



UCF

FACULTY RESEARCH TALKS

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Zoom talk | Friday, Jan. 30, 2026 | Noon to 1 p.m.



Presenter 1:
HAO ZHENG
ASSISTANT
PROFESSOR
Electrical and
Computer
Engineering

Building Efficient Computing Infrastructure for Scalable, Energy-Efficient AI

In this presentation, Hao Zheng will discuss key computational challenges shaping the era of AI computing, from algorithms and theoretical foundations to hardware architecture. He will then demonstrate the need to revisit sparse computation through a graph-centric lens, showing how this perspective can uncover new opportunities in algorithm development and accelerator design. The talk will conclude with an overview of a new compilation framework aimed at translating AI algorithms to hardware while shortening the chip design cycle.

Zhang's research interests span the broad areas of computer architecture and machine learning, with a focus on AI hardware and networks-on-chip. He is the recipient of the NSF CAREER Award and serves as associate editor-in-chief for *IEEE Transactions on Computers*.



Presenter 2:
IVAN HAIGH
PROFESSOR
Civil, Environmental
and Construction
Engineering
Director,
UCF Coastal

The Silent Protectors: The Challenges Facing Storm Surge Barriers with Climate Change

There are currently more than 50 storm surge barriers in operation today around the world protecting tens of millions of people and trillions of pounds of property and infrastructure. However, with accelerating rates of sea-level rise being observed and changes in storminess, surge barriers are starting to have to close increasingly frequently, and changes have begun to be seen in the months when closures are typically occurring. Increased use of barriers in the future has critical implications for barrier management, maintenance and operation. In this talk, Ivan Haigh will describe recent research he has done to assess future changes in barrier closures and the impact this is likely to have on the management, maintenance and operation of surge barriers in the future.

Haigh's research specializes in sea-level change, extreme events and coastal flooding impacts. A key thrust of his research is determining how to effectively translate the results of these studies to local scales in practical terms, in ways that will aid coastal management in coastal cities, deltas and small islands. He has provided scientific advice to many governments and commercial organizations around the world.



Presenter 3:
KEVIN MORAN
ASSISTANT
PROFESSOR
Computer Science,
Cyber Security and
Privacy Cluster

Toward Assessing and Understanding AI-powered Software Engineering Tools

AI-powered developer tools have begun to fundamentally change the landscape of software engineering. However, while these tools hold much promise, understanding the scope of their capabilities and limitations, and precisely how they fit into developer workflows, is becoming increasingly important. In this talk, Kevin Moran will provide an overview of his lab's recent work at exploring the capabilities (or lack thereof) of AI-powered developer tools on the domain of UI-centric applications and on building new ways for developers to better build trust with their AI counterparts.

Moran directs the SAGE research group. He graduated with a bachelor's degree in physics from the College of the Holy Cross in 2013, and a master's degree and doctorate from William & Mary in 2015 and 2018 respectively. His main research interest involves facilitating the processes of software engineering, security and maintenance by building developer tools enhanced by artificial intelligence. He has published over 50 papers at various software engineering, security, and artificial intelligence conferences, and his research has been recognized with distinguished paper awards at IEEE S&P 2024, ESEC/FSE 2019 and ICSE 2020, and a Best Paper Award at CODASPY'19. Moran received the NSF CAREER award in 2025, the 2025 ASEMFL Rising Star Award, and the 2024 ACM SigSoft Early CAREER Researcher Award. More information is available at <http://www.kpmoran.com>.