UCF

FACULTY RESEARCH TALKS
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Zoom talk | Friday, June 17, 2022 | Noon to 1 p.m.

PRESENTER 1:
QIPENG "PHIL" ZHENG
Associate Professor, Industrial Engineering and Management Systems

Applied Operations Research Lab

In this talk, Dr. Zheng will discuss his group's efforts in applying operations research in various engineering fields and management systems. This includes energy and power systems, water food energy nexus, social media networks, blockchain technology, etc. He and his team leverage operations research techniques to make the best out of the synergies not only within a specific system but among systems.

Dr. Zheng's main research is in stochastic programming, network optimization, integer programming, applied game theory, and applications in a variety of areas, such as energy systems, transportation planning, production planning, sustainability, supply chain management, water-food-energy nexus, artificial intelligence, and applications (e.g., social media, predictive maintenance) among many others. He would like to acknowledge the support from various agencies and programs including UCF, NSF, DOE and AFRL, among many others.

PRESENTER 2:
MURAT YUKSEL
Professor and Interim Chair, Electrical and Computer Engineering

Multi-Element Directional Wireless Modules for Mobile Networking

The recent proliferation of wireless technologies and choices available to user applications has triggered a tremendous wireless demand. As the radio spectrum is getting scarcer and saturated, we urgently need innovations that will enable leveraging of new wireless spectrums and substrates to respond to the exploding mobile wireless traffic demand. In this talk, Dr. Yuksel will present his team's recent work on exploring the potential for directional wireless systems in the context of mobile ad-hoc and opportunistic networking. He will also summarize their recent efforts in spectrum sharing, routing protocols, and usage of internet architecture for electrical vehicle integration to the power grid.

Before joining UCF in 2016, Dr. Yuksel was with the Computer Science & Engineering Department at the University of Nevada. He has a Ph.D. in computer science from Rensselaer Polytechnic Institute. Dr. Yuksel worked as a software engineer at Sunnyvale, Calif. and as a visiting researcher at AT&T Labs and Los Alamos National Lab. His research interests are in networked, wireless, and computer systems with a recent focus on optical wireless, wireless systems, network economics, network architectures, and network management. He is a senior member of IEEE and ACM.

PRESENTER 3:
HAIYAN "NANCY" HU
Associate Professor, Computer Science

Gene Regulatory Network Inference from Next Generation Sequencing Data

Genes are regulated to interact with each other, forming biological pathways and performing miscellaneous functions under different phenotypic conditions. Understanding gene regulatory interaction mechanisms is fundamental in molecular biology and disease study. Large-scale omics data create opportunities for computational biologists to uncover the mystery in human gene regulation. In this talk, Dr. Hu will introduce computational methods to infer gene regulatory interactions using various types of next-generation sequencing datasets. The work is majorly supported by the NSF.

Dr. Hu's research interests focus on computational methods to understand gene regulation using genomics, transcriptomics and epigenomics data. Dr. Hu received her Ph.D. in computer science from the University of Southern California and was a research assistant professor at the Center for Computational Biology and Bioinformatics of Indiana University before joining UCF in 2008. Dr. Hu received the NSF CAREER award in 2012. She has published dozens of journal and conference papers in bioinformatics on gene regulation and large-scale omics data integration.