



UCF

FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, April 21, 2023 | Noon to 1 p.m.

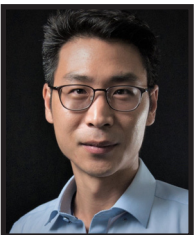


PRESENTER 1:
**JIANN-SHIUN
YUAN**
Pegasus Professor
Electrical and
Computer Engineering

GaN Power Transistor Reliability and Deep Learning for Early Drug Discovery

In this talk, Dr. Yuan will present on reliability issues such as time-dependent dielectric breakdown, bias temperature stability and electrostatic discharge events for GaN high mobility transistors used for power electronics. He will also discuss how to use the substrate bias to improve GaN device reliability and performance. In addition, Dr. Yuan will share recent research on using a deep learning technique for early drug discovery of a potential cancer treatment.

Dr. Yuan received his Ph.D. from the University of Florida. He has been a faculty member at UCF since 1990, where he serves as the site director of the NSF I/UCRC MIST Center. He has published three books and more than 360 papers in journals and conference proceedings in the areas of semiconductor devices and circuits. At UCF he has supervised 32 Ph.D. dissertations and 35 M.S. theses. Dr. Yuan was an editor of *IEEE Transactions on Device and Materials Reliability* and is a distinguished lecturer for the IEEE Electron Devices Society. He served on the IEEE Florida Council and was the recipient of its 1993 Outstanding Engineering Educator Award. Dr. Yuan received the 1995, 2004, 2010, 2015 and 2020 teaching incentive program awards as well as the 2003 and 2018 research incentive awards from UCF.



PRESENTER 2:
**JOON-HYUK
PARK**
Assistant Professor
Mechanical
and Aerospace
Engineering;
Disability, Aging and
Technology Cluster

Wearable Assistive and Rehabilitation Technologies for Disabled and Aging Populations

Wearable devices are used in many research and engineering fields to monitor human health, assist and rehabilitate people with disabilities, or augment physical performance. In this talk, Dr. Park will discuss his group's efforts in developing new tools and techniques to address gaps and unmet needs in existing wearable devices. He will share several research topics in this talk: variable resistance suits, work-sharing of upper and lower limbs, a patient transfer robot and a multimodal human and ambience sensing system.

Dr. Park's research is focused on developing wearable and assistive technologies, and designing wearable interface/mechanisms and human-in-the-loop controllers to improve the usability and practicality of assistive devices and robots. He received his Ph.D. in mechanical engineering from Columbia University in 2016 and worked at the U.S. Army Research Lab in Aberdeen, Md. for three years as a National Academy of Science research associate before joining UCF in 2019.



PRESENTER 3:
**RYAN
MCMAHAN**
Associate Professor
Computer Science

Machine Learning Virtual Reality Tracking Data

The tracking data intrinsic to consumer virtual reality (VR) applications is rich and can be combined with machine learning approaches to enable new capabilities. In this talk, Dr. McMahan will discuss how machine learning models based on VR tracking data can be used to predict trainee learning gains for VR training applications or to identify VR users given just their tracking data.

Dr. McMahan directs the eXtended Reality & Training (XRT) Lab, which focuses on using extended reality and VR technologies to facilitate and enhance training and education. He is an NSF CAREER award winner and co-author of the book *3D User Interfaces: Theory and Practice, Second Edition*. Dr. McMahan received his Ph.D. in computer science and applications from Virginia Tech in 2011.