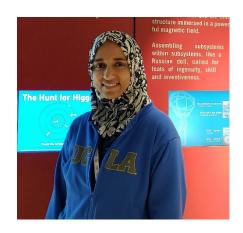Friday, November 1, 2024
11:15 am ITE 336
(Refreshments in ITE 301 at 11 am)

Reimagining Human-Agnostic Services for Human-Centered Systems

Prof. Fatima Anwar

Abstract:

Human-centered design is leading the way in recent technological advancements. In the evolving field of Mixed Reality (MR), it is crucial for users to feel both safe and engaged in order to achieve satisfaction in their tasks. However, our research indicates that human-agnostic design approaches for key system services, like tracking, can create multiple vulnerabilities. Additionally, reliance on insecure time sources can result in financial losses and even jeopardize user safety. Concerns are also rising regarding biased and insecure machine learning models, which tend to perform well for certain users while failing others. This talk will explore the opportunities and challenges in redesigning essential system services, such as timing, tracking, and learning, using effective abstractions to enhance robustness, security, and fairness within a human-centered design framework.

Bio:
Fatima Anwar leads the EMTECH Lab at the University of Massachusetts Amherst. Her research focuses on creating trustworthy, time-aware, intelligent, and equitable system services for distributed, resource-constrained environments, particularly for emerging human-centered applications in mixed reality, wearable technology, and autonomous systems. Supported by the esteemed CAREER and other NSF grants, she publishes her work in venues such as IEEE TVCG, VR, RTAS, NeurIPS, IROS, and ACM FAccT. Her research on quantifying human presence in MR has garnered attention from various media outlets, including BBC, LinkedIn, ScienceDaily, and Hoodline.

Fatima is deeply committed to enhancing the participation of diverse groups in computing. She actively engages in outreach activities at the university level, such as the Young Investigator Program, Massenberg STEM Institute, Turing Summer School, and Cybersecurity Institute. Additionally, she contributes to the broader community through programming for the Amherst Girl Scouts, the Los Angeles Computing Circle (LACC), and Engineering Day for Girls."

https://people.umass.edu/fanwar/