Up-and-Coming Distinguished Lecturer

Supported by Jeffrey and Holly Ullman

Dr Seth Gilbert

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Seth Gilbert is currently a Postdoctoral researcher in the Distributed Programming Laboratory (LPD) at EPFL in Switzerland. His research focuses primarily on the challenges associated with highly dynamic distributed systems, particularly wireless ad hoc networks. Prior to EPFL, Seth received his PhD from MIT in the Theory of Distributed Systems (TDS) group under Professor Nancy Lynch. In 2003, Seth completed his Master's degree in Computer Science from MIT. Seth worked at Microsoft from 1999 through 2001, developing new tools to simplify the production of large-scale software. He graduated from Yale University with a Bachelor of Science degree in Electrical Engineering and Math in 1999.

Overcoming Disruption in Wireless Radio Networks

Wireless networks are particularly susceptible to malicious and malfunctioning devices. For example, a malicious device can easily jam the airwaves, disrupting all communication. In this talk, I will present new techniques for overcoming network disruptions in wireless networks, specifically in the context of multi-channel networks.

In order to provide some intuition as to the challenges posed by malicious disruption, I will begin by demonstrating a lower bound for oblivious gossip algorithms. (Underlying the lower bound proof lies an interesting connection between epsilon-gossip and extremal graph theory.) I will then present an adaptive algorithm that improves on the lower bound, relying on a new combinatorial tool, the multiselector (which, as a natural generalization of a selector, we believe to be of potentially independent interest). Finally, I will present a randomized algorithm that can tolerate even more severe forms of malicious misbehavior.

Joint work with Shlomi Dolev, Rachid Guerraoui, Darek Kowalski and Calvin Newport

14:00-16:00 on Tuesday, 08 April, 2008—Saal Auditorium, Alon Bldg (37/202)

יום ג׳ 08 באפריל 2008—באודיטוריום סאל בבנין אלון (202/37)   16:00-14:00