis, cellular biomechanics, resonant MEMS devices, bioanalytic instrumentation

Lu Peng

lpeng@lsu.edu — computer architecture, microarchitecture, memory hierarchy, reliability, power efficiency, performance analysis, network processor

Suresh Rai

srai@lsu.edu — internet, ATM, traffic modeling, digital logic testing, hardware and software reliability

J. (Ram) Ramanujam

jxr@ece.lsu.edu — optimizing compilers, high-performance computing, embedded systems, low-power computing, computer architecture

Ashok Srivastava

eesriv@lsu.edu — low-power VLSI design, nanoelectronics, RF MEMS/NEMS, microsystems

Jerry Trahan

jtrahan@lsu.edu — theory of computation, models of parallel computation, reconfigurable meshes, run-time reconfiguration, reliability, algorithm design and analysis

R. (Vaidy) Vaidyanathan

vaidy@lsu.edu — parallel and distributed computing, algorithms, reconfigurable computing and interconnection networks

Georgios Veronis

gveronis@lsu.edu — theory and simulation of photonic materials and devices, nanoscale photonic devices, plasmonics, computational electromagnetics

Shuangqing Wei

swei@lsu.edu — OFDMA networks, multiple antenna systems, communications

Hsiao-Chun Wu

hwu1@lsu.edu — statistical learning on optimization, estimation and detection applications, embedded algorithms for digital signal processing, speech and image processing, wireless communications

Jian Xu

jianxu1@lsu.edu — biomedical instrumentation, bio-nanoelectronics, image-guided surgery, biomedical imaging

Xiangwei Zhou

xwzhou@lsu.edu — wireless communications, statistical signal processing, cross-layer optimization, and cognitive radio and spectrum coexistence