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SenSIP Seminar Series

Hybridizing Digital /Physical Realities through Efficient Visual Processing Architecture

Presenter: Robert LiKamWa
Assistant Professor in AME & ECEE

September 28, 2018, 3:00 PM / Room: GWC 487

Abstract

Augmented reality and virtual reality systems fuse digital information with physical settings, creating experiences for contextual guidance, remote assistance, immersive education, and whimsical games. These systems rely on high-performance visual computing, presenting several system architecture challenges at the intersection of vision, graphics, sensing, and computer systems research. Towards unlocking a richer integration of digital and physical worlds, the Meteor Studio research laboratory at ASU studies efficient systems for high-performance visual processing under tight energy budgets, investigating optimizations in system architecture, drivers, libraries, and frameworks in mobile computer systems.

This talk will cover ongoing research projects from Meteor Studio, including: (i) a framework for real-time efficient illumination estimation towards photorealistic AR rendering, (ii) driver-level management for rapidly reconfigurable sensor capture, (iii) temperature-driven process scheduling strategies to enable stacked-integration visual sensor processing.

Biography:

Robert LiKamWa is an assistant professor at Arizona State University, appointed in the School of Arts, Media and Engineering (AME) and the School of Electrical, Computer and Energy Engineering (ECEE). There, LiKamWa heads the Meteor Studio research laboratory, advancing Mobile Experiential Technology through Embedded Optimization Research. Meteor Studio designs software and hardware systems to raise the performance, efficiency, and expressiveness of smartphones, tablets, IoT, VR/AR, drones, and other mobile systems. Prior to coming to ASU, LiKamWa completed his B.S., M.S., and Ph.D. degrees at Rice University in the Department of Electrical and Computer Engineering. He has also interned at Microosft Research in Redmond, Washington and in Beijing, China, Samsung Mobile Processor Innovation Lab in Richardson, Texas, and the National Institute of Standards and Technology in Boulder, Colorado.

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