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ELECTRO/ INFORMATION TECHNOLOGY CONFERENCE

June 8 – 11, 2000

CHICAGO MARRIOTT O'HARE

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1ST IEEE
ELECTRO/INFORMATION
TECHNOLOGY CONFERENCE

June 8 – 11, 2000 • CHICAGO MARRIOTT O'HARE

8535 W. HIGGINS ROAD • CHICAGO, ILLINOIS 60631 • (847) 375-3426

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Sponsored by IEEE Region 4 in cooperation with IEEE West Michigan Section, Western Michigan University, RGBSI, OMRON, Microsoft, National Instruments, MathSoft, and others

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DEAR COLLEAGUES,

Welcome to the first IEEE Electro/Information Technology Conference and to the exciting city of Chicago! We have put together an outstanding program including keynote presentations on Intelligent Systems, Telemedicine, and The Future of Engineering of Computers. As experts in their field, moderators will lead panel discussions on issues such as the role of IT in higher education systems, intelligent controls, and product development cycle. There will be technology presentations by Microsoft, product presentations and demonstrations by Omron, and paper sessions which will deliver the latest findings by researchers and industrial investigators in the fields of electrical and computer engineering with applications in the emerging areas of information technology. There will be presentations in such interdisciplinary areas as mechatronics, biomedical applications, soft computing, and software engineering.

Workshops will introduce participants to the latest tools and applications of systems such as Virtual Instrumentation, MathCad applications (including animation), and the use of technology in distance delivery of engineering courses. In addition to being able to network with your peers and colleagues from around the world, you will be able to participate in an exchange of information in emerging technologies in the areas of wireless communications, signal/image processing, fuzzy systems, ethical, reliability and manufacturing issues, and industrial applications. In addition to sessions, the main plenary will include welcoming remarks by IEEE officers, an introduction by the president of Western Michigan University, Dr. Elson S. Floyd, keynote speakers Dr. Mark Smith of Georgia Tech, and Dr. Martha Sloan of Michigan Tech. The banquet keynote speaker will be Dr. Lotfi Zadeh, world renowned leader in the field of Fuzzy Logic.

Come be a part of our network!

Dr. Hossein Mousavinezhad
General Chair, EIT 2000
Western Michigan University

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We wish to extend a warm welcome and a gracious thank you to all of our sponsors: IEEE West Michigan Section, Western Michigan University, RGBSI, OMRON, Microsoft, National Instruments, MathSoft, and others for their generosity and support.

We are pleased to announce that during the reception, which is open to all participants, there will be a special presentation by Millimeter-Wave Products of OMRON giving an historical background of data communications which will culminate in a discussion of GigaLink radio. There will also be a live demonstration setup as part of the exhibits.

Thanks to a generous contribution by Microsoft Corporation, we are happy to announce that each full paying conference registrant will receive free, a Windows 2000 Professional (commercial value: $300) at the registration desk.

And also, thanks to the support provided by MathSoft, a limited number of MATHCAD 2000 Professional programs will be available to those registering early for the Conference/Workshop.

* Please consult the conference Web site for up–to–date information about workshops and presenters. Conference participants must sign up for the workshops due to limited seat availability. Send your request to Hossein Mousavinezhad, General Chair (hossein.mousavinezhad@ieee.org) after registering for the conference. Additional workshops will be added on Sunday, June 11, depending on interest and industrial participation.

THURSDAY, JUNE 8

REGISTRATION OPEN—11:00 A.M.–6:00 P.M.

The Registration Desk will be located in the Atlanta Foyer

EXHIBITS OPEN—2:00–5:00 P.M.

WORKSHOP*	TIME	PRESENTER
LabVIEW	Noon-3:00 P.M.	National Instruments
Technology Based Distance Education Process	1:00-4:00 P.M.	Daniel K. Apple, Pacific Crest

Effective Teaching from a Distance, addresses the issues that as distance learning courses increase throughout higher education, faculty members are becoming more interested in teaching/learning techniques and tools that are effective in this context. The workshop will explore the learning process and the implications of decreased contact between the learner and educator with respect to the following: the learner, the educator, course curriculum, and assessment. Participants in this active-learning workshop will analyze and practice various distance learning techniques including ten tips for "teaching at a distance." Curriculum and assessment designs will also be discussed to determine which aspects must be altered when classroom time is reduced and replaced with other diverse (interactive) sessions.

MATHCAD 2000: Animation Now	1:00 - 5:00 P.M.	MathSoft, TBA
MATLAB: Wavelets, Signal Processing Toolboxes	3:00-5:00 P.M.	Math Works, TBA

RECEPTION—6:00–8:00 P.M.   ALL E/IT CONFERENCE ATTENDEES ARE INVITED TO ATTEND

Please join us for the E/IT Conference Welcoming Reception as we gather together for professional networking and socializing.

In addition to meeting new colleagues from across the United States and around the world, there will be time to talk with old friends and colleagues, while sharing light refreshments.

As an added bonus, OMRON, Inc. from Schaumberg, Illinois, will have a special presentation by Millimeter-Wave Products providing a historical background of data presentations. The presentation will culminate in a brief discussion of GigaLink radio.

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FRIDAY, JUNE 9

REGISTRATION—7:00 A.M.–5:00 P.M.

EXHIBITS—8:00 A.M.–6:00 P.M.

8:00 – 9:45 A.M.—CONCURRENT SESSIONS

| PAPER SESSION 101, SOFTWARE ENGINEERING | PAPER SESSION 102, SIMULATION & MODELLING | TECHNOLOGY PRESENTATION I |

PAPER SESSION 101, SOFTWARE ENGINEERING

Chair: Yi Cheng

1. Quality of Service (QoS) Web—H. Liu, Z. Li, University of Massachusetts Dartmouth

2. Real-time Haptic Feedback in Internet-Based Telerobotic Operation—Imad Elhajj, Henning Hummert and Ning Xi, Michigan State University, Yun-hui Liu, Chinese University of Hong Kong

3. CORBA QoS Control Stream Architecture—Edward Babulak, Penn State Erie

4. On Finding Optimal Attribute Reducts—Dan Pan, Qilun Zheng, Guihua Wen, South China University of Technology

PAPER SESSION 102, SIMULATION & MODELLING

Chair: Art McGurn

1. Very High Speed A/D Converter Using Photonic Implementation of Neural Net Architecture and Oversampling Techniques—P.K. Das,RPI; B.L. Shoop, West Point; D.M. Litynski, WMU

2. A Sequential Evolution Strategy for Global Optimization Problems—Peng Hong, South China University of Technology

3. A Method for Deriving Anticipated Resource Usage After an Outage in a Mobile Dispatch Communication System—Donivon Hettich, Xiaofa Shi, John Vitallo, Motorola Inc.

4. An Efficient Algorithm for Optimum Planning in Radiotherapy—Sabbir Ahmad, Rahim Leyman, Chong Jen Lim, Ndnyang Technological University, Singapore

TECHNOLOGY PRESENTATION I

Mohammed Samji, Microsoft

9:45 – 10:00 A.M. — BREAK

10:00 A.M.–12:00 P.M. — MAIN PLENARY

Welcome and opening remarks by Hossein Mousavinezhad, E/IT Conference General Chair; Joseph Bordogna, Deputy Director of the National Science Foundation; Daniel Litynski, Dean of the College of Engineering and Applied Sciences, Western Michigan Univeristy, and Elson S. Floyd, President of Western Michigan Univeristy.

Mark J. T. Smith, Georgia Tech, Professor of Electrical Engineering and Special Assistant to the President, has authored many papers in the areas of speech and image processing, filter banks and wavelets, and object detection and recognition. He is a past Chairman of the IEEE SP Digital Signal Processing Technical Committee. His topic will be *Telemedicine.*

Martha Sloan, Professor of Electrical and Computer Engineering at Michigan Technological University, is the sole author of three books and numerous papers. She is a Fellow of ACM, IEEE, and SWE and has served as treasurer, vice president, and president of both the IEEE Computer Society and IEEE. Dr. Sloan's topic will be *The Future of Engineering of Computers.*

NOON–1:30 P.M. — LUNCH ON YOUR OWN

1:30-3:15 P.M.—CONCURRENT SESSIONS

PAPER SESSION 103, RELIABILITY & ETHICAL ISSUES

Chair: Janie Fouke

1. The Role of Reliability & Maintainability in Life Cycle Cost Reduction— Azim Houshyar, Western Michigan University
2. Ethical Considerations When Implementing Advanced Technologies—Charles W. Heil, Jr., University of Michigan
3. Integrating Digital Wireless Technology into Manufacturing Applications—Sarma R. Vishnubhotla, Subra Ganesan, Oakland University
4. Blind Signal Separation Techniques Using Hogher-Order Statistics— Ziauddin M. Kamran, A. Rahim Leyman, and K. Abed-Meraim, Nanyang Technological University

PAPER SESSION 104, ENERGY SYSTEMS

Chair: Farzad Pourboghrat

1. Remote Monitoring of Electrical Loads, A. Cole—A. Albicki, University of Rochester
2. Neuro-Fuzzy Design of a Duty-Cycle Compensation Controller for Dc-Dc Converters—D. Vasile, Ov. Grigore, A. Florescu, Oc. Grigore, Southern Methodist University
3. Model for the Estimation of Power Losses in Integrated Distribution Systems—I. Vujosevic, E. Spahic, Dj. Rakocevic, University of Montenegro

PAPER SESSION 105, DEVICES, CIRCUITS & SYSTEMS

Chair: Elias Strangas

1. Nonlinear Behavioral Model of Large Signal RF Power Amplifiers with Average Power Dependence— D. Fitzpatrick, Motorola, T. Wong, Illinois Institute of Technology
2. Simulation of a Surface Acoustic Wave Oxygen Sensor—M.Z. Atashbar, F. Severance, H. Mousavinezhad, Western Michigan University
3. Synthesis of Ionic Currents Using Reconfigurable Hardware—D.R. Reitman, Z. Ben-Miled, J. Schild, R. Chin, Purdue University

BREAK: 3:15–3:30 P.M.

3:30-5:30 P.M.—CONCURRENT SESSIONS

PANEL DISCUSSION I: THE ROLE OF IT IN HIGHER EDUCATION SYSTEMS

Moderator: Elson S. Floyd, President, Western Michigan University

Elson S. Floyd became Western Michigan University's sixth president in 1998. Prior to coming to WMU, he served as executive vice chancellor of the University of North Carolina at Chapel Hill and as executive director of the Washington State Higher Education Coordinating Board. In addition to being an active member of the community, he continues to write, present, and speak professionally.

(Panel Members TBA)

TECHNOLOGY PRESENTATION II

Mohammed Samji, Microsoft

PAPER SESSION 106, ELECTRONICS

Chair: Sanjeev Baskiyar

1. Built-In Testers for Analog/Mixed-Signal Circuits with CMOS Switched-Current Data Converters Techniques— Jin-Sheng Wang, Philips Semiconductors, Chin-Long Wey, Michigan State University
2. Design and Implementation of a Microwave Frequency Discriminator Employing Dielectric Resonator—E. Yuksel, T. Wong, Illinois Institute of Technology
3. On Impacts of ESD Protection Structure on Circuits Performance in Aluminum and Copper Interconnects— Ke Gong, Haigang Feng, Albert Wang, Illinois Institute of Technology
4. Comparison of Sensitivities of Acoustic Wave Devices for Sensing Chemical Components in Liquid Media—K. Kalantar-zadeh, M.Z. Atashbar, W. Wlodarski, K. Galatsis, RMIT University, Western Michigan University

6:30-9:30 P.M.—BANQUET AND SPEAKER

"Digital Systems Revolution: Is It Real?"— Dr. Lotfi A. Zadeh, University of California Berkeley