



Spring 2010 CIS Colloquium Series

Application-Driven Networking: A Case for Redesigning the Internet

Byrav Ramamurthy
(University of Nebraska - Lincoln)

11am-12pm, Thursday, April 1
TECH Center 111

Abstract: A new generation of networked applications is emerging which is pushing the limits of today's networks' scale, capacity, reliability, security and other capabilities. These applications have necessitated a rethinking of the design principles of the future Internet as evidenced by recent initiatives such as GENI, NSF FIND and EU FIRE. For example, emerging multimedia streaming applications have resulted in advances in overlay peer-to-peer network architectures and bandwidth allocation strategies. Data-intensive eScience applications which require huge data transfers between grid computing nodes have led to the emergence of Lambda Grid and other hybrid optical/packet network architectures.

In this talk, we will discuss our ongoing work on the following research problems in these application contexts: design of peer-to-peer networks to support multimedia streaming and scheduling of bandwidth and other resources in Lambda Grid networks. We will also discuss our regional networking testbed project funded by the NSF GENI initiative and a state-wide groundwater monitoring network funded by the USDA.

Bio: Byrav Ramamurthy received his B.Tech. degree in Computer Science from the Indian Institute of Technology, Madras (India) in 1993. He received his M.S. and Ph.D. degrees in Computer Science from University of California (UC), Davis in 1995 and 1998, respectively. He is currently an associate professor in the Department of Computer Science and Engineering at the University of Nebraska-Lincoln (UNL), where he has been on the faculty since August 1998. He is author of the book "Design of Optical WDM Networks - LAN, MAN and WAN Architectures" and a co-author of the book "Secure Group Communications over Data Networks" published by Kluwer Academic Publishers/Springer in 2000 and 2004 respectively. He currently serves as the Chair IEEE ComSoc Optical Networking Technical Committee (ONTC). He serves on the Editorial Boards of IEEE Communications Surveys and Tutorials (CST) and OSA Journal of Optical Networking (JON). He serves as a TPC Co-Chair for the IEEE INFOCOM 2011 conference. Prof. Ramamurthy is a recipient of the UNL College of Engineering and Technology Faculty Research Award for 2000 and the UNL Computer Science and Engineering Dept. Student Choice Outstanding Teaching Award for Graduate-level Courses for 2002-2003 and 2006-2007. His research areas include optical networks, peer-to-peer networks, wireless sensor networks and network security.

Refreshments will be served!