

Toledo IEEE Computer/Control Society Chapters

Optical High-speed Networking

Dr. Mohsen Guizani

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The Western Michigan University
IEEE Distinguished Lecturer



Meeting Time and Place

Wednesday, October 22, 2003
6:00 PM - 6:30 PM(Cash bar)
6:30 - 7:30(Dinner)
7:30 - 8:30 (Speaker Presentation)
Byblos Restaurant
1050 S. Reynolds Rd.
Toledo, OH
Non Members are Welcome to Attend!

Reservations

Reservations are required for this meeting and must be made by 5 PM on Monday, October 20, at 419-530-8143 or by visiting our website:
<http://www.ewh.ieee.org/r4/toledo/>
Please specify your entree choice when making your reservation.

Menu Selections

Choose an entree from: **Lasagna, Chicken Labobs, Beef Kabobs or Sauted Shrimp.**

The meal price includes a beverage (coffee, tea, etc.) and appetizers which are hummus, stuffed grape leaves and fatoosh salad.

Cost of the meal is \$20.00 per person. Please make checks payable to **IEEE Toledo Section.**



The Speaker

Dr. Mohsen Guizani is Professor and Chair of the Department of Computer Science at Western Michigan University. He was Full Professor and Chair of the Computer Science Department at the University of West Florida from 1999 to 2002. From 1996 to 1999, he was Associate Professor of Electrical and Computer Engineering and director of graduate studies at the University of Missouri-Columbia.

He is founder and Editor-In-Chief of Wireless Communications and Mobile Computing Journal, published by John Wiley and serves on editorial boards of IEEE Communications Magazine, Optical Network Magazine, Journal of Parallel and Distributed Systems and Networks, Cluster Computing: Journal of Networks, software tools and applications as well as International Journal of Computer Research. He is author of three books: Designing ATM Switching Networks (McGraw-Hill 1999), Wireless Systems and Mobile Computing (Nova Science Publishers 2001) and Optical Networking and Computing for Multimedia Systems, by Marcel Dekker, June 2002.

Abstract

There is an urgent need for instantaneous access to information on-line all around the world. On the other hand, continued growth of the global Internet is one of the most interesting and exciting phenomena in networking. Today, the Internet has grown into a communication system that reaches millions of people worldwide. In the US only, the Internet connects most corporations, colleges and universities, as well as federal, state, and local government offices. It has reached some elementary, junior, and senior high schools but soon will reach almost all the rest. In addition, many private residences have access to the Internet through dial-up telephone connections. But, newer technologies are providing even higher capacity services. Fiber-optic technology can be considered our hope for meeting this explosive growth due to its inherent advantages, such as its huge bandwidth, low attenuation, low signal distortion, low power requirement, and low cost. Since fiber has been used successfully as a medium, attention is now focusing on designing the all-optical network (including the switching, routing, and restoration) that will serve as backbone for the next generation Internet. To achieve this goal, few research questions have to be answered related to optical switch design architectures, quality of service (QoS), wavelength assignment, and survivability & fault-tolerance, just to name a few. Just a year ago, researchers at MIT, Harvard, and Stanford managed to stop the light, blistering at 186,000 miles/s, and send it off again. This represents a major innovation that will enable us to store data carried by photons (to be published in the Journals of Nature and American Physical Letters). In this seminar, we discuss the state-of-the art of designing the all-optical network that will serve as the Internet backbone, present the on-going research projects around the world in this field, and discuss some of our efforts in this regard. If time permits, we will present some other research efforts that lead to the same objective.

October 2003 Meeting