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EDUCATION

September 1988, Ph.D.	Department of Computer Science Title: "Design and Analysis of Local Area Network Protocols for Distributed Real-time Systems" Michigan State University, East Lansing, Michigan.
December 1983, M.S.	Department of Computer Science Purdue University, West Lafayette, Indiana.
June 1980, Principal Engineer.	Instiue Nationale De Recherches en Informatique et Automatique (INRIA), Paris. Ingénieur Principal D'Informatique Faculté Des Sciences

PROFESIONAL EXPERIENCE

2000-	**Professor and Department Chair**, Department of Computer Science University of Pittsburgh
2007-2010	**Division Director,** Computer Networks and Systems Computer and Information Science and Engineeering National Science Foundation
2005-2007	**Professor & Associate Chair** **Director** of CyberSphere Research Initiative **Co-Director** of Grid@Pitt Department of Computer Science

2000-2004	**Senior Program Director**, Networking Research Program **Chair** of **Information Technology Research** Initiative, **ITR'03** Division of Advanced Networking Infrastrcuture and Research Directorate of Computer and Information Science and Engineeering National Science Foundation **Professor**, Department of Computer Science, Joint appointment in Telecommunication School of Library and Information Science Joint Appointment in Computer Engineering School of Electrical Engineering University of Pittsburgh
1994-1999	**Associate Professor**, Department of Computer Science Joint Appointment in Telecommunication School of Library and Information Science Joint Appointment in Computer Engineering School of Electrical Engineering
1988-1994	**Assistant Professor**, Department of Computer Science Joint Appointment in Telecommunication School of Library and Information Science Joint Appointment in Computer Engineering School of Electrical Engineering

JOURNAL PUBLICATION

- Sherif Abdelwahab, B. Hamdaoui, M. Guizani, Taieb Znati: **Efficient Virtual Network Embedding With Backtrack Avoidance for Dynamic Wireless Networks**. To appear IEEE Transactions on Wireless Communications.

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SELECTED RESEARCH GRANTS

- **"Lazy Shadowing - An Adaptive, Power-Aware Resiliency Framework for Exascale Computing",** PIs: R. Melhem, and T. Znati. Total Award Amount: $964,435, Award Date: July 2015. (Department of Energy Office of Science, DE-SC0014376).

- "**From Sensors to Tweeters: A Sustainable Sociotechnical Approach for Detecting, Mitigating, and Building Resilience to Hazards**"; PIs: L. Comfort; T. Znati, and D. Mossé; Total Award Amount: $2,408,881.00; Award Date: 09/01/2013. (National Science Foundation).

- "**Exploratory Research on Scalable Resiliency through Shadow Computing and Differential Data Replication**", PIs: Taieb Znati and Rami Melhem; Total Award Amount: $299,800.00; Award Date: 01/01/2013. (National Science Foundation).

- "**Integrated Dynamic Spectrum Access for Throughput, Delay, and Fairness Enhancement**", PIs: T. Znati, X. Chen and B. Hamdaoui. Total Award Amount: $1,200,000; Award Date: 07/01/2012; (National Science Foundation).

- "**A Framework for Joint Optimization of Power Management and Performance In Virtualized, Heterogeneous Cloud Computing Environments**". PIs: T, Znati and K. Pruhs; Total Award Amount: $187,950.00; Award Date: 09/01/2012 (National Science Foundation).

- "**Cooperation Under Competition: System Implications for Dynamic Spectrum Access Computing Systems**" PIs: T. Znati and M.Weiss. Total Award Amount: $196,669.00; Award Date: 09/01/2011. (National Science Foundation).

- "**DRU: Designing Resilience for Communities at Risk: Decision Support for Collective Action under Stress**", PIs: L. Comfort, T. Znati and D. Mossé; Total Award Amount: $734,995.00; Award Date: 09/01/2007. (National Science Foundation).

- "**Flexible and Dynamic Workflow Design: Theory and Practice**", NSF/ITR, Principal Investigator (with Randy Chow); Total Award Amount: $630,132.00, Award Date: 10/01/2004 09/30/2007. (National Science Foundation).

- "**Dynamic Data Driven Defense Mechanisms for Cybersecurity**", PIs: T. Znati, D. Tipper, P. Krishnmurthy and J. Joshe, Total Award Amount: $104,537.00; Award Date: 08/29/2007. (National Science Foundation).

- "**Collaborative Research: CT-ISG: Fault-Tolerant and Secure Infrastructure for Time Critical Embedded Systems**", Co-PI: T. Znati D. Mossé, R. Melhem and W. Wu; Total Award: $259,926.00$200; Award Date: 09/01/2005; (National Science Foundation).

- "**Collaborative Research: NeTS-NBD: A Revolutionary 4D Approach to Network-Wide Control and Management**", PIs: H. Zhang, A. Greenberg J. Rexford, G. Xie and T. Znati, Total Award Amount: $1,400,000, Award Date: 09/01/. (National Science Foundation)

- "**Exploratory Research on Sensor Based Infrastructure for Early Tsunami Detection**", PIs: T. Znati, D. Mossé and L. Comfort, Total Award Amount: $199,214.00 Award Date: 02/08/2005 06/07/2007. (National Science Foundation)

- "**Design of Efficient Testing and Screening in Molecular Biology**", PIs: T. Znati; Award Amount: $100,000; Award Date: 09/01/2005. (National Science Foundation)

- "**Mobility-Based Clustering for Scalable and Responsive Routing in Ad-Hoc Networks**". PI: T. Znati; Award Amount: $229,425; Award Date: 09/01/00. (National Science Foundation)

- "**Distributed Interactive Development and Monitoring of Transportation Plans in Dynamic Environment**". PIs: M. Pollack and T. Znati; Award Amount: $528,410; Award Date: 01/01/92. (DARPA)

- "**Network Focused Technical College: Phase I**", PIs: T. Znati, M. Weiss and M. Sirbu, Award Amount: $767,970; Award Date: 05/01/92 (Digital Equipment Corporation).

- "**Network Focused Technical College: Phase II**", PIs: T. Znati, M. Weiss, J. Grasso, and Rich Thompson; Award Amount: $204,403; Award Date: 05/01/93 (Digital Equipment Corporation).

- "**Health Information Systems Initiative, Phase-I**". PIs: R. Sclabassi, T. Znati and S. Barnejee; Award Amount: $411,544, Award Date: 01/09/97. (Hewlett Packard)

- "**Health Information Systems Initiative, Phase-II**". PIs: R. Sclabassi, T. Znati and S. Barnejee; Award Amount: $89,000, Award Date: 01/09/98. (Hewlett Packard)

- "**CISE Research Instrumentation – Process Mapping and Load Balancing on HyperCube Architecture**", PI. M.L. Soffa, R. Melhem, and T. Znati; Award Amount: $124,300.00, Award Date: 01/01/90. (National Science Foundation)

- "**Integrated Service Network Design and Solutions Research**", PI: T. Znati; Award Amount: $125,272; Award Date: 01/09/98. (Fores Systems).

- "**Fault Tolerance and Scalability in I/O Computation**", PIs: T. Znati;   R. Melhem, H. Chuang, and D. Mossé; Award Amount: $43,697; Award Date: 01/01/98. (Computerm)

- "**Traffic Control and QoS Management On High Speed Networks**", PIs: T. Znati and M. Mickle; Total Award Amount: $54,000; Award Date: 09/01/96. (Bay Networks Inc.).

TEACHING

- CS 0046   : Introduction to Computer Concepts
- CS 1550   : Introduction to Operating Systems
- CS 1565   : Database Management Systems
- CS 1651   : Computer Operating Systems
- CS 1652   : Data Communication and Computer Networks
- CS1569   : Cloud Computing
- CS 2510   : Computer Operating Systems
- CS 2511   : Advanced Computer Operating Systems (Part 1)
- CS 2512   : Advanced Computer Operating Systems (Part 2)
- CS 2520   : High Speed WANs
- CS 2590   : Principles of Distributed Systems

- TELCOM 0104 : Computer-Based Telecommunications
- TELCOM 2015 : Computer Science Concepts
- TELCOM 2310 : Protocols and Interfacing
- TELCOM 2062 : Network Performance
- TELCOM 2320 : Local Area Networks
- TELCOM 2321 : High Speed WANs
- TELCOM 2082 : Networks and Distributed Systems
- TELCOM 3965 : Wireless and Sensor Networks

STUDENT ADVISING

Post-Doctoral Students
- **Fuli Ai, "**From Sensors to Tweeters: A Sustainable Sociotechnical Approach for Detecting, Mitigating, and Building Resilience to Hazards", 2013-
- **Mark Vorman, "**Immunity Inspired Intrusion Detection**;** 2013-2014

Graduated PH.D. Students
- Mehmud Abliz, "A Novel Puzzle-Based Framework for Mitigating Distributed Denial of Service Attacks against Internet Applications"; PhD, Department of Computer Science. Graduation Date: August, 2015.

- P.J. Dillon, "Enabling Tetherless Care with Context-Awareness and Opportunistic Communication"; PhD, Department of Computer Science; Graduation Date: December, 2014.
- Bryan Mills, "Power-Aware Resilience for Exascale Computing"; PhD, Department of Computer Science. Graduation Date: May 30, 2014.
- Iqbal Hamad," A Logically Centralized Approach for Control and Management of Large Computer Networks"; Ph.D., Telecommunications, Department of Information Sciences; Graduation Date: December 2012.
- Hui Ling, "A Framework for Enabling Energy Efficient Semantic Views in Wireless Sensor Networks for Data Intensive Applications"; Ph.D. Computer Science. Graduation Date: 2010.
- A. Gopalan, "Architecture and Protocols for Service and Application Deployment in Resource Aware Ubiquitous Environments", PhD, Department of Computer Science; Graduation Date: December 2010.
- Ihsan Ayyub Qazi (CS), "An Efficient Framework of Congestion Control for Next-Generation Networks", PhD, Department of Computer Science, Graduation Date: December 2010.
- Subrata Acharya, "Dynamic Traffic Driven Architectures and Algorithms for Securing Networks", PhD, Computer Science. Graduation Date: December 2006.
- Chatree Sangpachatanaruk, Telecommunication (DIS), "An Overlay Architecture for Personalized Object Access and Sharing in a Peer-to-Peer Environment", Telecommunications, Department of Information Sciences, Graduation, PhD, Graduation Date: December 2006.
- Masaru Okuda, "Scalable High Quality P2P Streaming Content Distribution Network", PhD Telecommunications, Department of Information Sciences, Graduation Date: December 2006.
- Gretchen Lynn, "RoMR: Robust Multicast Routing in Mobile Ad-Hoc Networks", Department of Computer Science, PhD, Graduation Date: November 2003.
- Tareen, S., "A Study of the Impacts of Pricing and User Budget Constraints on User and Network Behavior in Multiple Service Networks"; Ph.D. Department of Information Science, Telecommunication Program; Graduation Date: August 2001.
- Bruce McDonald, "A Mobility-based Framework for Adaptive Dynamic Cluster-based Hybrid Routing in Wireless Ad-hoc Networks"; Ph.D., Department of Information Science, Telecommunication Program; Graduation Date: August 2000.
- Michael Boykin, "A Network Framework for QoS-Aware Traffic Scheduling and Management in Integrated Services Networks"; Ph.D., Department of Computer Science; Graduation Date: April 1999.
- Abdulrahman Al Jadhai, "A Framework for Predictive and Adaptive QoS Support in Wireless Mobile Networks"; Ph.D., Department of Computer Science; Graduation date : April 1999.
- Tawfig Al Rabiah, "Multicast Routing For Real Time Communication on Wide Area High Speed Networks"; Ph.D., Department of Computer Science; Graduation Date: April 1999.
- Robert Simon, "An Integrated Communication Architecture for Distributed Multimedia Applications"; Ph.D., Department of Computer Science; Graduation: September 1996.

- Brian Field, "A Versatile Network Architecture to Support Real-Time Performance Guarantees"; Ph.D., Department of Computer Science; Graduation Date: December 1994.

Ph.D. Students in Progress
- Michael (Xialong) Cui
- Daniel Petrov
- Yu Qun
- Xerandy
- Veronica (Xiaoyu) Liang.

Ph.D. Candidates
- Debarun Das
- Longhao Li

M.S. Students

- Corey Alexander Furmanski, Department of Computer Science, in Progress
- Ha Song Nguyen, Department of Compute Sciecne, M.S. Project, Graduation Date: December 2013.
- Sambastiva R. Kanakamedala, Department of Computer Science: June 2000.
- Vineet Goel, Computer Science: Thesis, June 2000
- Sri R. Rao, Computer Science: Project, June 2000.
- Sibrina Shaffique, Telecommunication (DIS), Master Student, Graduation Date: April 2000.
- Kim Sungjin, Telecommunication, Department of Information Science, Master Degree, Graduation Date: April 1998.
- Stuart Roth, Department of Computer Science, Master Degree, Graduation Date: August 1997.
- Masaru Okuda, Telecommunication, Department of Information Science, Master Degree, Graduation Date: December 1996.
- Bruce McDonald, Telecommunication Department of Information Science, Master Degree, Graduation Date: December 1995.
- Dennis Bodziak, Department of Computer Science, Master Degree, Graduation Date: December 1994.
- Fang-chi Li, Telecommunication, Department of Information Science, Master Degree, Graduation Date: April 1994.
- I-ming Tsai, Telecommunication, Department of Information Science, Master Degree, Graduation Date: April 1993.
- Judith Molka, Telecommunication, Department of Information Science, Master Degree, Graduation Date: April 1992.
- Ketil Danielson, Telecommunication, Department of Information Science, Master Degree, Graduation Date: December 1991.
- Robert Cypher, Telecommunication (DIS) Master Degree, Graduation Date: Spring 1999.
- Piali Choudhury, Department of Computer Science, Master Degree, Graduation Date: Spring 1999.

- Prashant A. Desai, Computer Science Department, Master Degree, Graduation Date: April 1998.
- Michael Boykin, Computer Science Department, Master Degree, April, 1996.
- Sowmya Ramakrishna, Computer Science Department , Master Degree,
- April, 1998.
- Che-Ming, Chang, Telecommunication, Department of Information Science, Master Degree, Graduation Date: April 1998.
- Yuan Cheng, Computer Science Department, Master Degree, Graduation Date: September 1996.
- Anthony Belfiore, Department of Computer Science, Master Degree, Graduation Date: April 1995.
- Satya Venneti, Computer Science Department, Master Degree, Graduation Date: April 1995.
- Paul Kolonay, Computer Science Department, Master Degree, Graduation Date: April 1995.
- David Golub, Department of Computer Science, Master Degree, Graduation Date: August 1994.
- Beatrice Salazar, Computer Science Department, Master Degree, Graduation Date: December 1994.
- Veli Hakkomayez, Department of Computer Science, Master Degree, Graduation Date: December 1992.
- Andre Srinivasan, Department of Computer Science, Master Degree, Graduation Date: August 1992.
- Dean Palamedis, Department of Computer Science, Master Degree, Graduation Date: Fall 1990.

COMMUNITY SERVICE

Editorial Membership

- Editorial Board of the Journal on Wireless Systems and Mobile Computing
- Editorial Board of IEEE Security and Privacy
- Associate Editor, Journal on Ad-Hoc Networks
- Associate Editor, Journal on Wireless Networks
- Associate Editor, Journal of Ad-Hoc Networks
- Associate Editor, International Journal of High Performance Computing and Networking
- Associate Editor, International Journal of Sensor Networks
- Associate Editor of International Journal of Parallel And Distributed Systems And Networks

Conference and Workshop Service

- Chair, Wireless Networks Symposium GlobeCom 2014-

- Guest Editor, Special Issue on Dynamic Spectrum Access for Throughput, Delay, and Fairness Enhancement In Cognitive Radio Networks, Eurosip Journal on Wireless Communications and Networking, 2014.
- Guest Editor, Special Issue of IEEE Transactions on Parallel and Distributed Systems (TPDS) on Distributed Cyber-Physical Systems, 2009.
- Guest Editor, Special Issue on Bio-inspired Computing and Communication in Wireless Ad Hoc and Sensor Networks, 2009, Elsevier Ad Hoc Networks.
- Guest Editor, Special Issue on Modeling and Simulation of Emerging Wireless and Sensor Network Technologies and Applications, 2005.
- General Chair, SECON 2004, 1st IEEE Conference on Sensor and *Ad Hoc* Communications Networks
- Panel Chair, PerCom'05: Conference on Pervasive Computing
- General Chair of IEEE InfoCom 2005
- General Co-Chair, International Conference on Mobile Ad-hoc and Sensor Networks (MSN) 13 – 15 December 2005, Wuhan, China
- Co-chair of the First IEEE International Workshop on Sensor Network Protocols and Applications, 2005-06
- General Chair of UbiCare'06, First Conference on Ubiquitous and Pervasive Health Care
- General Chair of CCW'07, IEEE Computing and Communications Workshop
- General Chair of CNDS, the Communication Networks And Distributed Systems Modeling And Simulation Conference
- General Chair of the Annual Simulation Symposium
- Steering Committee Member, the ACM Conference on Embedded Networked Sensor Systems
- Member of the Steering Committee and Advisory Committee of the PDCS 2000.
- Panel Chair of High Speed Networks Workshop: The Terabit Challenge
- General Chair, Infocom 2005
- Program Committee Member of Infocom.
- Program Committee Member of the Security in Ad-Hoc Networks workshop/MobiCom 2002.
- Program Committee Member of MobiCom, Workshop Co-Chair.
- Program Committee Member of IC3N'98, Seventh International Conference on Computer, Communication and Networks
- Program Committee Member of DMS'98, Fifth International Workshop on Distributed Multimedia Systems
- Program Committee Member of CATA-98, Thirteenth International Conference on Computers and Their Applications
- Program Committee Member of the 1st World Congress On Systems Simulation, Singapore, September 1-4 1997.
- Program Committee Co-Chair DMS'07, 7th International Workshop on Distributed Multimedia Systems.
- Guest Editor of Special Issue On "Bio-Inspired Computing", June 2007
- Guest Editor of Special Issue On "Crisis Management", June 2007
- Guest Editor of the forth coming IJPDSN Special Issue On "Network Architectures for End-to-end Quality-of-Service Support

- Member of DMS'94 Pannel to discuss "Future Developments in Multimedia Systems from the Perspective of Reseachers, Developers and Users". Taipei, Taiwan, Feb. 1994.
- Local Program Chairman of the 5th ISMM Conference on Parallel and Distributed Computing and Systems, October 1992.
- Referee for the IEEE Computer Magazine and for P&DT (Parallel and Distributed) Magazine.
- Reviewer for NTIS, R&D, and Telecommunications.
- Reviewer for International Journal of Computer Simulation.
- Reviewer for the special Issue of IEEE Computer on Real-time Systems, Special Issue of JSAC, and special Issue of JPDC.
- Reviewer for several other conferences, including InfoCom, ICC, IC3N.

DEPARTMENTAL AND UNIVERSITY SERVICES

- Member of the "School of Computing Unit" Steering Committee, 2015-.
- Director of Graduate Studies, Computer Science Department, 2015.
- Chair of Graduate Admission and Financial Aid, Department of Computer Science, 2015.
- Member of Computing Research Committee, 2015.
- Co-Chair of Undergraduate Studies, 2012-2104.
- Full Member of Tenure Committee, 2006.
- Alternate Member of Tenure Committee, 1997-98
- Computer Engineering Program Committee, 1995-.
- Member of Computing and Infrastructure Committee, 1995-2000.
- Telecommunication Program Committee, 1988-2014.
- Laboratory Committee (Telecommunication Program), 1988-2014.
- Member of ECAC, and NCIWG, University of Pittsburgh, 1995-1999
- Member of the Information Architecture Review Committee, University of Pittsburgh 1995-96.
- Member of the Information Architecture Review Committee, University of Pittsburgh 1995-96.
- Graduate Admissions and Financial Aid Committee (Computer Science), 1990-94
- IS/Telecom Track Ph.D. Committee (Telecommunication Program), 1990-1992
- Library Committee (Telecommunication Program), 1989-1991
- Faculty Search Committee (Computer Science), 1989-1991, 2005-06
- Awards Committee (Telecommunication Program), 1988-1991

RECENT INVITED LECTURES AND PRESENTATIONS

- Keynote Speaker, "Computing at Scale – A Perspective on QoS-Resiliency of Fuuture Large Scale Systems", The 27th International Conference on Software Engineering and Knowledge Engineering, 2015.

- Keynote Speaker, "Computer and Network Systems Security – Opportunities and Outlook", CSIIRW, 6th Annual Cyber Security and Information Intelligence Research Workshop, April 21 - 23, 2010
- Keynote Speaker, "Challenges and Future Research Directions in Large-Scale Complex Systems". ICDCS 2008
- Keynote Speaker, "A Holistic Approach to Wireless Ad-Hoc and Sensor Networks Design and Deployment", International Conference on Mobile Ad-hoc and Sensor Networks (MSN) 13 – 15 December 2006, Wuhan, China
- Keynote Speaker, "Large Scale Distributed Systems Challenges and Research Directions", IWDC 2005: 7th International Workshop in Distributed Computing, December 2005, Kharagpur, India.
- Keynote Speaker, "Practical Approaches to Scalable and Adaptive algorithms for Wireless Networks", Adaptive Wireless Workshop, IEEE Global Telecommunications Conference, Globecom 2004, Dallas Texas, Dec. 2004.
- Keynote Speaker, "Future Directions in Networking Research: Are We Done Yet?", 23rd IEEE International Performance Computing and Communications Conference, April 15-17, 2004 - Phoenix, Arizona
- Keynote Speaker, "A Perspective on Future Directions in Networking Research: Are we done yet? International Conference on Information Technology: Research and Education (ITRE 2003) in Newark, N.J.
- Invited Talk, "Future Directions in Networking Research" in the COST(EU)-NSF(USA) Workshop in Exchanges & Trends in Networking in Chania, Crete, Greece.
- Keynote speaker, the Second ACM International Workshop on Wireless Sensor Networks and Applications
- (WSNA 2003), in conjunction with ACM MobiCom 2003, San Diego, Calif.,
- Invited Speaker at the Mobile Information and Communication Systems (MICS) Summer Research Seminar, Wednesday 5 July 2000, Swiss Federal Institute of Technology Lausanne (EPFL), "Mobility-based, Adaptive Routing and Clustering in Ad-Hoc Networks".
- Invited Talk, "Next Generation Networks: Trends and Design Issues", Sixth International Conference on Distributed Multimedia Systems, University of Aizu, Japan, July 26-30, 1999.
- Invited Talk, "Multicasting: Design Issues and Protocols". CONTel'99, Zagreb, Croatia, 1999.
- Invited Lecture, "LAN Interconnections". Westing House, Invited Lecture, October 22 1998.
- Plenary Speech, "Understanding Network Design Issues and Requirements for Future Multimedia Applications". The
- Fifth International Workshop on Distributed Multimedia Systems, Taiwan, July 25 1998.
- Invited Talk, "On ATM High Speed Networks". Fifth International Workshop on Distributed Multimedia Systems, Taiwan, July 23 1998.
- Invited Talk, "GpbsEthernet vs. ATM: A Debate", Telecommunication Management Association of Pittsburgh, Feb. 1998.
- Invited Talk, "Distributed Multimedia Systems: A Network and Application Perspective", ConTEL97, June 1997, Zagreb, Croatia.
- Invited Talk, "Fast Local Area Networks", GSIA Center for Executive Education Carnegie Mellon University, February 1997.

- Invited Talk, "Internetworking in Wide Area Networks", GSIA Center for Executive Education Carnegie Mellon University, February 1997.
- Invited Talk, "High Speed Local Area Networks", Telecommunication Management Association of Pittsburgh, Feb. 1997.
- Invited Talk, "Distributed Planning in Dynamic Environment", ARPI Phase III Kick-off Workshop, June 12-15, 1995, San Diego.
- Invited Talk, "A Perspective on Multimedia Synchronization". Multimedia '95, May 15-19, 1995.
- Invited Talk, "High Speed Networking To Support MultiMedia Applications: A Tutorial", Pacific Distributed Multimedia Systems Workshop, Taipei, Taiwan, Feb. 25-27, 1994. 131-148.
- Invited Talk, "High Speed Networking". US-APEC Partnership for Education, Institute Of Systems Science, National University of Singapore, Feb 21-23, 1994, Singapore.
- Invited Talk, "Distributed Systems Design and Specification". Software Engineering Institute, Carnegie Mellon University, December 10th, 1993.
- Invited Talk, "Programming Abstractions for Distributed Multimedia Applications". ACM Multimedia '93 Workshop, ACM Multimedia '93 International Conference, August 3, 1993, Anaheim, California.
- Invited Talk, "Developing Client/Server Applications". US-APEC Partnership for Education, Institute Of Systems Science, National University of Singapore, May 3-5, 1993, Singapore.
- Invited Talk, "MedNet: A Multimedia Medical System" IEEE Tutorial and Workshop on Multimedia Computing, Carnegie Mellon University, Pittsburgh, PA, March 22-24, 1993.
- Invited Talk, "Communication Network Architectures, Protocols and Internetworking". Carnegie Mellon University, Information Networking Institute, ATI program, January 7 1993, May 11 1993.
- Invited Talk, "Client/Server Connectivity in Multivendor Environment". Network Focused Technical College, March 15, 1993.
- Invited Talk, "DIPART: A Distributed Multiagent Planner". DARPA-Rome Laboratory Planning Initiative Workshop.
- San Antonio, Texas, February 23-25, 1993.
- Invited Talk, "Fundamental Concepts of Communication Protocols and Internetworking". Carnegie Mellon University, Information Networking Institute, ATI program, January 1992.
- Invited Talk, "Communication Protocol Architectures and Design Issues ". Carnegie Mellon University, Information Networking Institute, ATI program, April 1992.
- Invited Talk, "Medium Access Control for Local Area Networks". Carnegie Mellon University, Information Networking Institute, ATI program, April 1991
- Invited Talk "Networking in a Multiprotocol Environment". Network Focused Technical College, August 1992.
- Invited Talk, "Issues in Distributed Systems". CPDIS Annual Meeting Alcoa, September 1989.

SCHOLARLY AWARDS AND HONORS

Recipient of the Division Director abcd Award, National Science Foundation 2010.
Recipient of the "ITR abcd Award", National Science Foundation, June 2001.
Recipient of the Teaching Excellence Award, Department of Computer Science University of Pittsburgh, 04-05, and 05-06.
Recipient of the Franco-Tunisian inter-cooperative Fellowship
Recipient of the Amideast Scholarship Award.