



UCF

UNIVERSITY OF CENTRAL FLORIDA | ORLANDO

College of Engineering and Computer Science
FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, May 29, 2020 | Noon to 1 p.m.



PRESENTER 1:

**SAMIUL
HASAN**

Asst. Professor,
Civil, Environmental
and Construction
Engineering

Data Science for Smart and Resilient Cities: Infrastructure Interdependency, Disaster Management, and Deep Learning in Transportation

Rising seas, natural disasters, and other stressors have adversely affected regional economies and millions of people all over the world. In this talk, Dr. Hasan will discuss his group's efforts to understand infrastructure and community resilience by developing data-driven and simulation-based approaches. He will discuss two NSF-funded projects focusing on infrastructure interdependency and hurricane evacuation demand prediction. He will also discuss his transportation projects focusing on applications of deep learning models.

Dr. Hasan is an Assistant Professor in the Department of Civil, Environmental, and Construction Engineering at the University of Central Florida. Prior to joining UCF, he worked as a Post-doctoral Research Fellow at the Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia. He received a Ph.D. in Transportation and Infrastructure Systems from Purdue University in 2013. Dr. Hasan is the recipient of the 2014 Best Dissertation Award presented by the Transportation Science and Logistics (TSL) society of the Institute for Operations Research and the Management Sciences (INFORMS). His research interests include urban data science, human mobility, network modeling, infrastructure interdependencies, and disaster management.



PRESENTER 2:

YAJIE DONG

Asst. Professor,
Materials Science
and Engineering,
Nanoscience
Technology Center,
and College of
Optics and Photonics
(CREOL)

Luminescent Nanomaterials and Devices for Display, Lighting and Photomedicine

Luminescent nanomaterials, including quantum dots and metal halide perovskite nanocrystals, have emerged as key building blocks for various photonics and optoelectronics applications. In this talk, Dr. Dong will present research and development in his group focusing on exploring these nanomaterials for novel display, lighting and photomedical device applications (photodynamic therapy and photobiomodulation). Opportunities for potential collaborations in different directions will also be highlighted.

Dr. Dong received his Ph.D. degree from Harvard University in 2010. Before joining UCF in 2014, he worked as a Senior Scientist at QD Vision Inc. and as a postdoc associate at Massachusetts Institute of Technology. He is an associate editor of Optics Express, a member of the Society for Information Display's Technical Program Committee and a fellow of the American Society for Laser Medicine and Surgery.

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

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PRESENTER 3:

BEN SAWYER

Asst. Professor,
Industrial Engineering
and Management
Systems

Improving Information Throughput, Human to Machine and Back

Dr. Sawyer will discuss his group's work toward improving and rethinking how information moves in human-autonomy teams. He will focus on work from his Laboratory for Autonomy-Brain Exchange (LabX) using neuro-economic techniques leveraging applied neuroscience and neuroengineering to build sub-second information transfer from human to digital system. He will discuss his partnership with Adobe, Inc. to build the Virtual Reading Laboratory (VRL), and collect big data toward improving reading speed and comprehension in digital interfaces. Finally, he will talk about human security, and how information theory and applied neuroscience are redefining cyberattack surfaces and related defense strategies.

Before joining UCF, Dr. Sawyer led research consortia within MIT's Center for Transportation and Logistics, and completed his postdoctoral studies with MIT's Agelab. While completing a Ph.D. in Human Factors at UCF, Dr. Sawyer was a Repperger Scholar, then a contractor with the USAF's 711th Human Performance Wing as a member of their Applied Neuroscience and BATMAN Groups. He has been recipient of a 2018 AFRL YIP, and the 2017 Human Factors Prize. He currently leads the Laboratory for Autonomy-Brain Exchange (LabX) at UCF, and has begun building the Virtual Reading Laboratory (VRL) in collaboration with Adobe.



PRESENTER 4:

**SEETHA
RAGHAVAN**

Assoc. Professor,
Mechanical
and Aerospace
Engineering

Capturing Mechanical and Material Response to Extreme Aerospace Environments

This presentation covers Dr. Raghavan's research focus areas, which range from exploring fundamentals of load transfer with nanoparticle sensors to capturing in-situ mechanical response of high temperature materials under replicated extreme environments representative of applications in propulsion, hypersonics and space. The findings from such unique measurements serve to guide the design of new material systems that answer evolving and challenging aerospace needs.

Dr. Raghavan joined UCF in Fall 2008 after completing her doctoral studies in Aeronautics and Astronautics at Purdue University. She has an M.S. in Aerospace Engineering from ISAE-SUPAERO in Toulouse, France. She has 7 years of experience in the aerospace industry as a senior engineer involved in aircraft structural analysis, maintenance, repair & modifications and non-destructive testing. At UCF, she received the TIP award twice and the Reach for the Stars award. She is an Associate Fellow of the American Institute of Aeronautics and Astronautics and was recently honored by Women in Aerospace with the 2019 Aerospace Educator Award.

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