



# FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, Feb. 27, 2026 | Noon to 1 p.m.



**Presenter 1:**  
**ROHIT**  
**DESHMUKH**  
**ASSISTANT**  
**PROFESSOR**  
**Mechanical**  
**and Aerospace**  
**Engineering**

## **Towards Scalable and Efficient Digital Twins of Multiphysics Systems**

Efficient mathematical and algorithmic frameworks, data-model integration and scalability to realistic problems are key prerequisites for enabling useful digital twins of large and complex multiphysics systems, such as fluid-thermal-structural interactions in hypersonic vehicles. In this talk, Rohit Deshmukh will highlight key challenges and provide an overview of his research group's efforts towards developing computational tools for effective scientific data management, accelerated knowledge discovery and efficient predictive modeling.

Deshmukh's research focuses on data-informed modeling of nonlinear dynamical systems, efficient computational models, and scientific data management. A key motivation behind his research efforts is the need for scalable computer models for large, parameterized problems of practical interest. Prior to joining UCF in December 2024, he held research and teaching positions at Ohio State University and Florida Atlantic University.



**Presenter 2:**  
**ROHITH**  
**VENKATAKRISHNAN**  
**ASSISTANT**  
**PROFESSOR**  
**Computer Science**

## **Towards Understanding the Relationship Between Cybersickness and Cognition in Virtual Reality**

Immersive extended reality (XR) technologies are increasingly used in navigational contexts like flight simulations and drone operations. However, their usage in such contexts is often hindered by cybersickness, an affliction producing symptoms analogous to classical motion sickness. In this talk, Rohith Venkatakrisnan will briefly cover the paradoxical role of distractions in mitigating sickness during immersive navigation, highlighting how moderate cognitive engagement can reduce symptoms while excessive demand exacerbates them. He will then outline this work's next thrust to identify neural responses to provocative events and how cognitive engagement modulates cortical activity to uncover the underlying mechanisms linking cognition and sickness.

Venkatakrisnan researches people's experiences of using immersive XR technologies, including virtual, augmented and mixed reality. He broadly aims to understand and enhance the user experience of these technologies to deploy them with major impact. His research spans a wide range of XR-related topics, including perception and cognition, cybersickness, and collaboration with artificially intelligent agents. Through multidisciplinary research, he aims to advance XR's potential to transform humanity.