

Presents the Spring 2013 EECS Seminar Series

**Prof. Shmuel Katz**  
**Technion—Israel Institute of Technology**

**“Complex Event Processing with Reusable Event Detectors and Aspects”**  
**Wednesday, April 10, 2013 • 2:00 p.m. • HEC 356**

**ABSTRACT**

Many applications require extensive analysis of large streams of data, usually grouped under the topic of Complex Event Processing (CEP). Applications include gathering usage information about subscribers, or detection of security incursions. We are investigating how Aspect-Oriented Programming can be used to conduct CEP more efficiently and reliably than by using existing notations. In this context we show how results on reliable reusable aspects and formal verification can be applied to improve understanding, quality, and flexibility of CEP. Recent work is described on using abstraction refinement in model checking to semi-automatically develop precise specifications for event detectors and responses to them.

**BIOGRAPHY**

Shmuel Katz is a Professor of Computer Science at the Technion—Israel Institute of Technology, in Haifa, Israel, where he has been the head of the Software and Systems Development Laboratory, and directed the Software Engineering degree track. He is a past Editor-in-Chief of the Transactions on Aspect-Oriented Software Development and has written over 100 journal and conference papers, mainly on using formal methods to improve the quality and reliability of software. Some of the main topics he has treated include: automatic generation of invariants, multiparty interactions in distributed systems, using convenient execution sequences (scenarios) to specify and verify by exploiting partial order, and, in the last decade, modular specification and verification of programs with aspects.