
FACULTY RESEARCH PROFILES

2021-2022

**DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING
AT
UNIVERSITY OF CENTRAL FLORIDA**



FACULTY RESEARCH PROFILES ELECTRICAL & COMPUTER ENGINEERING

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INTRODUCTIONS TO ECE RESEARCH

Welcome to Electrical and Computer Engineering (ECE) at the University of Central Florida! ECE's vision is to offer the best undergraduate and graduate education in electrical and computer engineering, to achieve national and international prominence in fundamental cutting-edge research, to proactively contribute to the diversity and strength of an engineering workforce, and to foster partnerships and contribute to technological and economical advances in the State of Florida, the nation, and the world. Through delivering research-based education to our students and facilitating technology transfers, ECE continues to undertake research endeavors that generate new knowledge and support technology advances as well as economic growth. This fundamental research exploration is attained by means of our highly talented students, dedication and passion of our faculty, state-of-the-art facilities, and quality educational programs. ECE research is categorized into the following four focus groups, each consisting of several areas:

- *Computer Systems and Architecture*
 - 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)*
 - Networked Systems, Cooperative Control, Optimization and Games
 - Autonomous Robotic 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 and Sensing*
 - Microwave Sensors, Antennas, Phased Arrays, and Integrated RF
 - Remote Sensing, Satellite Communications

In this booklet, research profiles of individual ECE faculty are included. Separately, annual reports detailing research accomplishments are available upon request.

Thank you for your interests in and support of ECE students, faculty, and their research. You are cordially invited to visit us at your convenience. For more information, please visit our web site at www.ece.ucf.edu or contact the ECE office at (407) 823-5942.

Murat Yuksel
Interim Chair, Department of ECE

DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

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ELECTRICAL & COMPUTER ENGINEERING

FACULTY RESEARCH PROFILES



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Associate Professor
Ph.D., Electrical Engineering
Georgia Institute of Technology, 2008



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Research Interests

- *Micro- and Nano-Electromechanical Systems (MEMS/NEMS)*
- *Micro-resonators for timing and data processing*
- *Resonant Sensors*
- *Micro-acoustics*
- *Infrared Sensing and Projection*
- *Micro-fabrication*

Professional Activities

- Associate Chair
- Lead faculty at the UCF central cleanroom operation
- Frequent NSF panel reviewer
- Technical Program Committee member in IEEE IFCS
- Technical reviewer for several journals including IEEE Transaction on Ultrasonics, Ferroelectrics, and Frequency Control, IEEE Journal of Micro-Electro-Mechanical (JMEMS), IEEE Transaction on Electron Devices, Journal of Sensors and Actuators

Honors & Awards

- *UCF Research Incentive Award* (2020)
- *UCF Teaching Incentive Program Award* (2019)
- *Excellence in Undergraduate Teaching Award* (2018)
- *Granted 12 US patents*

Ongoing Research Projects

- Acousto-Electric Amplification in Composite Piezoelectric-Silicon resonant Cavities (NSF)
- Ultra-stable MEMS Oscillators (Intel)
- Acoustic Clock Distribution (Intel)
- Piezoelectrically-Actuated Micro-Mirrors (Truventic/Airforce)
- Thermoelectric THz Sensors (Truventic)

Mahdi Assefzadeh
Assistant Professor
Ph.D., Electrical and Computer Engineering
Rice University, 2018



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Research Interests

- *Bandwidth-scalable architectures for high-frequency integrated transceivers*
- *High-frequency nonlinear interferometers for ultrahigh-speed analog signal processing*
- *Terahertz (THz) spectral sensing and imaging*
- *Hybrid electronic-photonic integrated systems*

Professional Activities

- Technical reviewer for IEEE Transactions on Microwave Theory and Techniques, Journal of Solid-state Circuits, Transactions on Antennas and Propagation: IEEE Sensors Journal, Nature Communications, Nature Scientific Reports

Honors & Awards

- *IEEE SSCS Predoctoral Achievement Award* (2018)
- *Best paper award* (1st place) in IEEE Radio and Wireless Symposium (2016)
- *Best paper award* (1st place) in IEEE International Microwave Symposium (2014)

Ongoing Research Projects

- Silicon-based picosecond electronic waveform shaping and processing
- Fully integrated THz transceivers based on time-domain holography
- Cavity-enhanced millimeter-wave Doppler radar

George Atia**Associate Professor**

Ph.D., Electrical and Computer Engineering
Boston University, 2009

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**Research Interests**

- *Robust machine learning*
- *Verifiable and explainable AI*
- *Signal processing and statistical learning*
- *Optical and brain signal processing*
- *Security of cyber-physical systems*

Professional Activities

- Associate Editor, IEEE Transactions on Signal Processing
- Technical Committee Chair, Machine Learning for Signal
- Processing track, ICASSP
- Senior Member, IEEE
- Program Committee Member, NeurIPS, ICML, AAAI, AISTATS, ICLR
- Technical Committee Member, Machine Learning for Signal Processing (MLSP)
- NSF Panel Reviewer

Ongoing Research Projects

- Emerging Directions in Robust Learning and Inference (NSF)
- Building Intelligence with Layered Defense (DOE)
- Inference-Driven Data Processing and Acquisition: Scalability, Robustness and Control (NSF)
- Development of Diffraction-Free Space-Time Optical Beams (ONR)

Issa Batarseh**Professor**

Ph.D., Electrical Engineering University of
Illinois at Chicago, 1990

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**Research Interests**

- *Power Electronics*
- *Energy Conversion*
- *Grid-tied Inverters*
- *Smart Distributed Solar Energy*
- *Photovoltaics (PV) Systems*

Professional Activities

- Director of the Florida Power Electronics Center
- NASA Power Technical group Member
- Served as panelist, and reviewer for NSF, DoE, NASA and several IEEE Transaction and other international journals
- Served as General Chair for IEEE-PESC'07 and SOUTHEASTCON'98 conferences
- Served as IEEE Orlando Section Chair
- Technical program committee chair of IEEE APEC, PESC, IECON, IAS and ISCAS Registered Professional Engineer, Florida

Honors & Awards

- *UCF Pegasus Professor*, 2021
- *IEEE PELS David Middlebrook Achievement Award*, 2019
- *Florida Inventors Hall of Fame, Inductee*, 2017
- *National Academy of Inventors (NAI) Fellow*, 2016
- *Research Incentive Award*, 2011, 2015
- *FES Outstanding Technical Achievement Award*, 2017 AAAS Fellow, 2009
- *IEEE Fellow*, 2005
- *IEEE Power Electronics Society, IEEE Transactions on Power Electronics Prize Paper Award David Productivity*
- *Award for Best Invention, given by the State of Florida*, 2004

Ongoing Research Projects

- Hybrid Inverter Design
- High-Density Soft-Switching Multi-Port Photovoltaic Power Manager
- Integrated Solar energy with Storage
- Florida Energy Systems Consortium (State of Florida)

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Ph.D., Electrical Engineering
Clemson University, 2001

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Research Interests

- *Robotics*
- *Wheelchair Mounted Assistive Robotic Arms*
- *Autonomous and Semi-Autonomous Control*
- *Human Robot and Human Computer Interaction*
- *Applications of Computer Vision*
- *Applied Nonlinear Controls*

Professional Activities

- Associate Editor, IEEE Transactions on Control Systems Technology
- Associate Editor, Journal of Aerospace Engineering
- Associate Editor, MDPI Robotics
- Proposal Reviewer for NSF, NIDILRR, NIH, NASA, NMSS

Honors & Awards

- *Full Member, Sigma Xi, The Scientific Research Honor Society*
- *Senior Member – IEEE*
- *Charles N. Millican Faculty Fellow, 2016*
- *UCF Millionaires Club, 2015*

Ongoing Research Projects

- CHS: Small: Empowerment of Disabled Individuals via an Adaptive Framework for Indirect Human-Robot Interaction (NSF)
- CHS: Medium: Collaborative Research: Social Learning in Mixed Human-Robot Groups for People with Disabilities (NSF)

Kenle Chen
Assistant Professor
Ph.D., Electrical Engineering
Purdue University, 2013

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Research Interests

- *Radio frequency and millimeter-Wave integrated circuits*
- *Future-generation (5G) wireless communication systems*
- *High-speed, wideband, and high-efficiency radio solutions*
- *Reconfigurable high-frequency circuits*
- *Interdisciplinary applications of radio technology*

Professional Activities

- Associate Editor: IEEE Transactions on Microwave Theory and Techniques
- Chair: IEEE MTT-S/AP-S Orlando Chapter
- Active Referee: 15 International Journals, e.g., TMTT, MWCL, TCAS-I, TCAS-II, and TBioCAS.
- TPC Member: WAMICON
- TPRC Member: IMS, WAMICON
- Conference Session Chair: IMS, WAMICON

Honors & Awards

- *1st Place Best Paper Award, IEEE International Microwave Symposium (2020)*
- *1st Place Winner in IEEE MTT-S Student Design Competition (2018, 2019, 2020 as advisor)*
- *IEEE WAMICON Best Student Paper Award (2019, as advisor)*
- *IEEE MTT-S Doctoral Fellowship (2012)*
- *IEEE MTT-S Design Competitions Winners (2011, 2012)*

Ongoing Research Projects

- Linear, efficient, and wideband RF PAs/transmitters for 5G and beyond (NSF ECCS)
- High-efficiency millimeter-Wave power amplifiers and transmitters (NSF I-UCRC)
- Mode-reconfigurable RF power amplifiers (internally funded)
- Advanced carrier-aggregation and MIMO radio-frontend architectures (internally funded)

Ronald F. DeMara
Pegasus Professor
Ph.D., Computer Engineering
University of Southern California, 1992

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Research Interests

- *Computer Systems Design and Architecture*
- *Emerging Computing Devices for Machine Learning*
- *Adaptive and Reconfigurable Hardware*

Professional Activities

- Associate Editor of IEEE Transactions on Emerging Topics in Computing
- IEEE Spectrum Editorial Advisory Board Member
- Keynote: IEEE International IOT, Electronics, and Mechatronics Conference.
- Technical Program Committee member of IEEE Annual Symposium on VLSI, IEEE Non-Volatile Memory Systems and Application Symposium (NVMSA)
- NSF Panelist and Reviewer for various IEEE/ACM/ASEE journals and conference

Honors and Awards

- *Excellence Doctoral Mentoring* (University-Level, 2020)
- *Best poster award of the conference: 29th ACM Great Lakes Symposium on VLSI* (2019)
- *Online Learning Consortium (OLC) Effective Practice Award* (2018)
- *Marchioli Collective Impact Award* (2017)
- *Scholarship of Teaching & Learning Award* (2017, 2008)
- *Teaching Incentive Award* (2017, 2006, 2001, 1996)
- *Excellence in Undergraduate Teaching* (2017)
- *Research Incentive Award* (2009, 2004)
- *IEEE Outstanding Engineering Educator – Region 3* (2008)

Ongoing Research Projects

- Probabilistic Spin Logic for Low-Energy Boolean and Non- Boolean Computing (NSF, 2017-2021)
- Probabilistic Spin Circuits & Benchmarking (Semiconductor Research Corporation (SRC), 2017-2021)
- Cross-layer Adaptive Rate/Resolution Design for Energy-Aware Acquisition of Spectrally Sparse Signals Leveraging Spin-based Devices (NSF, 2018-2022)
- Building Undergraduate Capacity in STEM at a Hispanic Serving Institution utilizing Culturally Relevant Instruction with Micro-Credentialing (NSF, 2019-2023)
- Edge-Based Machine Intelligence Architecture for In-Situ Video Processing using Binarized Neural Network (ARO, 2019-2022)

Aleksandar Dimitrovski
Associate Professor
Ph.D., Power Engineering
Saints Cyril and Methodius University, 1997

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Research Interests

- *Modeling and Analysis of Uncertain Power System*
- *Magnetic-Electronic Power Controllers*
- *Parallel Simulation of Large Power Systems*
- *Power System Protection*
- *Microgrid Protection and Control*
- *Ongoing Research Projects*
- *D-CVSR: Continuously Variable Series Reactor for Distribution Applications (US DOE)*
- *Power System Parallel Dynamic Simulation Framework (US DOE)*
- *Secure and Resilient Operations Using Open-Source Distributed Systems Platform (US DOE)*
- *Protection of Networked Microgrids (US DOE)*

Professional Activities

- IEEE Senior Member
- Member of CIGRE (International Council on Large Electric Systems)
- Reviewer for IEEE Transactions on: Power Systems, Power Delivery, Smart Grid, Sustainable Energy; IEEE Systems Journal; IEEE Power Engineering Letters; IET: Generation, Transmission, Distribution; International Journal of Electric Power and Energy Systems

Honors and Awards

- *Fulbright Scholar* (2016)
- *R & D 100* (2014)

Chinwendu Enyioha
Assistant Professor
Ph.D., Electrical & Systems Engineering
University of Pennsylvania, 2014

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Research Interests

- *Distributed optimization, decision control over networks*
- *Resource-aware computation in spatially distributed systems*
- *Safety and security in Cyber-physical systems (CPSs)*

Professional Activities

- Session Co-Chair, IEEE Conference on Control Technology and Applications, 2021
- Member, Technical Program Committee, International Conference on Cyber-Physical Systems 2020
- Session Chair, IEEE American Control Conference (2018)
- Invited session organizer and co-chair, IEEE American Control Conference (2016)
- Technical Reviewer for several IEEE/ACM conferences and journals including the IEEE Transactions on Automatic Control (TAC), Transactions on Network Science and Engineering (TNSE), Transactions on Control of Networked Systems (TCNS), Journal of Optimal Control, Applications and Methods, amongst others
- Member, IEEE and SIAM.

Honors and Awards

- *Faculty Fellow, U.S. Air Force Research Lab Summer*
- *Faculty Fellowship Program*
- *Fellow, Ford Foundation* (administered by the NRC of the National Academies)
- *William Fontaine Scholar, University of Pennsylvania*

Ongoing Research Projects

- Resource Management with Limited Communications in CPNs
- Distributed Estimation and Learning for Autonomous Unmanned Systems
- Adaptive and Resilient Autonomy for Unmanned Autonomous Systems

Rickard Ewetz
Assistant Professor
Ph.D., Electrical and Computer Engineering
Purdue University, 2016

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Research Interests

- *Design Automation for Emerging Computing Paradigms*
- *Security of Artificial Intelligence (AI) and Machine Learning (ML)*
- *Computer-aided Design (CAD) for Very Large-Scale Integration (VLSI)*
- *Secure Non-Volatile Memory Systems*

Professional Activities

- National Science Foundation (NSF)
- Department of Energy (DOE)
- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)
- ACM Design Automation of Electronic Systems (TODAES)
- Design Automation Conference (DAC)
- International Conference on Computer-Aided Design (ICCAID)

Honors and Awards

- *Best Paper Nomination at Design Automation and test in Europe Conference (DATE), 2020.*
- *Best Paper Nomination at Asia and South Pacific Design Automation Conference (ASP-DAC), 2019.*
- *Foundation of the Future, Stockholm, Sweden stipend award (2012, 2014)*

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University of British Columbia, 2007

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Research Interests

- *Machine Learning and Cooperative Artificial Intelligence*
- *(AI) for Automated Vehicle Perception and Planning*
- *Cooperative Driving in Mixed Autonomy Using Deep*
- *Reinforcement Learning*
- *Networked Cyber-Physical Systems: Modeling Hybrid Systems*
- *Intelligent Transportation Systems:*
- *Connected and Automated Vehicles, Electric Vehicles*
- *Wireless Communication and Networking*
- *Smart Cities, Transportation and Energy Systems*

Professional Activities

- Associate Editor, IEEE Transactions on Vehicular Technology
- Chair, IEEE Connected and Automated Vehicles Symp., 2018 and 2019, 2020
- Chair, Program Committee, IEEE International Symposium on Wireless Vehicular Comm., WiVEC 2011, 2014
- Steering Committee Member, IEEE Connected Vehicle Initiative (VTS)
- Workshop Chair, IEEE Cyber Science and Tech. Conf. 2017
- Chair, IEEE Workshop on V2X Communication: Applications and Technology, Oct. 2015
- Co-Chair, Technical Program Committee, Conference on Smart Urban Mobility Services (SUMS) 2015

Honors and Awards

- *Research Incentive Award-UCF* (2020)
- *Best paper award-VTC 2020 Fall-paper on cooperative Lidar object detection*
- *Outstanding Researcher Award - West Virginia University, College of Engineering* (2016)
- *NSF Career Award* (2015)
- *NSERC Canada Post-Doctoral Fellowship* (2008)
- *Bell Canada Graduate Award* (2005)

On-going research projects:

- CAREER: Multi-Resolution Model and Context Aware Information Networking for Cooperative Vehicle Efficiency and Safety Systems, National Science Foundation, NSF CAREER – PI
- CV2X (Cellular V2S) Communication for connected and automated vehicles. (Ford-PI)
- Perceptive Stochastic Coordination in Mass Platoons of Automated Vehicles, collaborative project with Univ. of Georgia, University Hamburg and University Koblenz-Landau, NSF -PI
- Cooperative Vehicle Safety Emulations, Ford Motor co. PI
- Driver Messenger Systems, (Honda Research America-PI)

Michael Georgiopoulos
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Ph.D., Electrical Engineering
University of Connecticut, 1986

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Research Interests

- *Machine Learning*
- *Pattern Recognition*
- *Applications of Machine Learning*

Professional Activities

- Senior Member IEEE

Honors & Awards

- *UCF Undergraduate Student Mentor of the Year Award* (2009- 2010)
- *Scholarship of Teaching and Learning (SoTL) Award* (2009-2010)
- *UCF Pegasus Award* (2010)
- *College of Engineering TIP (Teaching Incentive Productivity) Award* (1995, 2000, 2005)
- *RIA, Research Incentive Award* (2005)
- *UConn Academy of Engineering* (2014)

Ongoing Research Projects

- Collaborative Research: RET in Engineering and Computer Science Site: Research Experiences for Teachers focused on Applications of ImagEs and SiGnals in High Schools (NSF)
- UCF COMPASS: Convincing Outstanding-Math-Potential Admits to Succeed in STEM (NSF)
- CAMP-YES (Career Advancement Young Entrepreneur and Scholar (YES) Scholarship Program (NSF)
- Flit-Path, Collaborative Research: Florida-IT Pathways to Success (NSF)

Xun Gong
Professor
Ph.D., Electrical Engineering
University of Michigan, 2005

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Research Interests

- *Microwave Filters and Passive Components*
- *Wireless passive sensors for harsh environment applications*
- *Antennas, phased arrays, and reflectarrays*
- *Flexible electronics*
- *Micromachining*
- *Advanced packaging*
- *Ceramic materials, polymer materials, and ferroelectric materials & Material characterization*

Professional Activities

- MTT-S Elected AdCom Member, 2021-2023
- General Chair: 2012 WAMICON and 2016 iWAT
- ExCom Member: IMS, WAMICON, SiRF, IMBioC
- TPC Chair: AP-S/URSI Int. Symp., RWS, WAMICON, SiRF, iWAT
- TPC Member: AP-S/URSI Int. Symp., IMS, RWS, WAMICON, SiRF, WiSNET, EuCAP, EuMW, IMBioC
- Editor: IEEE TMTT, IEEE MWCL, IET MAP Special Issue, IEEE Microwave Magazine Special Issue
- IEEE AP/MTT Orlando Chapter Chair, 2007-2010
- IEEE Orlando Section Awards Chair (2012-2013), Chair (2011), Vice Chair (2009-2010), and Secretary (2008)

Honors & Awards

- *UCF Lockheed Martin Professorship* (2018-2023)
- *UCF Reach for the Stars Award* (2016)
- *UCF Research Incentive Award* (2011, 2016, 2021)
- *UCF Teaching Incentive Program Award*: (2010, 2015)
- *UCF CECS Distinguished Researcher Award* (2013)
- *UCF CECS CAE Link Faculty Fellow* (2010-2012)
- *NSF Faculty Early Career Award* (2009)

Ongoing Research Projects

- Directional Software-Defined Radio (NSF)
- Integrating High Frequency Whispering – Gallery Mode Phononic Cavities with Efficient Electrically Small Antennas: Pushing the Limits of Wireless Passive Sensing (NSF)
- High Temperature Wireless Sensors (DoE)

Zhishan Guo
Assistant Professor
Ph.D., Computer Science
University of North Carolina at Chapel Hill, 2016

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Research Interests

- *Modeling and analysis of real-time systems*
- *Machine learning theory and neural networks*
- *Applications in cyber-physical systems and cyber-human/health system*

Professional Activities

- Senior Member of IEEE and Member of ACM
- NSF review panelist
- TPC track chair of Design Automation Conference (2022)
- TPC member of numerous IEEE/ACM conferences including: RTSS, AAAI, EMSOFT, RTAS, etc.
- Reviewer of numerous journals including: TNNLS, TVT, TCAD, TETCI, TC, TPDS, TIFS, TKDE, TECS, JSA, IPL, JoSH, etc.

Honors & Awards

- *Best Paper Award*, EMSOFT 2020.
- *Best Student Paper Award*, RTSS 2019.
- *Outstanding Paper Award*, RTSS 2019.
- *Outstanding Teaching Award*, CS Department, UNC-Chapel Hill (2015)

Ongoing Research Projects

- CRII: NeuroMC – Parallel Online Scheduling of Mixed- Criticality Real-Time Systems via Neural Networks (NSF)
- RAISE:CA-FW-HTF: Prepare the US Labor Force for Future Jobs in the Hotel and Restaurant Industry: A Hybrid Framework and Multi-Stakeholder Approach (NSF)
- CPS: Collaborative Research: Trusted CPS from Untrusted Components (NSF)
- RumorHunt: A Next-Generation Online Scalable Streaming System for Early Rumor Detection (Cyber-Florida)
- Development of Rehabilitation Integrated Real-Time Control Ankle Foot Orthosis Algorithm (Korean Gov.)
- F1/10 Autonomous Racing Robots (NSF-REU & Internally Funded)
- PPOSS: Scalable Memory and Storage Management via Neural Networks (NSF)

W. Linwood Jones**Professor**

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VA Polytechnic Institute & State University,
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**Research Interests**

- *Satellite Microwave Remote Sensing for Ocean,*
- *Atmosphere and Global Climate Change*
- *Microwave remote sensor technology development*
- *Active (radar) and passive (radiometry) microwave sensor concepts*
- *Microwave scatterometry, polarimetric radiometry, and synthetic thinned array radiometry*
- *On-orbit Inter-satellite instrument radiometric calibration*
- *Geophysical retrieval algorithm development: ocean vector winds and precipitation in tropical cyclones and sea surface salinity*
- *Microwave radiative transfer model development*
- *Airborne & satellite microwave remote sensor computer simulation*

Professional Activities

- Life Fellow, IEEE
- Geoscience and Remote Sensing Soc,
- Ocean Engineering Soc, Antennas and Propagation Soc.
- Microwave Theory and Tech Soc.
- Member American Geophysical Union (AGU), American Meteorological Society (AMS)
- Member - Union of Radio Scientists International (URSI), Commission-F

Honors & Awards

- *IEEE JSTARS Best Reviewer Award, 2016*
- *NASA PMM Science Team Award, 2015*
- *Alan Berman Research Pubs Award, US Naval Research Lab, 2004*
- *4 NASA Special Achievement Awards and 12 Group Achievement Award, 1981-2016*
- *CNES Space Medal, 1993*

Ongoing Research Projects

- Investigation of Rain-Induced Oceanic Surface Salinity
- Stratification for SMAP
- Inter-satellite Radiometric Calibration (XCAL) for GPM Constellation
- Investigation of Ionospheric Impacts on GPS signals
- Improved Satellite Active/Passive Ocean Vector Wind Retrievals
- Observations of Ocean Surface Wind Speed and Rain Rate with the Hurricane Imaging Radiometer

Brian Kim**Assistant Professor**

Ph.D., Biophysics
Cornell University, 2013

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**Research Interests**

- *Low-noise analog circuit design*
- *CMOS biosensors and actuators*
- *Brain-Machine Interface*
- *Single-cell Electrophysiology*
- *Point-of-care Medical Diagnostics*

Professional Activities

- Biophysical Society Member
- Biomedical Engineering Society Member
- IEEE Member
- Served as NSF panelist in 2017 and 2018
- Served as NIH study section member in 2021
- Technical Referee for: IEEE Transactions on Biomedical Engineering, IEEE Transactions on Biomedical Circuits and Systems, IEEE Transactions on Instrumentations and Measurements, IEEE Circuits and Systems Magazine, Analytical Chemistry, PLOS ONE, Microelectronic Engineering Scientific Report, Lab on a Chip

Ongoing Research Projects

- Simultaneous high-density mapping of synaptic Neurochemical transmissions and action potential in large neural network, sponsored by NSF ECCS/CCSS
- Lyme iDS: An Innovative Point-of-Care System for Reliable Diagnosis of Lyme Disease, sponsored by Global Lyme Alliance (GLA)
- Multiplexed rRT-PCR detection of Zika, dengue and Chikungunya directly from whole blood using an innovative, Sponsored by NIH/NIAID
- Massive Parallel Biosecurity and Bio-Computing Research Using In Vivo Neurotransmitters and Synaptic Transmission, Sponsored by the Air Force Office of Scientific Research (AFOSR)
- Point-of-care detection of TB and NTM pathogens with Fluorescent Deoxyribozyme Sensors and 3D-printed, Battery powered device, sponsored by NIH/NIAID

Qifeng Li
Assistant Professor
Ph.D., Electrical Engineering
Arizona State University, 2016

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Research Interests

- *Convex/global Optimization*
- *Nonlinear Systems*
- *Power and Energy Systems*
- *Demand Side Management*
- *Networked Microgrids*
- *Distributed Energy Storage*
- *Grid Integration of Renewable Energy*
- *Distribution System Optimization*
- *Energy-Water-Food Nexus*

Professional Activities

- Editor for CSEE Journal on Power and Energy Systems
- Chair of penal session in INFORMS Annual Meeting 2019 for Recent Development in Optimization of Grid-connected Battery Energy Storage Systems
- Member IEEE Battery Energy Storage Work Group
- Professional referee for a number of top-tier journals to include IEEE Transactions on Power Systems, Smart Grid, Sustainable Energy, Control of Network Systems, Industrial Informatics, IEEE Power and Energy Letters, and IEEE Control System Letters

Honors & Awards

- *IEEE Senior Member*
- *China National Scholarship* 2012

Ongoing Research Projects

- Temporal-Spatial Control of Electric-Driven Water Facilities for Renewable Energy Management under Combinatorial Operation Modes of Contingency Response and Nexus, U.S. National Science Foundation, Principal Investigator
- Stability, security, and emergency control for reconfigurable networked microgrids, U.S. National Science Foundation, UCF-Principal Investigator
- Coordination of Transmission, Distribution and Communication Systems for Prompt Power, U.S. Department of Energy, UCF-Principal Investigator

Mingjie Lin
Associate Professor
Ph.D., Electrical Engineering
Stanford University, 2008

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Research Interests

- *FPGA High-Level Synthesis in memory optimization*
- *Hardware acceleration in machine learning and AI*
- *Hardware security within the domain of FPGA and CPU micro-architecture*

Honors & Awards

- *UCF Rising Star* 2017
- *UCF Teaching Incentive Program Award* 2017
- *NSF CAREER award* 2016

Ongoing Research Projects

- CAREER: iIMPACT: Metaphysical and Probabilistic-Based Computing Transformation with Emerging Spin-Transfer Torque Device Technology
- Novel Hardware-Support for Ensuring Confidentiality and Integrity on Emerging Non-Volatile Memories
- SHF:Small: Graph-X: Exploiting Hidden Parallelism of Irregular and Non-Stencil Computation in High-Level Synthesis

Wasfy B. Mikhael
Professor
Ph.D., Electrical Engineering
University of Concordia, 1973

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Research Interests

- *Digital Signal Processing*
- *Adaptive Signal Processing*
- *One and Multidimensional Signal Compression*
- *Filtering with Applications such as Speaker Recognition*
- *Image Classification/recognition*
- *Interference Cancellation in Wireless Communications*
- *Multi-Signal Fusion*

Professional Activities

- Has more than 400 refereed publications
- Holds several patents in his field
- Serves on editorial boards
- Chaired several international, IEEE and other conferences
- Served as VP for the IEEE Circuits and Systems Society
- Chair of the IEEE Midwest Symposium on Circuits and Systems steering committee membership

Honors & Awards

- *Fellow, IEEE*, 1987
- *UCF, CECS Teaching Incentive Award (TIP)*, April, 2021, April, 2016, April 2011, April 2006, April 2000, 1994
- *UCF, CECS Graduate Teaching Award*, 2006
- *UCF Undergraduate Teaching Award*
- *UCF, CECS Research Incentive Award*, 2005, 1993
- *Best Paper Awards from International Conferences*, 2015, 2014
- *Professional Societies Awards*, 2014, 2013
- *Inducted as a member, "National Academy of Inventors"*, In recognition of advanced technological development and innovation as issued by the "United State of America Patent and Trademark Office", November 30, 2017.

Ongoing Research Projects

- DSP Application for Facial Recognition, Human Action Recognition, Biometric Signals Machine Learning, etc.

Zhihua Qu
Professor of ECE
Director of University Research
Center on Resilient, Intelligent and
Sustainable Energy System (RISES)
Ph.D., Electrical Engineering
Georgia Institute of Technology, 1990



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407-823-5976
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Research Interests

- *Systems Theory and Control*
- *Optimization and Control of Networked Dynamical Systems*
- *Distributed Control and Optimization for Smart Grid*
- *Autonomous, Unmanned, and Cooperative Systems*
- *Medical Robotics*

Professional Activities

- Inaugural member, Standing Council, Vision for Engineering Leadership Multi-sector Alliance
- Board Member of ECEDHA Foundation Past President of ECEDHA
- Associate Editor, Automatica
- Editorial Board, IEEE ACCESS
- IEEE Educational Activities
- IEEE Smart Grid Operational and Steering Committees
- IEEE CSS liaison to IEEE Smart Grid
- Advisory Board, International Journal of Robotics and Automation

Honors & Awards

- *Fellow, IEEE*
- *Fellow, AAAS*
- *Lockheed Martin Corporate Award*
- *Technology Transfer Award, NASA*
- *ECEDHA service award*
- *IEEE Distinguished Lecturer*

Ongoing Research Projects

- Autonomous Inverter Controls for Resilient and Secure Grid Operation: Vector Control Design for Grid Forming (DOE)
- Secure and Resilient Operations Using Open-Source Distributed Systems Platform (DOE)
- Building Intelligence with Layered Defense using Security-Constrained Optimization and Security Risk Detection (DOE)
- FEEDER Center (established under DoE grants)
- Nonlinear Autopilot Design and Robustness Analysis (Lockheed)
- Adaptive and Resilient Autonomy for Unmanned Autonomous Systems (L3Harris and FHTCC)
- Long-Duration Energy Storage Study (Duke Energy)
- Data Analytics for Autonomous Building and Smart Infrastructure (Siemens Building Technology)
- Data Analytics: Electric Grid Data Integration and Support (Siemens Digital Grid)

Nazanin Rahnavard
Professor
Ph.D., Electrical & Computer Engineering
Georgia Institute of Technology, 2007

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Research Interests

- *Machine/Deep Learning Applications in Communication Systems*
- *Deep learning theory and applications*
- *Compressive Sensing: New Designs and Applications*
- *Radio Frequency Cartography*
- *Cooperative Spectrum Sensing and Access in Cognitive Radio Networks*
- *High-dimensional data analysis*

Professional Activities

- Frequent NSF Panel Reviewer
- Associate Editor for Elsevier Computer Networks Journal
- Member of Technical Program Committee for numerous conferences such as IEEE International Symposium on Information Theory (ISIT), IEEE Global Communications (Globecom), Military Communications (MILCOM), IEEE International Conference on Communications (ICC)
- Technical Reviewer for several journals including IEEE Trans. on Communications, IEEE Trans. on Wireless Communications, IEEE Trans. on Information Theory, IEEE Trans. on Multimedia, and IEEE Wireless Communications Letter
- IEEE Senior Member

Honors & Awards

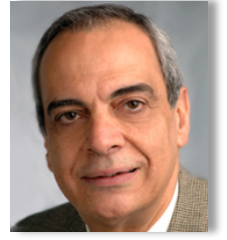
- *College of Engineering and Computer Science Excellence in Research Award (2020)*
- *UCF Women's History Month Honoree (2020)*
- *National Science Foundation CAREER award (2011)*
- *Outstanding Research Award, Center for Signal and Image Processing, Georgia Institute of Technology, 2007*
- *UCF College of Engineering and Computer Science*
- *CAMP-YES Mentor of the Year Award, 2016.*

Ongoing Research Projects

- Deep Learning for RF Modulation Classification (Leonardo DRS)
- A Tensor-based Framework for Reliable Radio Cartography (NSF)
- Cross-layer Adaptive Rate/Resolution Design for Energy-Aware Acquisition of Spectrally Sparse Signals Leveraging Spin-based Devices (NSF)
- STEM Transfer Students Opportunity for Nurtured Growth (STRONG) (NSF)

Marwan Simaan
Florida 21st Century Chair and Distinguished Professor
Ph.D., Electrical Engineering
University of Illinois at Urbana-Champaign, 1972

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Research Interests

- *Optimization and Control*
- *Signal Processing*
- *Knowledge-Based Signal Processing and Control*

Professional Activities

- Member, AIMBE Fellow Evaluation Committee
- Member, AAAS Engineering Section Steering Committee
- Member, AAAS Committee on Fellows
- Member, AAAS Committee on Governance Modernization Committee
- Member, AAAS Strategic Planning Committee
- Member, Integrated Computer-Aided Engineering
- Editorial Advisory Board

Honors & Awards

- *Member, National Academy of Engineering*
- *Life Fellow, IEEE*
- *Fellow, NAI*
- *Life Fellow, ASEE*
- *Fellow, AAAS*
- *Fellow, AIMBE*
- *Fellow, Electromagnetics Academy*
- *Distinguished ECE Alumnus Award, Univ. of Illinois*
- *Distinguished Service in Engineering Award, Univ. of Illinois*
- *IEEE William E. Sayle Award for Achievement in Education*

Ongoing Research Projects

- Self-organizing Control and Scalable Game-theoretical Dispatch of Distributed Generations for High-Penetration Smart Grids (NSF)
- FEEDER Center (DoE)
- The 21st Century World Class Scholars Program – Simaan Endowed Chair (Florida Board of Governors)
- Optimization and Control of the Left Ventricular Assist Device
- Optimization and Control of the Metals Rolling Process

Wei Sun
Associate Professor
Ph.D., Electrical & Computer Engineering
Iowa State University, 2011

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Research Interests

- *Power System Restoration and Self-healing Smart Grid*
- *Cyber-Physical System Security and Resilience*
- *Interdependent Critical Infrastructure*
- *Renewable Energy and Microgrid*

Professional Activities

- Director of Siemens Digital Grid Lab
- Associate Editor of Energy Systems
- Co-chair of IEEE PES Working Group on Power System Restoration
- Co-Chair of IEEE PES Task Force on Power System Restoration with Renewable Energy Systems
- Panel Chair in IEEE conferences, including Innovative Smart Grid Tech, PES General Meeting
- Panelist and reviewer for NSF and DoE

Honors & Awards

- *Microsoft Software Engineering Innovation Foundation Award* (2014)
- *Best Paper Award*, 2019 IEEE PES ISGT Asia
- *Mentor of the Year*, UCF Graduate Student Association, 2019

Ongoing Research Projects

- Secure and Resilient Operations Using Open-Source Distributed Systems Platform (OpenDSP) (US Department of Energy)
- Autonomous Inverter Controls for Resilient and Secure Grid Operation: Vector Control Design for Grid Forming (US Department of Energy)
- Building Intelligence with Layered Defense using Security-Constrained Optimization and Security Risk Detection (BUILD-SOS) (US Department of Energy)

Kalpathy Sundaram
Professor & ECE Graduate Coordinator
Ph.D., Electrical Engineering
Indian Institute of Technology, 1980

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Research Interests

- *Thin Film Microelectronic Materials and Processing*
- *Optoelectronic Thin Film Materials*

Professional Activities

- IEEE Senior Life Member
- Member of Electrochemical Society
- IEEE Orlando Section, Education chair, Historian

Honors & Awards

- *Thomas Callinan Award*, Dielectric Science & Technology Division of ECS
- *2014 IEEE Student Branch Counselor Award*
- *Fellow, Electrochemical Society* (ECS 2013)
- *2008 Outstanding Engineer, IEEE Region-3*
- *2008 UCF Teaching Incentive Program (TIP) Award*
- *2011 Outstanding Service Award, IEEE Region-3*
- *2008 Outstanding Engineer Award, IEEE Region-3*
- *2000 Joseph Biedenbach Outstanding Engineer Educator Award, IEEE Region-3*

Ongoing Research Projects

- Preparation of Boron Carbon Nitride (BCN) films by RF Sputtering (Intel Corporation)
- Transparent p-type conducting semiconductor films

Azadeh Vosoughi
Associate Professor
Ph.D., Electrical and Computer Engineering
Cornell University, 2006

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Research Interests

- *Communication theory and wireless communications*
- *Detection and estimation theory*
- *Optimization and statistical signal processing*
- *Brain signal processing, neurological and signal processing*
- *Distributed inference and data fusion with communication constraints*
- *Enhanced radio spectrum utilization for cognitive radios and directional wireless mobile systems*

Professional Activities

- IEEE Senior Member
- Senior Area Editor for the IEEE Signal Processing Letters
- Frequent NSF review panelist
- TPC Member of numerous IEEE conferences including: GLOBECOM, MILCOM, PIMRC, WCNC

Honors & Awards

- *Recipient of Office of Research's (OR) Assistant Professor Mentoring Program Award (2021)*
- *Recipient of UCF CECS CAE Link Professorship Award (2012-2023)*
- *NSF Faculty Early Career Award (2011)*
- *Wilmot Assistant Professor in College of Arts, Sciences, and Engineering at the University of Rochester*
- *Recipient of Furth Award for Junior Faculty at the University of Rochester*

Ongoing Research Projects

- 4D Spatiotemporal Medical Particle Imaging Using Deep Neural Networks with Sparsifying Transforms (American Society for Engineering Education)
- Directional Software-Defined Radio (NSF)

Jun Wang
Professor
Ph.D., Computer Science and Engineering
University of Cincinnati, 2002

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Research Interests

- *Big Data and Big Learning Computer Systems*
- *Massive Storage and Memory Architecture*
- *Data Intensive Computing*

Professional Activities

- Associate editor for the IEEE Transactions on Parallel and Distributed Systems 2012 – 2014; 2016 – present
- Associate editor for the IEEE Transactions on Cloud Computing 2016 – present
- Program co-Chair for 2018 the 20th IEEE Conference on High Performance Computing and Communications
- Local arrangement chair for the IEEE/ACM IPDPS'17

Honors & Awards

- *University of Central Florida Research Incentive Award 2017*
- *UCF Reach for the Stars Award, 2015*
- *University of Central Florida Dean's Research Professorship Award 2013*
- *University of Central Florida Research Incentive Award 2010*
- *Charles N. Millican Faculty Fellow in EECS at University of Central Florida, 2010*
- *US National Science Foundation Early Career Award, 2009*
- *US Department of Energy Early Career Principal Investigator Award, 2005*
- *Senior Member of IEEE*
- *2019 Editorial Excellence and Eminence Award by IEEE Transactions on Cloud Computing Editor Board*

Ongoing Research Projects

- National Science Foundation: PPoSS: Planning Data Centric Computing for Scalable Heterogeneous Memory and Storage System Architecture
- National Science Foundation: Revamping I/O Architectures Using Machine Learning Techniques on Big Compute Machines
- National Science Foundation: Developing a Highly Efficient and Accurate Approximation System for Warehouse-Scale Computers with the Sub-dataset Distribution Aware Approach

Arthur Weeks
Associate Professor
Ph.D., Electrical Engineering
University of Central Florida, 1987

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407-823-0767
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Research Interests

- *Biomedical Sensors*
- *Patient Monitoring*
- *Tele Healthcare*
- *Image Processing*
- *Wireless Computing*

Honors & Awards

2009-2010 Teaching Incentive Program Award



Lei Wei
Associate Professor
Ph.D., Electrical Engineering
University of South Australia, 1996

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407-823-5098
<http://people.cecs.ucf.edu/lei/>

Research Interests

- *Bio-logically inspired signal processing*
- *Modulation and error control coding*
- *Wireless communications*
- *Homeland security for campus emergency alert*

Professional Activities

- Senior Member IEEE

Honors & Awards

- *Who's Who in America, 2010*
- *Semi-finalists in Homeland Security Awards from Columbus Fellowship in June 2007*
- *Ongoing Research Projects*
- *GPRAM and its applications*



Yuxiao Yang
Assistant Professor
Ph.D. Electrical and Computer Engineering
University of Southern California, 2019



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(407)823-0167

Research Interests

- *Brain-Machine Interfaces*
- *Neural Engineering*
- *Control Theory*
- *Stochastic Signal Processing*
- *Machine Learning*

Professional Activities

- Member, Society for Neuroscience (SfN)
- Member, IEEE Engineering in Medicine and Biology Society (EMBS)

Honors & Awards

- *Winner of the International Brain-Computer Interface (BCI) Award* (2019)
- *Winner of the EMBS Student Best Paper Competition* (2015)
- *McMullen Fellowship*, Cornell University (2013)

Ongoing Research Projects

- Designing closed-loop brain-machine interfaces for treatment of neuropsychiatric disorders such as depression
- Machine learning of large-scale brain network dynamics
- Developing personalized brain-machine interfaces for controlling brain inactivation under anesthesia

Fan Yao
Assistant Professor
Ph.D., Computer Engineering
The George Washington University, 2018



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407-823-0147
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Research Interests

- *Computer Architecture*
- *Secure Processor Architecture*
- *ML/AI Hardware Security*
- *System Security*
- *Energy Efficiency Computing*
- *Cloud Computing*

Professional Activities

- Conference Program Committee: DAC 2022, ISCA 2022 (ERC), IISWC 2021, MICRO 2020, 2021 (ERC), NAS 2021, SEED 2021, ICCD 2019, 2020, 2021, HPCA 2020, MICRO SRC 2018.
- Journal Technical Reviewer: IEEE IoT Journal 2020, IEEE TPDS 2020, IEEE TC 2020, 2021, IEEE TCOM 2020, IEEE CAL 2019, IEEE TCAD 2019, IEEE TCC 2018, IEEE TSC 2018, Springer HaSS 2018.
- Organizing Committee: ICCD 2020, 2021 (Proceeding Chair), HPCA 2019 (Registration Chair), IISWC 2019 (Local Chair/Session Chair) IISWC 2021 (Proceeding Chair).

Honors & Awards

- *Top Picks in Hardware and Embedded Security*, 2020
- *Best Dissertation Award*, GWU, 2019
- *NSF GW I-Corps Site Grant Award*, 2018
- *The Norris & Betty Hekimian Engineering Endowment Fellowship*, GWU, 2017

Ongoing Funded Research Projects

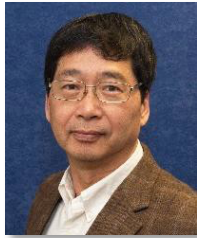
- Towards Secure-By-Design Integration of Emerging Non-Volatile Memory in Future System, CNS Core, Period: October 2020 – September 2023. Role: PI.
- Understanding and Taming Deterministic Model Bit Flip attacks in Deep Neural Networks, SaTC Core, Period: October 2020-September 2023, Role: PI.
- Architecting Secure-by-Design ReRAM- based Memories, CNS Core, Period: October 2019- September 2022, Role: Co-PI.

Ongoing Research Projects

- Microarchitecture information leakage attacks: attack and defenses.
- Information security (side and covert channel) of emerging non-volatile memories
- Security ML/AI against hardware-based attacks.
- Architecting secure and high-performance crossbar ReRAM memory systems.

Jiann S. Yuan
Professor
Ph.D. Electrical Engineering
University of Florida, 1988

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Research Interests

- *Semiconductor devices and ICs*
- *GaN power devices and reliability analysis*
- *Deep Learning for 3DICs*
- *Using artificial Intelligence for new drug discovery*
- *Using generative adversarial examples for cybersecurity*

Professional Activities

- Editor, IEEE Transactions on Device and Materials Reliability, 2002-2018
- Distinguished Lecturer, IEEE Electron Devices Society, 2006- present
- Reviewer, IEEE Transactions on Electron Devices, IEEE Transactions on Circuits and Systems, Electron Device Letters

Honors & Awards

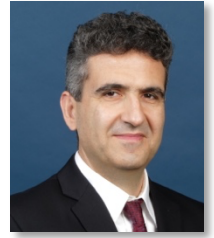
- *UCF Pegasus Professor Award*, 2016
- *TIP Award*, University of Central Florida, 2020, 2015, 2010, 2004, 1996
- *RIA Award*, University of Central Florida, 2018 and 2004
- *Distinguished Lecturer*, IEEE Electron Devices Society, 2006-present
- *Outstanding Engineering Award*, IEEE Orlando Section, 2002
- *Outstanding Researcher Award*, College of Engineering and Computer Science, 2002
- *Outstanding Engineering Educator Award*, Florida Council of IEEE, 1993

Ongoing Research Projects

- Phase II for Industry/University Cooperative Research Center: Multi-functional Integrated System Technology (MIST), NSF, Principal Investigator
- Machine Learning for smart semiconductor manufacturing and 3D IC design, Tokyo Electron, America, Principal Investigator.
- Developing a robust and scalable system to defend against deep fakes, Florida Center for Cybersecurity, Principal Investigator

Murat Yuksel
Professor and Interim Chair
Ph.D. Computer Science
Rensselaer Polytechnic Institute, 2002

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Research Interests

- *Networked, wireless and computer systems*
- *Optical wireless*
- *Spectrum sharing*
- *Network economics and architectures*

Professional Activities

- Editor: IEEE Networking Letters; 2018-Present
- Editor: Computer Networks, Elsevier; 2014-Present
- NSF panelist
- Steering Committee Member: IEEE LANMAN 2015-Present, ACM CoNEXT CAN Workshop 2017-2018
- Chair: ACM CoNEXT CAN 2016, IEEE LANMAN 2014
- TPC Chair: IEEE LANMAN 2013
- TPC Track Chair: IEEE MILCOM 2019, IEEE/ACM NAS 2012
- TPC Member: ACM MOBIHOC, IEEE ICNP, IEEE INFOCOM, IEEE GLOBECOM, IEEE ICC

Honors & Awards

- *William Petak Best Paper Award*, ASPA Conference, 2021
- *Research Incentive Award*, UCF, 2021.
- *Distinguished TPC Member*, IEEE INFOCOM, 2019, 2021
- *Best Paper Runner-up Award*, IEEE DSC, Hangzhou, China 2019.
- *Best-of-the-Best Paper Award*, IEEE PES General Meeting, 2019.
- *Best Demo Award*; IEEE LANMAN 2018
- *Faculty Excellence Award*; College of Engineering, UNR, 2016
- *Senior Member*; ACM, 2015
- *Best CSE Researcher Award*; UNR, 2014
- *Senior Scholar Award*; College of Engineering, UNR, May 2014
- *Senior Member*; IEEE, 2011
- *Best Paper Award*; IEEE LANMAN 2008
- *Best Paper Nominee*; IEEE ISCC 2003
- *Achievement Award*; Sun Labs, 2001

Ongoing Funded Research Projects

- 3D RF/FSO Mesh Networking with Challenged Infrastructure (by NSF)
- A Visible Light Communication (VLC) Testbed for Next Generation Wireless Research (by NSF)
- Free-Space Optical Communication Subsystem for Wideband Wireless Networking (WiNET) (by Blue Halo, Army SBIR Phase I)
- Secure Communications Link Between Robotics and Autonomous Systems (by Triton Systems, Navy SBIR Phase II)
- Directional Software-Defined Radio (NSF)
- Stable and Efficient Peering Through Internet Exchange Points (IXPs) (by NSF)

Hao Zheng
Assistant Professor
Ph.D. in Computer Engineering
The George Washington University, 2021

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Research Interests

- *Computer Architecture*
- *Network-on-Chips*
- *Energy-Efficient Computing and Communication Systems*
- *Heterogeneous and Domain-specific Architectures*
- *Machine Learning Techniques for Efficient Computing*

Professional Activities

- Web Chair, 25th IEEE International Symposium on High-Performance Computer Architecture (HPCA), February 16-20 2019, Washington D.C., USA
- Conference Reviewer/Sub-reviewer: NoCs'2017-2019; ICCD'2018; ISCA'2021; HPCA'2018,2020,2021
- Journal Reviewer: ACM/IEEE Transactions on Networking, IEEE Transactions on Sustainable Computing, IEEE Transactions on Computers

Honors & Awards

- *Best Paper Finalist, Design Automation Conference, 2020*
- *NSF GW I-Corps Site Grant Award, 2019*
- *Phillip/Temofel Sprawcew Endowment Scholarship, GWU, 2017*

Ongoing Research Projects

- Machine Learning for High-performance and Energy-efficient On-chip Communications
- Application-Aware Flexible Manycore Architectures
- Heterogeneous Chiplet-based Computing Systems
- Graph Neural Network Accelerators

Qun Zhou Sun
Assistant Professor
Ph.D. Electrical Engineering
Iowa State University, 2011

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Research Interests

- *Smart Grid and Smart Buildings*
- *Energy Infrastructure Data Analytics*
- *Demand Response and Customer Engagement*
- *Solar Energy Forecasting and System Integration*

Professional Activities

- Director, Smart Infrastructure Data Analytics Lab
- Associate Editor, IEEE Transactions on Smart Grid
- Secretary, IEEE Power and Energy Society (PES) Smart Building, Load and Customer Systems (SBLC) Committee
- Committee Member, IEEE PES Big Data Analytics (BDA) Subcommittee
- Committee Member, IEEE PES Power System Economics Subcommittee
- Technical Reviewer for IEEE Transactions on Power Systems, IEEE Transactions on Sustainable Energy, etc

Ongoing Research Projects

- Building Intelligence with Layered Defense using Security-Constrained Optimization and Security Risk Detection (BUILD-SOS): A Probabilistic Approach (DOE)
- Autonomous Buildings and the Digital Grid (Siemens)
- Leveraging Data to Secure Smart Infrastructures under Cyber-Physical Attacks (CyberFlorida)
- GOALI: Highly Integrated Grid-Tied Multi-Port Power Module for PV and Storage (NSF)
- Development of Solar Power Forecasting and NanoGrid Management System (OUC)
- REU Site: Research Experiences for Undergraduates Site on Internet of Things (NSF)

Electrical and Computer Engineering

Facts & Figures

Degree Programs

- BS in EE, BS in CpE
- MS in EE, MS in CpE
- PhD in EE, PhD in CpE

US News and World Report 2022 Rankings

- 58 in Electrical Engineering (out of 189 ranked programs)
- 51 in Computer Engineering (out of 154 ranked programs)

Faculty & Staff

- 35 Tenured/Tenure-Track Faculty (16 Professors, 8 Associate Professors, 11 Assistant Professors)
- 3 Research and Visiting Faculty Members
- 6 Lecturers/Instructors (Including 1 Senior Lecturer and 1 Associate Lecturer)
- 5 Courtesy Faculty Members
- 33 Joint Faculty Members
- 5 Emeritus Professors
- 3 Staff Engineers
- 8 Office Staff Members

External Recognitions

- 1 Member of National Academy of Engineering
- 15 Fellows of IEEE
- 5 Fellows of AAAS
- 1 Fellow of ASEE
- 1 Fellow of AIMBE
- 1 Fellow of ECS
- 7 NSF Career Awardees
- 1 DoE Young Investigator Awardees
- 5 Fellows of National Academy of Inventors

Degrees Conferred (AY 2020-2021)

- 13 PhD EE and 9 PhD CpE
- 14 MSc EE and 17 MSc CpE
- 128 BSc EE and 137 BSc CpE

Student Enrollment (FALL 2021)

- 99 Electrical Engineering PhD students
- 44 Computer Engineering PhD students
- 57 Electrical Engineering MSc students
- 28 Computer Engineering MSc students
- 807 Electrical Engineering undergraduate students
- 910 Computer Engineering undergraduate students



Electrical and Computer Engineering

UNIVERSITY OF CENTRAL FLORIDA

