



Illinois Center for Wireless Systems

ICWS Seminar Series



Singlehop Collaboration and Coordination Primitives for Wireless Sensor Actor Networks

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141 Coordinated Science Laboratory

Abstract:

I will talk about a decentralized transactional framework, Transact, that enables a node to update the state of its singlehop neighborhood consistently and atomically. One of the key insights in this framework is to observe that singlehop wireless broadcast has many useful features for facilitating collaboration and coordination. By exploiting the atomicity and broadcast properties of singlehop wireless communication, the framework provides a simple/clean abstraction and yet manages to retain concurrency of the underlying execution. As such, this framework will be useful for deploying distributed actuation/control applications as well as WSN in-network processing protocols.

Bio:

Murat Demirbas received his Master's and Ph.D. degrees from The Ohio State University in 2000 and 2004, respectively. While at the Ohio State University Murat was involved in the development and deployment of a 100 node wireless sensor network, "Line In The Sand", for detection, classification, and tracking, which paved the way to the "ExScal" network with 1000 nodes. After a one year post-doc with the Theory of Computing Group at MIT, Murat joined the Computer Science and Engineering Department of the University at Buffalo, SUNY, as an Assistant Professor in 2005. His research interests are in the areas of wireless sensor networks, distributed systems, and fault tolerance. Murat received an NSF CAREER award in 2008 for his research project titled "An In-network Collaboration and Coordination Framework for Wireless Sensor Actor Networks", and UB Exceptional Scholars Young Investigator Award in 2010. <http://www.cse.buffalo.edu/~demirbas>