

College of Engineering and Computer Science  
**FACULTY RESEARCH TALKS**

**LISTEN. LEARN. COLLABORATE.**

**Zoom talk | Friday, Aug. 7, 2020 | Noon to 1 p.m.**



PRESENTER 1:  
**HAOFEI YU**

Assistant Professor,  
Civil, Environmental  
and Construction  
Engineering

**The Smart and Trustworthy AIR Quality Network (STAIR)**

Smart and connected wireless low-cost sensor networks are enabling a paradigm shift in the field of ambient air quality monitoring and management. In this talk, Dr. Yu will introduce an on-going NSF project to design and deploy a secure, trustworthy, and reliable air quality monitoring system for the Orlando region. This project also emphasizes the sustainable empowerment of residents through community engagement on data utilization and advocacy.

Dr. Yu's research interests include air quality modeling, emission inventory, health impact assessment, and air quality sensors. He received his MS degree in environmental engineering from University of Shanghai for Science and Technology and Ph.D. degree in environmental health from the University of South Florida. Before joining UCF in 2017, he was a research associate at Georgia Institute of Technology and Pacific Northwest National Laboratory.



PRESENTER 2:

**KENLE CHEN**

Assistant Professor,  
Electrical and  
Computer Engineering

**Towards Ultimate Energy and Spectral Efficiency of Next-Generation Wireless Radio Systems**

The emerging wireless networks feature high speed and low latency while accommodating exponentially increased data volume generated by mobile users, cloud computing nodes, and IOT sensors and devices. Consequently, the rampantly growing energy consumption of wireless ecosystem and unsustainability of spectrum are viewed as major threats to the entire human society. In this talk, Dr. Chen will introduce his NSF-sponsored research on novel radio frontend architectures offering unlimited bandwidth, high efficiency, intrinsic linearity, and strong mismatch resilience. Demonstrating more-than-doubled improvements over state-of-the-art, these recent advances pave the path to next-generation energy- and spectrum-efficient wireless communications.

Dr. Chen's research is mainly focused on advanced radio-frequency circuits and systems for emerging wireless communications. He earned his Ph.D. degree in electrical engineering from Purdue University in 2013. Before joining UCF in 2018, he was an assistant professor at the University of Rhode Island for one year. Prior to his career in academia, he worked in the wireless and semiconductor industry with innovative start-ups and leading enterprises, including Skyworks Solutions in San Jose, California, from 2013 to 2017. His group has won multiple prestigious research-based awards in flagship conferences of the IEEE Microwave Theory and Techniques Society.

**ZOOM LINK:** <https://bit.ly/35unuVe> | **QUESTIONS?** Email [Jennifer.Sutton@ucf.edu](mailto:Jennifer.Sutton@ucf.edu)

For more information, and to see previous talks, visit [www.cecs.ucf.edu/faculty-research-talks](http://www.cecs.ucf.edu/faculty-research-talks)



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PRESENTER 3:

**SAMIK  
BHATTACHARYA**

Assistant Professor,  
Mechanical and  
Aerospace Engineering

**Exploring Fluid Physics Across Multiple Length Scales Through Advanced Optical Diagnostics**

In this talk, Dr. Bhattacharya will discuss his group's efforts to investigate problems in fluid mechanics across different length scales using advanced optical measurement systems. In particular, he will focus on problems involving large boundary deformation, lack of optical accessibility, and microscale flows. He will also introduce an Office of Naval Research project on bio-inspired swimming with morphing hydrofoils for Autonomous Underwater Vehicles. Finally, he will share two other projects involving advanced optical measurements.

Dr. Bhattacharya's research is focused on understanding fluid physics across multiple length scales using advanced experimental techniques. Before joining UCF, he finished a two-year postdoc at Queen's University in Canada. He completed his Ph.D. degree in aerospace engineering from The Ohio State University in 2013. He currently leads the experimental fluid mechanics group at UCF.



PRESENTER 4:

**YAN SOLIHIN**

Professor,  
Computer Science  
and Director of the  
Cybersecurity and  
Privacy Cluster

**Secure and Private Computing in the Cloud**

In this talk, Dr. Solihin will introduce the Cyber Security and Privacy Cluster. He will also present his research on the security and performance of the cloud, focusing on two emerging areas: trustworthy and privacy preserving computation in the cloud, focusing on architecture primitives to enable secure and private computation; and post Moore's law computing, focusing on persistent memory performance and security.

Dr. Solihin obtained a BS in computer science from Institut Teknologi Bandung in 1995, a BS in mathematics from Universitas Terbuka in 1995, an M.A.Sc in computer engineering from Nanyang Technological University in 1997, and a Ph.D. in computer science from the University of Illinois at Urbana-Champaign in 2002. He is a recipient of a 2005 and 2010 IBM Faculty Partnership Award, a 2004 NSF Faculty Early Career Award, and 1997 AT&T Leadership Award. He is listed in the HPCA Hall of Fame and ISCA Hall of Fame. Prior to joining UCF, he was a professor of electrical and computer engineering at N.C State University and a program director at the Division of Computer and Network Systems at the National Science Foundation. He co-founded the NSF/Intel Partnership on Foundational Microarchitecture Research (FoMR) program. He has published more than 100 papers, authored more than 120 patent assets, and delivered more than 70 invited talks and seminars, including several keynotes and multi-day tutorials.

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