

# Electrical & Systems Engineering

Phone: 314-935-5565  
Website: <https://ese.wustl.edu/academics/undergraduate-programs/index.html>

## Faculty

### Chair

#### **Bruno Sinopoli**

Das Family Distinguished Professor  
PhD, University of California, Berkeley  
Cyberphysical systems, analysis and design of networked embedded control systems, with applications to sensor actuators networks

### Endowed Professors

#### **Shantanu Chakrabarty**

Clifford W. Murphy Professor  
Vice Dean for Research and Graduate Education  
PhD, Johns Hopkins University  
Explores frontiers in analog and neuromorphic integrated circuits

#### **Jr-Shin Li**

Newton R. and Sarah Louisa Glasgow Wilson Professor of Engineering  
PhD, Harvard University  
Mathematical control theory, optimization, quantum control, biomedical application

#### **Joseph A. O'Sullivan**

Samuel C. Sachs Professor of Electrical Engineering  
Dean, UMSL/WashU Joint Undergraduate Engineering Program  
PhD, Notre Dame University  
Information theory, statistical signal processing, imaging science with applications in medicine and security, and recognition theory and systems

#### **Lan Yang**

Edward H. & Florence G. Skinner Professor of Engineering  
PhD, California Institute of Technology  
Nano/micro photonics, ultra high-quality optical microcavities, ultra-low-threshold microlasers, nano/micro fabrication, optical sensing, single nanoparticle detection, photonic molecules, photonic materials

### Professors

#### **Neal Patwari**

Professor  
PhD, University of Michigan  
Intersection of statistical signal processing and wireless networking for improving wireless sensor networking and radiofrequency sensing

### Associate Professors

#### **Xudong Chen**

PhD, Harvard University  
Develops revolutionary methods for analysis and control of large-scale multi-agent systems

#### **ShiNung Ching**

PhD, University of Michigan  
Systems and control in neural medicine, nonlinear and constrained control, physiologic network dynamics, stochastic control

#### **Andrew Clark**

PhD, University of Washington  
Focused on control and security of networked and cyber-physical systems

#### **Ulugbek Kamilov**

PhD, École Polytechnique Fédérale de Lausanne, Switzerland  
Advances imaging technology through research on computational imaging, computer vision, machine learning and optimization

#### **Matthew D. Lew**

PhD, Stanford University  
Microscopy, biophotonics, computational imaging, nano-optics

#### **Jung-Tsung Shen**

PhD, Massachusetts Institute of Technology  
Theoretical and numerical investigations on nanophotonics, optoelectronics, plasmonics, metamaterials

#### **Chuan Wang**

PhD, University of Southern California  
Flexible electronics, stretchable electronics, printed electronics, nanomaterials, nanoelectronics, optoelectronics

### Assistant Professors

#### **Ioannis (Yiannis) Kantaros**

PhD, Duke University  
Designs safe and distributed autonomy algorithms for large-scale multi-robot systems

#### **Mark Lawrence**

PhD, University of Birmingham  
Nanophotonics, nonlinear optics, metasurfaces

#### **Aravind Nagulu**

PhD, Columbia University  
Pioneering the area of novel wave propagation based on time-variance

#### **Janet Sorrells**

PhD, University of Illinois at Urbana-Champaign  
Developing new technologies in label-free nonlinear optical microscopy to enable new applications in biology and medicine

#### **Shen Zeng**

PhD, University of Stuttgart  
Systems and control theory, data-based analysis and control of complex dynamical systems, inverse problems, biomedical applications

## Senior Professors

### Paul S. Min

PhD, University of Michigan  
Routing and control of telecommunication networks, fault tolerance and reliability, software systems, network management

### Robert E. Morley Jr.

DSc, Washington University in St. Louis  
Computer engineering, lower-power VLSI design, computer architecture, signal processing, microprocessors systems design

### Hiro Mukai

PhD, University of California, Berkeley  
Theory and computational methods for optimization, optimal control, systems theory, electric power system operations, differential games

### Daniel L. Rode

PhD, Case Western Reserve University  
Optoelectronics and fiber optics, semiconductor materials, light-emitting diodes and lasers, semiconductor processing, electronics

### Ervin Y. Rodin

PhD, University of Texas at Austin  
Optimization, differential games, artificial intelligence, mathematical modeling

### Heinz Schaettler

PhD, Rutgers University  
Optimal control, nonlinear systems, mathematical models in biomedicine

### Barbara A. Shrauner

PhD, Harvard University (Radcliffe)  
Plasma processing, semiconductor transport, symmetries of nonlinear differential equations

### Barry E. Spielman

PhD, Syracuse University  
High-frequency/high-speed devices, radiofrequency and microwave integrated circuits, computational electromagnetics

### Tzyh Jong Tarn

DSc, Washington University  
Quantum mechanical systems, bilinear and nonlinear systems, robotics and automation, life science automation

## Professors of Practice

### Dennis Mell

MS, University of Missouri–Rolla  
Industrial automation, robotics and mechatronics, product design and development with design-for-manufacturability emphasis, prototyping, manufacturing

### Ed Richter

MS, Washington University  
Signal processing applications implemented on a variety of platforms, including ASIC, FPGA, DSP, microcontroller and desktop computers

### Jason Trobaugh

DSc, Washington University  
Ultrasound imaging, diffuse optical tomography, image-guided therapy, ultrasonic temperature imaging

## Teaching Professor

### James Feher

PhD, Missouri University of Science and Technology  
Electrical engineering, computer science, mathematics and physics

## Senior Lecturers

### Martha Hasting

PhD, Saint Louis University  
Mathematics education

### Vladimir Kurenok

PhD, Belarus State University (Minsk, Belarus)  
Probability and stochastic processes, stochastic ordinary and partial differential equations, financial mathematics

### Tsitsi Madziwa-Nussinov

PhD, University of California, Los Angeles

### Jinsong Zhang

PhD, University of Miami  
Modeling and performance analysis of wireless sensor networks, multi-source information fusion, ambiguous and incomplete information processing

## Lecturers

### Dorothy Wang

PhD, Virginia Tech  
Fiber optic sensing and practical experience in sensor implementation and field test

### Ben Wormleighton

PhD, University of California, Berkeley  
Seeks to cultivate formative learning spaces and practices that develop creative and communal thinkers.

## Professors Emeriti

### R. Martin Arthur

Newton R. and Sarah Louisa Glasgow Wilson Professor of Engineering  
PhD, University of Pennsylvania  
Ultrasonic imaging, electrocardiography

### Arye Nehorai

The Eugene & Martha Lohman Emeritus Professor of Electrical Engineering  
PhD, Stanford University  
Statistical signal processing, machine learning, imaging, biomedicine