

Magda El-Zarki

Department of Computer Science
Donald Bren School of Information and Computer Science
University of California, Irvine
Irvine, CA 92697-3425
Tel: (949) 824-8584
Email: elzarki@uci.edu, WWW: [//www.ics.uci.edu/~magda](http://www.ics.uci.edu/~magda)

Education

- *Columbia University*, New York, NY
Department of Electrical Engineering
M.S.E.E. October 1981
Ph.D. January 1988
- *Cairo University*, Cairo, Egypt
Department of Electrical Engineering
B.S.E.E. July 1979

Professional Experience

- *University of California - Irvine*, Irvine, CA
Department of Computer Science,
Bren School of Information and Computer Science
Professor (September 1999 - present)
Secondary Appointment: Dept. of Electrical and Computer Engineering, Henry Samueli School of Engineering, (September 00 - present)
Secondary Appointment: Dept. of Informatics, Bren School of Information and Computer Science (2008 – present)
Director of Institute for Virtual Environments & Computer Games (IVECG) (2013 – 2018)
- *Fulbright Scholar*, Mumbai, India
Affiliated with the Indian Institute of Technology, Bombay.
Visiting Professor (June 2012 - March 2013)
- *University of Pennsylvania*, Philadelphia, PA
Department of Electrical Engineering
Assistant Professor (January 1988 - June 1994)
Associate Professor (July 1994 - August 1999)
Secondary Appointment: Dept. of Computer & Information Science (January 1989 - August 1999)
Secondary Appointment: Dept. of Systems Engineering (Dec. 1997 - August 1999)
- *Fulbright Scholar*, Cairo, Egypt
Affiliated with Cairo University, Ain Shams University and the Electronics Research Institute
Lecturer and Research Scientist (October 1996 - February 1997)
- *Delft University of Technology*, Delft, The Netherlands
Faculty of Electrical Engineering

Professor of Telecommunication Networks (May 1993 - December 1995, May 2005 - December 2008)

- *Citibank NA*, New York, NY
Division of International Telecommunications
Manager of Network Planning (June 1981 - May 1983)

Professional Activities

IEEE Senior Member (2007)

Editorial Board: *Ad Hoc Networks*, Elsevier Publ. (2003 - 2005)

Editorial Board: *Wireless Personal Comm.*, Kluwer Acad. Publ. (1993 - 2003)

Editorial Board: *Wireless Networks*, ACM Press/Kluwer Academic Publ.(1993 - 2003)

Editorial Board: *Computer Networks and ISDN*, Elsevier Publ. (1993 - 1999)

Editorial Board: *Transactions on Networking*, IEEE/ACM (1995 - 2000)

Steering Committee: *Transactions on Networking*, IEEE/ACM (2010 - 2012)

Editorial Board: *Transactions on Embedded Computing Systems*, ACM (2013 - 2015)

Board of Governors, IEEE Communications Society (Jan. 95 - Dec. 97)

Member of IEEE Technical Computer Communications Committee (TCCC)

Member of IEEE Communications Society Awards Committee 2003 - 2005

Conference Coordinator for IEEE TCCC (1991-1993)

Secretary of IEEE TCCC (1993-1995)

Vice Chair of IEEE TCCC (1995-1997)

Technical Program Chair – IEEE INFOCOM 1994

Vice Technical Program Chair – IEEE INFOCOM 1993

Co-Technical Program Chair – IEEE ANTS 2012

Co-Technical Program Chair – ACM MOBICOM 1998

Co-Technical Program Chair – ICNP 2001

Co-Technical Program Chair – MobiMedia 2007

Chair Packet Video Workshop 2004

Chair IEEE Computer Communications Workshop (CCW) 2005

Co-Chair Personalized Networks Workshop (PerNets) 2006

Tutorial Chair - IEEE INFOCOM 1991

Tutorial Chair - ACM SIGCOMM 1990

Tutorial Co-Chair - ACM Mobicom 2006

Technical Program Committee - IEEE INFOCOM 1989-98, 2000-02, 2004-05

Technical Program Committee - ACM SIGCOMM 1990-92, 1996

Technical Program Committee - ICNP 1993, 1997, 2002-07

Technical Program Committee - ACM Packet Vid 1997-07, 2009-10, 2012-13, 2018-19

Technical Program Committee - ACM MultiMedia Systems , 2006, 2016 - 19

Technical Program Committee - ACM NetGames 2015-17

Technical Program Committee - ACM Mobile Video 2007, 09, 2011-17

Technical Program Committee - Massively Multiuser Virtual Env (MMVE) 2015-19

Technical Program Committee - Wireless Network Systems (WinSys) 2011 – 19

Technical Program Committee - IEEE WoWMoM 2008 - 09, 2011

Technical Program Committee - Wired/Wireless Internet Comm. (WWIC) 2008 - 09

Technical Program Committee - IEEE PIMRC 1994

Technical Program Committee - Intl. Symp. MM over Wireless (ISMW) 2006-07

Technical Program Committee - IMMERSCOMM 2006-07

Technical Program Committee – ORSA Telecommunications Conf. 1995, 1998
 Technical Program Committee – MMNC 2003-04
 Technical Program Committee – MedHocNet 2004
 Technical Program Committee – IEEE Globecom GI & NGN 2004
 Technical Program Committee – IEEE BroadNets 2004
 Technical Program Committee – IEEE WirelessComm 2005
 Technical Program Committee – IEEE Multimedia 2005 - 06
 Technical Program Committee – IEEE NIME 2010
 Technical Program Committee – IEEE ICC SAC 2009
 Technical Program Committee – MobiMedia 2006 - 07
 Technical Program Committee – TridentCom 2006 - 07
 Technical Program Committee – IFIP Personal Wireless Comm. (PWC) 2004, 2006
 Technical Program Committee – IEEE Local Computer Networks (LCN) 2004
 Technical Program Committee – IEEE Picture Coding Symposium (PCS) 2004
 Technical Program Committee – SPIE Int'l Symp. On Voice, Video & Data Comm. 1997
 Technical Program Committee – ACM MOBICOM 1999, 2002
 Technical Program Committee – IFIP Conf. on Broadband Communications 1999
 Technical Program Committee – IEEE Int'l Conf on Distr. Comp SysICDCS 2010
 Technical Program Committee – IFIP Int'l Conf on New Tech, Mob & Sec 2010
 Technical Coordinator – IEEE ICC 1990
 Session Organizer: ICC, INFOCOM, GLOBECOM, Computer Comm. Workshop

Honors and Awards

- Best Paper Award – “Performance Analysis of DS-CDMA with Slotted Aloha Random Access for Packet PCNs,” Z. Liu and M. El Zarki, *IEEE Personal, Indoor & Mobile Radio Conf. (PIMRC)'94*, The Hague, The Netherlands, September 1994.
- “Cor Wit” Term Chair at Delft University of Technology, Delft, The Netherlands, August 2005 - December 2006.
- Best Paper Award – First Place: “Backlight Optimization Scheme for Video Playback on Mobile Devices,” Liang Cheng, Shivajit Mohapatra, Magda El Zarki, Nikil Dutt and Nalini Venkatasubramanian, *3rd IEEE Consumer Communications and Networking Conference (CCNC06)*, Las Vegas, NV: January 8-10, 2006
- Recipient of School of ICS 2011 Dean’s Award for Service: Feb. 2011
- Recipient of UC Irvine 2011 Celebration of Teaching Award, School Honoree – May 2011
- Fulbright Scholar – Cairo, Egypt (Sept. 1996 - Feb. 1997)
- Fulbright Scholar – Mumbai, India (June 2012 - March 2013)
- Bronze Medal – International Serious Play Awards for game *Sankofa* (May 2018)
- Best Workshop Paper Award, "Improving the Quality of 3D Immersive Interactive Cloud-Based Services Over Unreliable Network," De-Yu Chen and Magda El Zarki, ACM MMVE, The Netherlands, June 2018.
- Best Overall Workshop Paper - "Improving the Quality of 3D Immersive Interactive Cloud-Based Services Over Unreliable Network," De-Yu Chen and Magda El Zarki, ACM Multimedia Systems (MMSys) 2018, Amsterdam, The Netherlands, June 2018.

Referee

National Science Foundation: Panelist 1991 - 1997, 2002 – 2010, 2016
National Science Foundation Workshops: Residential Broadband Networks and Future of Networking, Cloud Computing (2016), AR/VR Vision (2018)
National Science Foundation: Committee of Visitors 1998
Fulbright Commission: Panelist 1998, 1999
Benjamin Franklin Partnership Program: 1997-98
Scientific Foundation of Ireland: Panelist 2007-2010
IEEE Transactions on Communications
IEEE Transactions on Vehicular Technologies
IEEE Transactions on Circuits and Systems
IEEE Transaction on Multi Media
IEEE/ACM Transactions on Networking
IEEE Journal on Selected Areas in Communications
IEEE Communications Magazine
IEEE Letters in Communications
Computer Networks and ISDN Systems
Performance Evaluation
Telecommunications Systems
Conferences (Sampling): INFOCOM, ICC, GLOBECOM, SIGCOMM, MOBICOM, ICUPC, ICNP, WCNC, ICWN, MMCS, INFORMS, MMSys, WinSys, SigMap, NetGames, MMedia

University Activities

- *University of Pennsylvania*
 - Search Committee, Telecommunications Chair, (1988 – 1989)
 - School of Eng. & Appl. Science - Faculty Council (1991 – 1995)
 - Dept. of Elc. Eng. Undergraduate Curriculum Review Comm. (1993 – 1994)
 - Manager of Computing Resources, Elc. Eng. Dept. (1988 – August 1999)
 - Distributed Systems Laboratory Committee (1988 - August 1999)
 - Director of Telecommunications Program (October 1997 – August 1999)
 - Chair, Telecommunications Search Committee (September 1997 – October 1998)
 - Ad-Hoc Committee in Elc. Eng. to study B.S. in Comp. Eng. (1997 – 1998)
- *University of California, Irvine*
 - Vice Chair for Graduate Affairs, July 2000 – 2002
 - Layer Leader – Cal-(IT)2 May 2002 – 2004
 - Chair of CAL-(IT)2 Search Committee on Mobile Computing 2003
 - Chair of ICS Search Committee on Networked Systems 2003
 - Member of Search Committee for CAL-(IT)2 Directorship 2003
 - Member of Council on Budget and Planning June 2003 – 2006
 - Director of Computer Science and Engineering Program 2004
 - Co-Director of Networked System Program 2003 – 2005
 - Director of Networked Systems Program 2005 – 2007
 - Associate Dean of Research and Development, School of ICS 2008 – 2011
 - Director of Center for Computer Games and Virtual Worlds 2009 – 2012
 - Chair Steering Committee Computer Game Science Program 2010 – 2012
 - Director of Institute of Virtual Environments and Computer Games 2013 – 2018

Dean Review Committee - The Henry Samueli School of Engineering, UCI
Committee on Academic Personnel (CAP) 2016 - 2019
Hellman Scholarship Review Committee - 2018

Courses Taught

- *University of Pennsylvania*
Wireless Networks (TCOM 510)
Principles of Data Communications (TCOM 370)
Networking: Principles and Practice (TCOM 500)
Advanced Telecommunication Networks (TCOM 502)
Networking: Fundamentals and Theory (TCOM 501)
Seminar on Telecommunication Networks (TCOM 670)
Signals and Systems (EE 314)
Discrete Signals and Systems (EE 325)
Telecommunication Networks I (Executive course EX 615)
Telecommunication Networks II (Executive course EX 616)
Electrical Measurements Lab (EE 214)
Real Time Systems and Architectures (EE 300)
- *TU Delft*
Integrated Networks (ET03-30)
- *University of California, Irvine*
Advanced Networking (ICS156/133)
Wireless and Mobile Networks (ICS 236)
Computer Networks Lab (NetSys 202/CS 233)
Introduction to Networks (MCS 232P)
Data Transmission (NetSys 270)
Multi Player Online Game Systems (ICS 167)
Introduction to Computer Networks (CS 232P)
- *IIT Bombay*
Online Game Systems (CSE 620/453)

Ph.D. Dissertation Supervision

University of Pennsylvania: 1988 -1999

- Saewoong Bahk "Routing for Interconnected Networks and High Speed Wide Area Networks," Dept. of Systems Engineering, (Graduated August 1991).
- Sanjay Gupta "Performance Modeling and Management of High-Speed Networks," Dept. of Systems Engineering, jointly with Dr. K. Ross, (Graduated January 1993).
- Pramod Pancha "Video Services and BISDN," Dept. of Electrical Engineering, (Graduated May 1994).
- Zhao Liu "Resource Allocation in Mobile Communication Networks," Dept. of Electrical Engineering, (Graduated September 1995).
- Wenjun Luo "Video Transport over BISDN," Dept. of Electrical Engineering, (graduated July 1997).
- Hang Liu "Low Bit Rate Video over Wireless Channels," Dept. of Electrical Engineering, (graduated October 1997).

- Hairuo Ma “Transmission and Transport Broadband Video Services Over Wireless Access Networks,” Dept. of Electrical Engineering, (graduated September 1999).
- Kenneth S. Lee “IP Based Wireless Multimedia Transmission,” Dept. of Electrical Engineering, (on leave from program).

University of California – Irvine; 1999 - present

- Haining Liu “Protocol Support for Video and Voice Transmission over IP based Networks,” Dept. of Computer Science, (graduated August 2005).
- Liang Cheng “Error Resilient MPEG4 for Wireless Networks,” Dept. of Computer Science, (graduated August 2005).
- Arulsaravana Jeyaraj “Robust High Capacity Cellular Networks for Video Transmission,” Dept. of EECS, (graduated September 2008).
- Shih-Hsien Yang “Video Streaming on Collaborated Mobile Devices over Wireless Mesh Networks,” Dept. of Computer Science, (May 2012).
- Yunho Huh ‘’ iXercise: An Exergaming platform for Re-Hab,” Networked Systems Program, (graduated March 2019).
- De-Yu Chen ‘’Cloud Gaming and Quality of Experience,’’ Networked Systems Program, (on leave of absence since June 2018).

Research Support

Past and Current

- R1. “Routing for High Speed Networks,” A.T.&T. Telecommunication Technology Grant, September 1987 - August 1990. (\$185,000, PI)
- R2. “A Network of Loosely Coupled Microprocessors: Testbed for Routing Algorithms,” NSF Equipment Grant, Program in Networks and Communications Infrastructure, June 1988 - December 1988. (\$63,000, PI)
- R3. “Performance Modeling and Planning of Heterogeneous Data Networks,” A.T.&T. Telecommunication Technology Grant, October 1988 - August 1991. (\$450,000, co-PI with Dr. K. Ross and Dr. G. Anandalingam of Systems Engineering)
- R4. “Mobile Satellite Service for Trucking and Public Safety,” Benjamin Franklin Partnership Program, September 1988 - August 1989. (\$150,000 co-PI with Dr. E. Morlok, Dr. T. Frieze of Systems Engineering and Dr. S. Bedrosian of Electrical Engineering)
- R5. “Investigation of Architectural Influence on Parallel Algorithms,” PEW Science Program Faculty Research Collaborations, October 1988 - September 1989. (\$12,500 co-PI with Dr. D. Hyde, Computer Science Dept., Bucknell University)
- R6. “Performance Analysis of Broadband ISDN Networks,” NSF Program in Networks and Communications Infrastructure, June 1990 - May 1992. (\$379,000, co-PI with Dr. K. Ross of Systems Engineering)
- R7. “NSF Research Experience for Undergraduates,” related to NSF grant: Performance Analysis of Broadband ISDN Networks, NSF Program in Networks and Communications Infrastructure, summer 1990. (\$8000, PI)

- R8. "Hardware for Video Research," A.T. & T. Foundation Special Purpose Grants in science and engineering, October 1990. (\$18,000, co-PI with Dr. H. Sorensen of Electrical Engineering)
- R9. "Hardware for Video Research," Pennsylvania State Equipment Matching Funds. April 1990. (\$9,000, co-PI with Dr. H. Sorensen of Electrical Engineering)
- R10. "Video Services and Broadband ATM Networks," NSF Program in Networks and Communications Infrastructure, June 1991 - May 1993. (\$450,000, co-PI with Dr. H. Sorensen of Electrical Engineering)
- R11. "NSF Research Experience for Undergraduates," related to NSF grant: Performance Analysis of Broadband ISDN Networks, NSF Program in Networks and Communications Infrastructure, summer 1991. (\$10,000, co-PI with Dr. K. Ross of Systems Engineering)
- R12. "Video Services and BISDN," NSF Equipment Grant, Program in Engineering, June 1992 - May 1993. (\$66,000, co-PI with Dr. H. Sorensen of Electrical Engineering)
- R13. "Hardware for Video Research," A.T. &T. Foundation Special Purpose Grants in science and engineering, September 1992. (\$22,000, co-PI with Dr. H. Sorensen of Electrical Engineering)
- R14. "NSF Research Experience for Undergraduates," related to NSF grant: Performance Analysis of Broadband ISDN Networks, NSF Program in Networks and Communications Infrastructure, summer 1992. (\$5,000, PI)
- R15. "NSF Research Experience for Undergraduates," related to NSF grant: Video Services and Broadband ATM Networks, NSF Program in Networks and Communications Infrastructure, summer 1992. (\$10,000 co-PI with Dr. H. Sorensen of Electrical Engineering)
- R16. "NSF Research Experience for Undergraduates," related to NSF grant: Video Services and Broadband ATM Networks, NSF Program in Networks and Communications Infrastructure, summer 1993. (\$10,000 co-PI with Dr. H. Sorensen of Electrical Engineering)
- R17. "NSF Research Experience for Undergraduates," related to NSF grant: Video Services and Broadband ATM Networks, NSF Program in Networks and Communications Infrastructure, summer 1994. (\$10,000 co-PI with Dr. H. Sorensen of Electrical Engineering)
- R18. "Transport of Video Services over BISDN," NSF Program in CISE/NCR, Sept. 1994 - Aug. 1997. (\$240,000 co-PI with Dr. H. Sorensen of Electrical Engineering)
- R19. "A Network Testbed for Video Transport," A.T.&T. Foundation Special Purpose Grants in science and engineering, September 1994. (\$31,000, co-PI with Dr. H. Sorensen of Electrical Engineering)
- R20. "NSF Research Experience for Undergraduates," related to NSF grant: Transport of Video Services over BISDN, NSF Program in Networks and Communications Infrastructure, summer 1995. (\$5,000)
- R21. "NSF Equipment Supplement," related to NSF grant: Transport of Video Services over BISDN, NSF Program in Networks and Communications Infrastructure, May - August 1995. (\$25,000)
- R22. "A TestBed for Wireless Broadband Communications," A.T.&T. Foundation Special Purpose Grants in science and engineering. (\$38,000, co-PI with Dr. S. Kassam of Electrical Engineering)

- R23. "A TestBed for Wireless Multimedia Communications," A.T.&T. Foundation Special Purpose Grants in science and engineering. (\$35,000, co-PI with Prof. S. Kassam of Electrical Engineering and Prof. J. Smith of Comp. and Information Science)
- R24. "Wireless Transmission of Low-Bit-Rate Video," NSF Program in CISE/NCR, Sept. 1996 - Aug. 2001. (\$670,000, co-PI with Prof. S. Kassam of Electrical Engineering)
- R25. "Adaptive Network Control for VBR Video Transmission," NEC Research, Princeton, NJ. (\$13,000).
- R26. "Video on Demand Transmission Systems," NSF Program in CISE/NCR, Sept. 1997 - Aug. 2001. (\$184,000, co-PI with Prof. K. Ross of Systems Engineering)
- R27. "Multimedia over the New Internet and Multimedia Web servers," First USA Bank, January 1999 - August 2000. (\$252,000).
- R28. "Analysis and Development of a Capacity and Bandwidth Provisioning tool for IP based backbone networks carrying Multimedia Applications in Developing Countries," USAID in Cairo, Egypt, July 1999 – August 2002. (\$50,000, co-PI with Dr. Tarek Kamel from ERI Egypt)
- R29. "Application Driven Evaluation, Design and Implementation of Network Services and Resource Sharing Models," NSF Program in CISE/NCR, Oct. 1999 - Aug. 2002. (\$984,000, co-PI with Prof. R. Guerin and Prof. J. Smith, University of Pennsylvania)
- R30. "ORU Proposal in Networking and Middleware at UCI," UCI, July 2000 – June 2002. (\$30,000, co-PI with several faculty from both ICS and ECE at UCI)
- R31. "Internet 2 Lab," UCI, July 2000 – June 2001. (\$225,000, co-PI with Prof. Rajesh Gupta, UCI)
- R32. "NSF-PI Conference 2000," NSF Program in CISE/NCR, Oct. 2000 – September 2001. (\$185,000, co-PI with Professors Suda, Tsudik, Venkatasubramanian and Jordan, UCI)
- R33. "Performance Analysis of Broadband Printing Services (BPS) Architecture," Canon Information Systems, Jan. 2001 – Dec. 2002. (\$129,935)
- R34. "MPEG 4 based Services over Wireless Networks," Conexant, Sept. 01 – Aug. 02. (1yr. Full Student Fellowship)
- R35. Gift from Conexant to support my research effort in the area of MPEG-4, March 2001. (\$35,000).
- R36. "Internet 2 Teaching Lab.," UCI, jointly with Rajesh Gupta from ICS, UCI and Scott Jordan from ECE, UCI, Sept. 2001 – August 2002. (\$200,000).
- R37. "US-EGYPT Cooperative Research: A New Quality of Service Video Conferencing Model Across the Internet," NSF, Sept. 2002 – August. 2007. (\$30,000)
- R38. "An Integrated Framework for Health Monitoring of Highway Bridges and Civil Infrastructure," ITR-Medium, NSF, Oct. 2002 – Sept. 2007. (\$3,500,000 jointly with faculty at UCSD and USC)
- R39. "Power Aware Communications for Cellular Networks," Mindspeed (through the auspices of CPCC at UC, Irvine), Sept. 2002 – August 03. (1 yr. Full Student fellowship)
- R40. "An infrastructure to Support First Responders," RI-NSF. (\$1,800,000 jointly with UCSD, UCI portion \$900,000 7/1/04 – 6/30/09.)

- R41. “Low Bit Rate Video Codecs for Wireless Systems,” Mindspeed (through the auspices of CPCC at UC, Irvine), Sept. 2004 – August 05. (1 yr. Full Student fellowship)
- R42. “Immersive Computational Science,” Large-Scale Interdisciplinary Research Ignition Initiative, ICS-HSSOE, March 2010 – Feb. 2011. (\$40,000)
- R43. “iScience,” Graduate Growth Incentive Award (GgIA), UCI, June 2010 – May 2011. (\$90,000)
- R44. “Workshop: Research Directions and Challenges in Computer Games and Virtual World Environment,” NSF IIS, July 1, 2010 – June 30, 2011. (\$45,000, jointly with Walt Scacchi)
- R45. “EAGER: REAQTIVE - Resource Aggregation and Quality Tradeoffs for Integration of Video projector Ensembles,” NSF EAGER, October 1, 2010 - September 30, 2011. (\$100,000 jointly with Aditi Majumder and Fadi Kurdahi)
- R46. “Equipment for CGS Lab,” Provost Instructional Lab Funding, UCI, April 2011 – December 2013. (\$80,000 jointly with Dan Frost)
- R47. “MS in Computer Games,” Graduate Growth Incentive Award (GgIA), UCI, June 2011 – May 2012. (\$30,000)
- R48. “Early Identification of Autism through a Virtual World Parent-training Model,” Multi Investigator Faculty Research Grant #MI 15-2010-2011, Academic Senate Council on Research, Computing and Libraries (CORCL), May 2011- April 2012. (\$16,000)
- R49. “ORU – Institute for Virtual Environments and Computer Games,” ORA, UC Irvine, July 1, 2013 – June 30, 2018. (\$560,000)
- R50. “African Slave Trade – Before the Middle Passage: The Untold Story,” CORCL Multi-Investigator Research Grant-Proposal #MIIG-2013-2014-2, Academic Senate Council on Research, Computing and Libraries (CORCL), June 2014 - July 2015. (\$12,000)
- R51. “Sankofa – An EduGame on West African Culture,” ICS Dean \$10,000 and Illuminations \$2000, April – June 2016.

Publications

Refereed Journals

Published/Accepted

- J1. “MAGNET: Columbia's Integrated Network Testbed,” A.A. Lazar, A. Patir, T. Takahashi, and M. El Zarki, *IEEE Journal on Selected Areas in Communications*, Vol. SAC-3, No. 6, November 1985, pp. 859-871.
- J2. “An Optical Fiber-Based Integrated LAN for MAGNET's Testbed Environment,” A. Patir, T. Takahashi, Y. Tamura, M. El Zarki and A. A. Lazar, *IEEE Journal on Selected Areas in Communications*, Vol. SAC-3, No. 6, November 1985, pp. 872-881.
- J3. “Dynamic Bandwidth Allocation on an Integrated Slotted Ring,” San-qi Li and M. El Zarki, *IEEE Transactions on Communications*, Vol. COM-36, No. 7, July 1988, pp. 826-833.
- J4. “Routing and Flow Control in High Speed, Wide Area Networks,” N.F. Maxemchuck and M. El Zarki, *Proceedings of the IEEE*, Vol. 78, No. 1, January 1990, pp. 204-221.

- J5. "Performance Analysis of Virtual Circuit Connections for Bursty Data Traffic in an ATM Network," N. Shroff and M. EL Zarki, *Annals of Operations Research*, 35(1992), pp. 297-323.
- J6. "Packet Loss recovery Schemes in Interconnected LAN-WAN-LAN Networks," M. El Zarki and N. Shroff, *Computer Communications*, Vol. 15, No. 1, January/February 1992, pp. 23-36.
- J7. "A Dynamic Multi-path Routing Algorithm for ATM Networks," S. Bahk and M. El Zarki, *Journal of High Speed Networks*, Vol. 1, No. 4, 1992, pp. 215-236.
- J8. "Bandwidth Requirements of VBR Video Coders in ATM based BISDN," P. Pancha and M. EL Zarki, *IEEE Transactions on Circuits and Systems for Video Technology*, June 1993, Vol. 3, No.3, pp. 190-198.
- J9. "Traffic Classification and Scheduling in ATM Networks," S. Gupta and M. El Zarki, *Telecommunication Systems*, Vol. 2, No. 1, January 1994.
- J10. "MPEG Coded Video and BISDN," P. Pancha and M. El Zarki, *IEEE Communications Magazine*, Vol. 32, No. 5, May 1994 pp. 54-66.
- J11. "MPEGTool: An X Window Based MPEG Encoder and Statistics Tool," T. Urabe, H. Afzal, G. Ho, P. Pancha and M. El Zarki, *ACM/Springer Multimedia Systems Journal*, Vol.1, March 1994.
- J12. "SIR Based Dynamic Code Channel Allocation in DS CDMA Cellular Systems," Z. Liu and M. El Zarki, *IEEE Journal on Selected Areas in Communications*, special issue on CDMA based Mobile Systems, Vol. 12, No. 4, May 1994, pp. 638-644.
- J13. "Congestion Control Based Dynamic Routing in ATM Networks," S. Bahk and M. El Zarki, *Computer Communications*, Vol. 17, No. 12, December 1994, pp. 826-835.
- J14. "Performance Analysis of DS-CDMA with Slotted Aloha Random Access for Packet PCNs," Z. Liu and M. El Zarki, *ACM/Baltzer Journal for Wireless Networks*, Vol. 1, No. 1, January 1995.
- J15. "Transmission of Video Telephony Images over Wireless Networks," Hang Liu and M. El Zarki, *ACM/Baltzer Journal for Wireless Networks*, Vol. 2, No. 3, 1996, pp. 219-228.
- J16. "A Demand Assignment Access Control Approach to Multi-Code DS-CDMA Multi-Rate Wireless Packet (ATM) Networks," Zhao Liu, M. Karol, M. El Zarki and K. Eng, *ACM/Baltzer Journal for Wireless Networks*, Vol. 2, No. 3, 1996.
- J17. "Quality Control for VBR Video over ATM Networks," Wenjun Luo and M. El Zarki, *IEEE Journal on Selected Areas in Communications*, Vol. 5., No. 6, August 1997, 1029-1039.
- J18. "Performance of H.263 Video Transmission over Wireless Channels Using Hybrid ARQ," Hang Liu and M. El Zarki, *IEEE Journal on Selected Areas in Communications*, Vol. 15, No. 9, December 1997, pp 1775 - 1786.
- J19. "Error Control for Networks: An overview," Hang Liu, Hairuo Ma, M. El Zarki and Sanjay Gupta, *ACM/Baltzer Journal for Mobile Networks and Applications (MONET)*, Vol. 2 (1997), pp. 167-182.
- J20. "Adaptive Source Rate Control for Real-Time Video Transmission over Wireless Networks Using Hybrid ARQ Error Control," Hang Liu and M. El Zarki, *ACM/Baltzer Journal for Mobile Networks and Applications (MONET)*, Vol. 3, No. 1, pp. 49-60, 1998.

- J21. "Broadcast/multicast MPEG-2 video over broadband fixed wireless access networks," Hairuo Ma and M. El Zarki, *IEEE Network Magazine*, Vol. 12, No. 6, Nov./Dec. 1998, pp. 80-93.
- J22. "Delay and Synchronization Control Middleware to Support Real-Time Multimedia Services over Wireless PCS Networks," Hang Liu and M. El Zarki, *IEEE Journal on Selected Areas in Communications*, Vol. 17, No. 9, pp. 1660-1672, Sept. 1999.
- J23. "A new transport protocol for broadcasting/multicasting MPEG-2 video over wireless ATM access networks," Hairuo Ma and M. El Zarki. *ACM Press/Kluwer Academic Wireless Networks (WINET)*, summer 2002.
- J24. "A Bluetooth Based Sensor Network for Civil Infrastructure Health Monitoring," Vipin Mehta and Magda El Zarki, *ACM Press/Kluwer Academic Wireless Networks (WINET)*, Special Issue on Wireless Ad-hoc Networking, summer 2004.
- J25. "Adaptive Delay and Synchronization Control for Wi-Fi Based Mobile AV Conferencing," Haining Liu and Magda El Zarki. *Kluwer Academic Wireless Personal Communications*, Special Issue on Advances on Wireless LANs and PANs, 2005. (Expanded version (30%) of conference paper C88)
- J26. "Quality Adapted Backlight Scaling (QABS) for Video Streaming to Mobile Handheld Devices," L. Cheng, S. Bossi, S. Mohapatra, M. El Zarki, N. Venkatasubramanian and N. Dutt, *Springer-Verlag LNCS ICN*, April 2005. (Archived version of conference paper (C92).)
- J27. "An Adaptive Delay and Synchronization Control Scheme for Wi-Fi Based Audio/Video Conferencing," Haining Liu, and Magda El Zarki, *ACM Press Wireless Networks (WINET)*, Special Issue on Wireless QoS Support, 2006. (Extended version of J25, includes nonstationary traffic traces.)
- J28. "Proposal for a Cross Layer scheme for Real Time Wireless Video," Arulsaravana Jeyaraj, Liang Cheng, Magda El Zarki, *Journal of Zhejiang Univ. SCIENCE A*, Springer-Verlag Publ., Vol. 7, 2006. (Archived version of conference paper (C95).)
- J29. "Quality-Based Backlight Optimization for Video Playback on Handheld Devices," Liang Cheng, Shivajit Mohapatra, Magda El Zarki, Nikil Dutt and Nalini Venkatasubramanian, *Journal on Advances in Multimedia*, vol. 2007, Article ID 83715, July 2007.
- J30. "Clouds + Games: A Multifaceted Approach," Debadatta Mishra, Reza Rahimi, Magda El Zarki, Aiman Erbad, Cheng-Hsin Hsu, and Nalini Venkatasubramanian, *IEEE Internet Computing*, Vol. 18, Issue 3, March 2014, pp. 20-27.
- J31. "Mobile Collaborative Video," Kiarash Amiri, Shih Hsien Yang, Aditi Majumder, Fadi Kurdahi, Magda El Zarki, *IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, Vol. 24, Issue 9, Sept. 2014, pp. 1594-1604.
- J32. "A Framework for Adaptive Residual Streaming for Single-Player Cloud Gaming," De-Yu Chen and Magda El Zarki, *IEEE Trans. On Multimedia Computing, Communications and Applications (TOMM)*. Vol. 15, Issue 2s, July 2019.

Refereed Book Chapters

Published/Accepted

- B1. "Performance Evaluation of MAGNET Protocols," M. El Zarki, A.A. Lazar, A. Patir, and T. Takahashi, **Local Area and Multiple Access Networks: Advances in Telecommunication Networks**, edited by W. Chou, Computer Science Press, Rockville, Maryland, 1986, pp. 137-154.
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Invited Talks

National

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10. "Performance of the Leaky Bucket Scheme and a Loss Measure for Variable Bit Rate MPEG video," invited talk at the *5th Workshop on Very High Speed Networks*, University of Maryland, Baltimore, MD, March 1994.
11. "Video Transport: Quality Control," invited talk at the *6th Workshop on Very High Speed Networks*, University of Maryland, Baltimore, MD, October 1995.
12. "Video Transport: Quality Control," *Purdue University*, West Lafayette, IN, October 1995.
13. "Video Transport: Quality Control," *IEEE Chapter of NJ, Holmdel Section*, Holmdel, NJ, November 1995.
14. "H.263 video transport over wireless channels using hybrid ARQ," *Nortel*, Dallas, TX, May 1996.
15. "Low Bit Rate Video over Wireless Channels," *NJ Inst. Of Technology*, Newark, NJ, October 1997.
16. "Receiver Initiated Renegotiation for VBR Video Transmission," invited talk at the *8th Workshop on Very High Speed Networks*, University of Maryland, Baltimore, MD, October 1997.
17. "Low Bit Rate Video over Wireless Channels," *Bell Labs*, Murray Hill, NJ, December 1997.
18. "Low Bit Rate Video over Wireless Channels," *Polytechnic University of NY*, Brooklyn, NY, February 1998.
19. "Low Bit Rate Video over Wireless Channels," NIST, Gaithersburg, MD, February 1998.
20. "Wireless and Mobile Networking," Tutorial at *INFORMS*, Boca Raton, FL, March 1998.
21. "Low Bit Rate Video over Wireless Channels," *Drexel University*, Philadelphia, PA, April 1998.
22. "Video Transmission over Wireless Networks: Issues and Challenges," *A.T. & T. Research*, Red Bank, NJ, May 1999.
23. "Real Time Video Transmission over IP Networks," *Conexant*, Newport Beach, CA, April 2000.
24. "High Quality Video Transmission," (in collaboration with Jiang Fu), *Stream Machine*, San Jose, CA, May 2000.
25. "MPEG4 Transmission over QoS based IP Networks," (in collaboration with Jiang Fu and Haining Liu), *Packet Video*, San Diego, CA, February 2001.

26. "MPEG4 Services over IP based Networks," tutorial presentation at *IEEE Infocom 2001*, Anchorage, Alaska, April 2001.
27. "A Hands on TCP/IP Teaching Lab," invited presentation at *CAIDA ITL Workshop*, University of Virginia, Charlottesville, VA, June 2001.
28. "The Future of Wireless Networking," invited presentation at *NREN/NSF Workshop on Mobile Terrestrial and Space Networking*, San Jose, CA, June 2001
29. "Video Encoding and Quality," invited presentation at the *CENIC Application Workshop Series - Demystifying Internet Quality of Service (QoS): Making QoS Work for You*, San Diego Supercomputer Center (SDSC) at UC San Diego, January 2002.
30. "MPEG 4 – Interactive Client Server Systems," invited talk at UCLA, Dept. of CS, Los Angeles, June 2002.
31. "MPEG 4 – An Overview of Object based Coding," invited talk at UCLA, Dept. of CS, Los Angeles, June 2003.
32. "Robust and Resilient Video Transmission over Wireless Channels for Handheld Devices," *Mindspeed*, Newport Beach, CA, June, 2004.
33. "Can WiFi Hotspots Survive without QoS?," *Panel at the IEEE Qshine Conf.*, Dallas, TX, October 2004.
34. "MultiMedia and the Internet," *Houston Greater Council on Education*, Houston, TX, March 2007.
35. "Elmina Slave Castle," Invitation to National Endowment for the Humanities-funded Advanced Topics in the Digital Humanities Summer Institute on Advanced Challenges in Theory and Practice in 3D Modeling of Cultural Heritage Sites. Univ. of Mass., Amherst, June 21 -28, 2015.
36. "Sankofa - An Ethnographic Study of West African Culture and History," Museum of African Art, Smithsonian Institute, Washington D.C., April 6th, 2016.
37. "Elmina and Sankofa: A West African Cultural and Historical Journey Experience," Invitation to National Endowment for the Humanities-funded Advanced Topics in the Digital Humanities Summer Institute on Advanced Challenges in Theory and Practice in 3D Modeling of Cultural Heritage Sites. Univ. of CA, Los Angeles., LA, CA, June 20 -22, 2016.
38. "From 3D to a Video Game," *OC Contacts*, The Pacifica Club, Newport Beach, Sept 15th, 2016.
39. "The realities and pitfalls of developing games in an academic setting," *Media Arts and Technology Graduate Program*, UC Santa Barbara, Nov. 20th, 2017.
40. "The making of Sakofa – An edugame on West African culture for middle school children," *Undoing Racism Workshop*, UC Irvine, January 12th, 2018.
41. "Developing Games for Education – Sankofa," Workshop for Israeli Consortium of Faculty Development, UC Irvine Extension, February 1st, 2019.

International

1. "Performance Evaluation of Integrated Media Access Protocols on MAGNET," *INRIA*, Roquencourt, France, September 1986.
2. "Dynamic Bandwidth Allocation in an Integrated Services Environment," *Delft University of Technology*, Delft, The Netherlands, March 1989.
3. "Performance Comparison of Packet Loss Recovery Schemes in Interconnected High Speed Networks," *Politecnico di Milano*, Italy, May 1990.

4. "A Routing Scheme for a Non-Strict Hierarchical Networking Environment," *Twente University of Technology*, Enschede, The Netherlands, May 1990.
5. "Video Services and BISDN," *Delft University of Technology*, Delft, The Netherlands, July 1992.
6. "Video Services and BISDN," *Bell Northern Research*, Ottawa, Canada, December 1992.
7. "SIR Based Dynamic Code Channel Allocation in DS CDMA Cellular Systems," *IEEE Local Chapter Workshop on Wireless Networks*, Delft, The Netherlands, June 1993.
8. "Multi-Code CDMA for Multirate Wireless PCNs," *Delft University of Technology*, Delft, The Netherlands, March 1995.
9. "Multi-Code CDMA for Multirate Wireless PCNs," *Twente University*, Enschede, The Netherlands, March 1995.
10. "Video over IP," *Cairo University*, Cairo, Egypt, March 2004.
11. "Delay and Synchronization Control," *Cairo University*, Cairo, Egypt, March 2004.
12. "Robust and Resilient Video Transmission over Wireless Channels for Handheld Devices," *Tech. Univ. Berlin*, Berlin, Germany, June 2004.
13. "Robust and Resilient Video Transmission over Wireless Channels for Handheld Devices," *Tech. Univ. Delft*, Delft, The Netherlands, September 2004.
14. "Robust and Resilient Video Transmission over Wireless Channels for Handheld Devices," *Universiteit Twente*, Enschede, The Netherlands, September 2004.
15. "Advances in Video Coding and Transmission," *Tech. Univ. Delft*, Delft, The Netherlands, September 2005.
16. "Advances in Video Coding and Transmission," *Universiteit Twente*, Enschede, The Netherlands, September 2005.
17. "Do we Need QoS?" *Tech. Univ. of Delft*, Delft, The Netherlands, October 2006.
18. "Online Game Systems – The Role of the Network," **Plenary** talk at the World Congress on Information and Communication Technologies (WICT) 2012, Trivandrum, India, October 30th, 2012.
19. "Online Game Systems – The Role of the Network," **Plenary** talk at the Asian Internet Engineering Conference (AINTEC) 2012, November 14th, 2012. (Also gave a one day workshop at the Asian School of Computer Science affiliated with the Conference.)
20. "Online Game Systems – The Role of the Network," **Plenary** talk at the Third Asian Himalayas International Conference on Internet (AH-ICI) 2012, November 24th, Kathmandu, Nepal.
21. "Online Games – A Networking Perspective," **Keynote** at QShine 2013, January 11th, 2013, Greater Noida, Delhi, India.
22. "Online Games – A Networking Perspective," Invited talk at IITD, New Delhi, India, April 1st, 2013.
23. "Online Games – A Networking Perspective," Invited talk at IIITD, New Delhi, India, April 2nd, 2013.
24. "Online Games – A Networking Perspective," **Keynote** at Intl. Conf. on Comm. Sys. And Networking Tech., April 7th, 2013, Gwalior, India.
25. "Online Games – A Networking Perspective," Invited talk at BHU, Varanasi, India, April 12nd, 2013.

Personal Data

Female, divorced, three children, US citizen

Languages

Fluent in English and Dutch, fully conversant in Arabic and French.