



## **A Framework for Behavioral Engineering of Software Systems**

Dr. Swaminathan Natarajan  
Dept. of Computer Science  
Rochester Institute of Technology  
Thursday March 27, 2003  
**(not a Wednesday!)**

Open to IEEE members and non-members  
5:15 Doors Open/Refreshments, 5:30 – 7:00 PM Presentation  
Kodak Camera Club Theater at Kodak Theater on the Ridge (B28)  
200 Ridge Road West  
Parking in Visitor Lot on South Side of Ridge Road  
<http://ewh.ieee.org/r1/rochester/comsoc/>

### **Abstract**

Modern software engineering processes and lifecycle models ensure that developers can follow systematic approaches to engineer software for functional correctness. The next frontier is to be able to take a similar engineering approach towards the non-functional aspects such as performance, dependability, usability and evolvability.

A number of techniques and methods have been evolved over the past 50 years to analyze and test for each of these "ilities", however most software engineers are barely aware that they exist, so approaches to obtaining desired behaviour are very ad hoc. One difficulty in taking a systematic engineering approach to determining the system profile is that there are tradeoffs among the attributes, so it is difficult to achieve all the desired engineering and business goals.

This talk will present a framework for taking such a systematic engineering approach. The framework includes an attribute classification, a process, and a basket of technologies for specification, design, analysis and testing. It will briefly indicate the results obtained when this framework was piloted at Motorola India.

### **Biography**

Dr. Swaminathan "Swami" Natarajan's background is in software engineering and real-time systems. He received his PhD from Univ of Illinois, and taught at Texas A&M for 5 years. His background includes working with Xerox on a real-time operating system, and with Motorola India on software engineering technologies for telecom software. He is currently teaching in the Computer Science Dept at RIT.

**Upcoming events on other side!**

### Upcoming Events

RIT has invited the Computer Society to attend their Dean's Lecture Series. The events are listed below with the Computer Society's Meetings see urls for meeting details.

**3/12** “**Logical Models of Software and How to Analyze Them**”, Daniel Jackson, MIT. Deans Lecture Series 2003 sponsored by B. Thomas Golisano College of Computing and Information Sciences at RIT, <http://www.rit.edu/~gccis/GCCISlectures.pdf>

**4/10** “**Object Recognition Using Large Structural Modelbases**”, Dr. Kim L. Boyer, Signal Analysis and Machine Perception Lab, The Ohio State University. This Computer Society presentation will be at the Rochester Section Joint Chapters Meeting. Dinner Keynote: Merrill Buckley, longtime IEEE activist and former President of IEEE-USA. Registration at <http://www.r1.ieee.org/~roch/jc03/>, abstract and biography at <http://www.computer.org/chapter/DVP/Boyer.htm>.

**5/16** “**Educating Software Professionals**”, Watts Humphrey, SEI. Deans Lecture Series 2003, sponsored by B. Thomas Golisano College of Computing and Information Sciences at RIT, <http://www.rit.edu/~gccis/GCCISlectures.pdf>