

## COMPUTER SCIENCE RESEARCH SEMINAR

### **RTDroid: Toward Dynamic Real-Time Systems**

**Prof. Lukasz Ziarek**  
**SUNY Buffalo**

**Friday, October 6th at noon in room R15, Engineering Building**

**Abstract:** Time predictability is a requirement for computer systems that have deadlines to meet, but it is frustratingly difficult to achieve in the complex, layered, execution environments that are commonplace today. This talk will consider how to bring a degree of time predictability to Android applications. Potential solutions include fundamental changes to the Android framework and the introduction of a new programming model, which focuses on the interplay between real-time activities and the rest of the system. This talk will detail the changes in the Android APIs which are required for developers to express the timeliness requirements of code and how well those requirements can be met on stock hardware in the presence of multiple, potentially interacting applications. The talk will also cover some experimental data validating feasibility over several applications including UAV flight control, implantable medical devices, as well as a wind turbine monitoring device. Lastly, I will discuss future directions, including adding adaptivity to the system to achieve a dynamically defined real-time system.

**Bio:** Lukasz Ziarek is an assistant professor in the Department of Computer Science and Engineering at the State University of New York at Buffalo. He completed his Ph.D. at Purdue University in 2011. He works at the intersection of programming languages, real-time systems, and mobile systems. He has received several teaching awards, including University at Buffalo Innovative Teaching Award in 2017 and the School of Engineering and Applied Sciences Early Career Teacher of the Year in 2016.

**Co-sponsored with GSO and partially paid for by student activity fees.**

**Pizza will be provided!**