



SEMINAR

Computations by Oblivious Mobile Robots

Abstract: There has been a significant literature on computations that can and cannot be done by a system of simple mobile robots operating in the plane under *Look-Compute-Move* cycles. The robots are autonomous, anonymous, indistinguishable, history-oblivious, and without any direct means of communication. Despite these limitations, they need to work towards achieving a common goal. Most of the existing results in this model assumed that visibility is unobstructed, i.e., three collinear robots are mutually visible to each other. But, unobstructed visibility does not reflect reality, and very recently computations by these robots under obstructed visibility have been the subject of intensive research. In this talk, we will discuss some extensions on the robot model, present some recent research results, and highlight some open problems and possible future directions. In particular, we will do this for the fundamental *mutual visibility* problem, where starting from arbitrary distinct positions, the robots need to be relocated in finite time without collisions such that they reach a configuration in which they all see each other.

Biography: Gokarna Sharma is currently an assistant professor in the Department of Computer Science at Kent State University. He received his Ph.D. in Computer Science from Louisiana State University in 2014, where he was a postdoctoral researcher until August 2015. In Summer 2008, he was a summer consultant at the Enabling Computing Technologies (ECT) research domain of Alcatel-Lucent Bell Laboratories. His current research interests include parallel and distributed computing, sensor networks, emerging technologies, and communication, graph, and robotic algorithms.

Contact: Dr. Pooyan Fazli, p.fazli@csuohio.edu, 687.4668



Dr. Gokarna Sharma
Assistant Professor
Department of Computer Science
Kent State University

Friday, October 30th, 2015

1:30 PM

SR (Science Research) 151