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**IEEE KITCHENER-WATERLOO  
SECTION PRESENTATION  
IEEE Computer Society Chapter**

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University of Maryland, USA

**Testing Event-driven Software Applications:  
Issues, Challenges, and Solutions**

**Abstract**

A particular class of software that is fast becoming ubiquitous is event-driven software (EDS). All EDS share a common event-driven model they take sequences of events (e.g., messages, mouse-clicks) as input, change their state, and (sometimes) output an event sequence. Examples include web applications, graphical user interfaces (GUIs), network protocols, device drivers, and embedded software. Quality assurance tasks such as testing have become important for EDS since they are now being used in critical applications. This seminar will discuss some of the challenges of testing EDS, and show why existing testing techniques do not apply directly to EDS. A new model, called the "event-flow model" has been developed; much like how existing control-flow and data-flow models capture the control and data interactions in a program, the event-flow model captures event interactions in an EDS. The event-flow model for a particular class of EDS, namely GUIs, will be described. Algorithms and tools, built around the model, which have been used to automate several aspects of GUI testing, will be discussed.

**Biography**

Atif M. Memon is an Assistant Professor at the Department of Computer Science, University of Maryland. He received his BS, MS, and Ph.D. in Computer Science in 1991, 1995, and 2001 respectively. He was awarded a Gold Medal in BS. He was awarded Fellowships from the Andrew Mellon Foundation for his Ph.D. research. He received the NSF CAREER award in 2005. His research interests include program testing, software engineering, artificial intelligence, plan generation, reverse engineering, and program structures. He is a member of the ACM and the IEEE Computer Society.

**DATE: Friday March 17, 2006**  
**TIME: 11:00 a.m.**  
**LOCATION: DC 1304**

**University of Waterloo**  
**ALL ARE WELCOME!!**  
Refreshments will be served  
Invited by Professor Ladan Tahvildari