Dr¡.Shaoen.Wu

Title: **Autonomous Robotics with Cross-Modal Reasoning**

Abstract: Autonomous robotics has tremendous promise for future connected industrial use. In this talk, a Cross-modal Reasoning Model (CMRM) with a novel zero-shot Imitation Learning policy is proposed to tackle long-horizontal robotic RFID inventory tasks. To facilitate the training and assessment of CMRM, we constructed a Unity3D-based virtual platform that can be configured into various environments with the capability of offering photo-realistic objects and precise physical features (gravities, appearance, and more), which provides a close emulation of real environments for training and testing robots. The solution has been evaluated in various environments and demonstrated with outstanding performance.

Bio: Shaoen Wu received his PhD degree in Computer Science and Software Engineering from Auburn University, his MS degree in Control Theory and Engineering from the University of Electronic Science and Technology of China (UESTC), and his BS degree in Automation from Qingdao University of Science and Technology (QUST). He is a senior member of IEEE, a Steering Co-Chair of IEEE MMTC, and a member of ACM. He is currently the department chair of Information Technology and the Center Director of Applied Computing at Kennesaw State University. Priorly, he worked as an Endowed Chair Professor at Illinois State University and a professor in CS at Ball State University 2013-2020, where he served on the Advisory Council of Scholarship for the Vice Provost for Research, the Dean's Faculty Advisory Board, and the assistant department chair of computer science. He also worked as an assistant professor at the School of Computing at the University of Southern Mississippi, a staff scientist at ADTRAN, and a member of technical staff at Bell Labs, Lucent Technologies. He has published over 85 peer-reviewed papers in wireless, IoT, smart health, and autonomous robotics. His research has been generously supported by NSF, NASA, Cisco, NVIDIA, Intel, Dell, ARM, Cypress Inc. and Microsoft. He has received four Best Paper Awards, including two from IEEE GC, a Faculty Excellence Award, and a First Place in the Graduate Student Forum.