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Academic Experience

2018-	Affiliated Member of the Center for Computing Systems for Data-Driven Science Analytics of the Data Science Institute, Columbia University.
2015-	Member of the NeuroTechnology Center at Columbia University.
2013-	Co-Director of the Center for Neural Engineering and Computation, Columbia University.
2013-	Affiliated Member of the Center of Foundations of Data Sciences and the Center of Health Analytics of the Data Science Institute, Columbia University.
2010-	Mentor of the Columbia Doctoral Program in Neurobiology and Behavior.
1997-1998	Chairman of the Electrical Engineering Department, Columbia University.
1988-	Professor, Associate Professor (1984-1988), Assistant Professor (1980-1984), Department of Electrical Engineering, Columbia University.
1973-1980	Research Assistant, Department of Electrical Engineering and Computer Science, Princeton University; Research Associate (1976), Research Institute of the German Post, Telephone and Telegraph Administration (FTZ Darmstadt), Speech Signals Processing Research Group; Research Assistant, Department of Electrical Engineering, Technische Hochschule Darmstadt.

Industrial Experience

1998-2001	Chairman and Chief Executive Officer of Xbind, Inc., a high tech startup located in Manhattan's Silicon Alley. In early 1998 formed Xbind, Inc., licensed the technology he developed at Columbia University and raised the financial backing ($7.5 million) for the development of the xbindIP line of products.

Research Leadership/Management

2013-	Co-Director of the Center for Neural Engineering and Computation, Columbia University.
2012-	Co-Founder of the Systems Biology and Neuroengineering Group, Department of Electrical Engineering, Columbia University.
2004-	Co-Founder of the Systems Biology Group, Department of Electrical Engineering, Columbia University.
2004-	Founder and Director of the BIONET Group.
2002-2004	Executive Director of the Center for Resilient Networks, New York, NY.
1994-2004	Founder and Director of the COMET Group.
1991-1997	Program Manager of the Multimedia Networking Group, Institute of Systems Science, Singapore. Established a research group in networking with emphasis on multimedia networking and service creation. By the summer of 1997 the group had strength of 30 researchers.
1989-1995	Member of the Executive Committee (1989, 1985-1987), Acting Technical Director (1986-1987), and Co-Founder of the Center for Telecommunications Research, Columbia University.
1980-1994	Founder and Director of the Telecommunication Networks Laboratory (1988-1994), Computer Communications Research Laboratory (1983-1988), Communications and Controls Computer Laboratory (1980-1983), Department of Electrical Engineering, Columbia University.

Research Leadership/Research

2016-	Leader of the Fruit Fly Brain Observatory (**FFBO**), a Worldwide Collaborative Effort between Experimentalists, Theorists, and Computational Neuroscientists with the Goal to Create an Open Platform for the Emulation and Biological Validation of Fruit Fly Brain Models in Health and Disease (http://fruitflybrain.org).
1994-1998	Chief Architect of **xbind** broadband kernel.
1984-1990	Chief Architect of **MAGNET II** (1986-1990), an Integrated Metropolitan Area Network Based on Asynchronous Time Sharing, and **MAGNET** (I) (1984-1986), a Testbed for Integrated Local Area Networks, Center for Telecommunications Research, Columbia University.

Areas of Research

In silico:	Computing with Brain Circuits.
In vivo and In silico:	The Molecular Architecture and the Functional Logic of the Fruit Fly Brain.

Education

1976-1980	Ph.D. (1980), M.A. (1978), M.S.E. (1977), Department of Electrical Engineering and Computer Science, Princeton University.
1972-1976	Master of Science Degree in Telecommunication Engineering, Department of Electrical Engineering, Darmstadt Institute of Technology (THD), Darmstadt, Germany.
1967-1971	Studies at the Department of Electrical Engineering, the Bucharest Polytechnic University, Bucharest, Romania.

Ph.D. Dissertation

1980	Lazar, A.A., "Optimal Information Processing Using Counting Point Process Observations," IEEE Transactions on Information Theory, Vol. IT-27, No. 3, 1981, pp. 387 (sponsor: Prof. Stuart C. Schwartz).

Awards

2003-	IFIP/IEEE Dan Stokesberry memorial award for distinguished technical contributions to the growth of the field of network management.
1993-	IEEE Fellow (citation: for optimal flow control and quality of service management in broadband networks).
1976-1978	Fellowship (2 years) of the German Academic Exchange Service awarded on the basis of a national competition.
1976 July	Fellowship of the Carl-Cranz-Gesellschaft.
1967 June	First prize in the National Mathematics Competition for high school seniors (Bucharest, Romania).

Keynote Speaker

2010	Time Encoding Machines and Elements of Spike Processing, 25th International Symposium on Computer and Information Sciences, September 22-24, 2010, The Royal Society, London.
2004	Networking Games, Plenary Speaker at the 7th INFORMS Telecommunication Conference, Boca Raton, FL, March 7-10, 2004.

1998 Resource Allocation and Networking Games, Plenary Speaker at the 8th International Symposium on Dynamic Games and Applications, Maastricht, The Netherlands, July 5-8, 1998.

1997 ATM: A Technology in Crisis? Keynote Speaker at the International Workshop on Synthesis of ATM Networks, Montreal, Canada, September 24-26, 1997.

1997 Programming Telecommunication Networks, Keynote Speaker at the International Workshop on QOS, New York, USA, May 19-21, 1997.

Editorship

2015-2016 Guest-Editor, Biological Applications of Information Theory in Honor of Claude Shannon's Centennial, Part I and Part II", IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, Volume 2, Number 1 and 2, June and December 2016.

2009-2011 Guest-Editor, Journal of Computational Neuroscience, Special Issue on Methods of Information Theory in Neuroscience, February 2011.

2004- Member of the Editorial Board, IEEE Transactions on Network and Systems Management.

2001 Guest-Editor of the Special Issue on Active and Programmable Networks, IEEE Journal on Selected Areas in Communications, Vol. 19, No. 3, March 2001.

1998 Guest-Editor of the Special Issue on Quality of Service Architectures, ACM/Springer Verlag Multimedia Systems, May 1998.

1996- Area Editor for Network Management, ACM - Baltzer Mobile Networks and Applications.

1996 Guest-Editor of the Special Issue on Distributed Multimedia Systems, IEEE Journal on Selected Areas in Communications, Vol. 14, No. 7, September 1996.

1994- Member of the Editorial Board, Journal of Multimedia Tools and Applications, Kluwer Academic Publishers.

1993 Guest-Editor of the Special Issue on Network Management and Control, IEEE Journal on Selected Areas in Communications, Vol. 11, No. 9, December 1993.

1993-1997 Member of the Editorial Board of Multimedia Systems, ACM/Springer Verlag (1993-1997).

1991-1996 Member of the Editorial Board Telecommunication Systems (1991-1996), Baltzer Science Publishers.

1991-1993 Area Editor for Network Management (1991-1993), IEEE Transactions on Communications.

1991 Guest-Editor of the Special Issue on Congestion Control for High Speed Networks, IEEE Journal on Selected Areas in Communications, Vol. 9, No. 7, September 1991.

1989-1991 Editor for Voice/Data Networks, IEEE Transactions on Communications (1989-1991).

1987-1997 Editor for Telecommunication Networks and Computer Systems (Monograph Series), Springer-Verlag, New York (1987-1997).

Chairman and/or Program Chair

2018 Organizer and Program Chair of the Columbia Workshop on Brain Circuits, Memory and Computation, BCMC*2018, March 15-16, 2018, Columbia University, New York, NY.

2017 Organizer and Program Chair of the Columbia Workshop on Brain Circuits, Memory and Computation, BCMC*2017, March 13-14, 2017, Columbia University, New York, NY.

2016 Organizer and Program Chair of the Columbia Workshop on Brain Circuits, Memory and Computation, BCMC*2016, March 18-19, 2016, Columbia University, New York, NY.

2015 Program Co-Chair of the CNS Workshop on Open Collaboration in Computational Neuroscience, CNS*2015, July 22, 2015, Prague, Czech Republic.

2015 Program Co-Chair of the CNS Workshop on Methods of Systems Identification for Studying Information Processing in Sensory Systems, CNS*2015, July 22, 2015, Prague, Czech Republic.

2015 Organizer and Program Chair of the Columbia Workshop on Brain Circuits, Memory and Computation, BCMC*2015, March 16-17, 2015, Columbia University, New York, NY.

2014 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, CNS*2014, July 30-31, 2014, Quebec, Canada.

2014 Program Co-Chair of the CNS Workshop on Methods of Systems Identification for Studying Information Processing in Sensory Systems, CNS*2014, July 30, 2014, Quebec, Canada.

2013 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, CNS*2013, July 17-18, 2013, Paris, France.

2013 Program Co-Chair of the CNS Workshop on Methods of Systems Identification for Studying Information Processing in Sensory Systems, CNS*2013, July 17, 2013, Paris, France.

2012 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, CNS*2012, July 25-26, 2012, Atlanta/Decatur, GA.

2012 Program Co-Chair of the CNS Workshop on Methods of Systems Identification for Studying Information Processing in Sensory Systems, CNS*2012, July 25, 2012, Atlanta/Decatur, GA.

2011 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, CNS*2011, July 27-28, 2011, Stockholm, Sweden.

2011 Program Co-Chair of the CNS Workshop on Methods of Systems Identification for Studying Information Processing in Sensory Systems, CNS*2011, July 27-28, 2011, Stockholm, Sweden.

2010 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, San Antonio, TX, July 24-30, 2010.

2010 Program Co-Chair of the Columbia University - Technion Workshop on Neuroengineering of Biological Networks, March 16-17, 2010, Columbia University, New York, NY.

2009 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, Berlin, Germany, July 22-23, 2009.

2008 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, Portland, OR, July 23-24, 2008.

2007 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, Toronto, Canada, July 11-12, 2007.

2006 Program Co-Chair of the CNS Workshop on Methods of Information Theory in Computational Neuroscience, Edinburgh, U.K., July 19-20, 2006.

2002 Co-Chairman and Program Co-Chair or the First IEEE Workshop on Disaster Recovery Networks, New York, NY, June 24, 2002.

1999 Vice Program Chair of the First International Working Conference on Active Networks, Berlin, Germany, June 30 - July 2, 1999.

1998 Program Chair, First IEEE Open Architectures and Network Programming Conference (OPENARCH'98), San Francisco, CA, April 3-4, 1998.

1997 Program Co-Chair, International Symposium on Integrated Network Management (ISINM'97), San Diego, CA, May 12-16, 1997.

1996 Program Co-Chair, Open Signaling for ATM, Internet and Mobile Networks (OPENSIG Fall'96), Columbia University, New York, October 14-15, 1996.

1996 Chairman and Program Co-Chair, Open Signaling for Middleware and Service Creation (OPENSIG Spring'96), Columbia University, New York, April 29-30, 1996.

1995	Program Co-Chair, IEEE INFOCOM'95, Boston, MA, April 1995.
1992-1997	Founder and Co-Chairman of the Columbia Workshop on Telecommunications, Columbia University, New York:
1997	Networking Games and Pricing, Columbia University, New York, NY, March 27, 1997.
1996	Networking Games and Economic Organization, March 21-22, 1996.
1995	Open Binding Architectures for Building Networking Middleware, October 23-24, 1995.
1994	Multimedia Networking, October 28, 1994.
1992	Broadband Networking: The State of the Art and Beyond, September 21-22, 1992.
1990	Organizer and Co-Chairman of the 7th International Teletraffic Congress Seminar, Broadband Technologies: Architectures, Applications, Control, and Performance, Morristown, NJ, October 9-11, 1990.
1988	Organizer and Chairman of the Third IEEE Computer Communication Workshop, Arden House, Harriman, New York, September 1988.

Membership in Professional and Honorary Societies

IEEE (Fellow), Society for Neuroscience, Organization of Computational Neuroscience.

Professional Activities

1997-1999	Member of the IEEE Communications Society Awards Committee.
1987-1991	Chairman (1989-1991) and Vice-Chairman (1987-1989) of the Computer Communications Technical Committee of the Communications Society of the IEEE.
1987	Member of the IEEE Field Award Committee (Kobayashi Award Committee 1987)
1981-	Reviewer for ACM/Springer Verlag Multimedia Systems, Journal of Multimedia Tools and Applications, IEEE Transactions on Networking, IEEE Transactions on Automatic Control, IEEE Transactions on Information Theory, Computer Networks and ISDN Systems, IEEE Transactions on Communications, Performance Evaluation, IEEE Journal on Selected Areas in Communications, IEEE Transactions on Computers.

Standards

1998-2001	Vice-Chairman of the IEEE Working Group on Programming Interfaces for Networks.

Personal

American citizen, born January 30, 1950, Zalau (Transylvania/Romania), married, two children.
Social Security #154-64-0646.

Tutorials

2013	Massively Parallel Time Encoding and Channel Identification Machines, Computational Neuroscience Meeting (CNS*2013), July 13, 2013, Paris, France.
1994	Multimedia Networking, presented to the participants of SIGCOMM95, Boston, MA, August 29, 1995; 13th Brazilian Symposium on Networks and Distributed Systems, Belo Horizonte, Brazil, May 22, 1995; University of Cape Town, April 13, 1995 and University of Pretoria, Pretoria, South Africa, April 11, 1995; Multimedia'94, San Francisco, CA, October 16, 1994.
1993	Quality of Service Control and Management for Broadband Networks, presented to the participants of: SICON'93, Singapore, September 7, 1993; INFOCOM'93, San Francisco, CA, March 28, 1993.
1990	Object-Oriented Network Management and Control, presented to the participants of SIGCOMM'90, Philadelphia, PA, September 25, 1990.

Sabbatical

2017	Bionet Laboratory at Columbia University.
2011	Bionet Laboratory and the Laboratory of Richard Axel, Columbia University.
2003-2004	Laboratory of Richard Axel, Columbia Medical Center, Columbia University.
1993-1994	National University of Singapore, Institute of Systems Science, Singapore, August 9,1993 - March 29, 1994. University of Crete at Heraklion, Greece, May 6 - May 20, 1994. Royal Institute of Technology (KTH), Stockholm, Sweden, May 24 - June 29, 1994.
1987-1988	NEC Central Research Laboratories, Tokyo, Japan, August 24-November 19, 1987. Universite Rene Descartes, Ecole des Hautes Etudes en Informatique, Paris, and ISEM, Universite de Paris-Sud, Orsay, France, February 2-August 2, 1988.

Politecnico di Milano, Department of Electrical Engineering, Milan, Italy, May 30-June 21, 1988.

Courses Taught at Columbia

1980-2001 Computer Communication Networks, Communication Theory, Point Processes in Information and Dynamical Systems (course developed), Introduction to Communication Systems, Stochastic Control and Identification (course developed), Topics in Computer Communication Networks (course developed), Linear System Theory, Speech Analysis, Synthesis and Recognition (course developed), Telecommunication Networks Control and Management (course developed), Stochastic Signals and Noise, Multimedia Networking (course developed), Resource Allocation and Networking Games (course developed), Scaling in Networks (seminar initiated),

2002- Computational Neuroscience I: Circuits in the Brain (course developed), Time Encoding, Channels and Information (course developed), Stochastic Processes in Information Systems, Information Representation in Sensory Systems (course developed), Methods of Signal Processing in Computational Neuroscience (course developed), Dendritic Computation (research seminar), Representation and Processing of Olfactory Information (research seminar). Methods in Computational Neuroscience (course developed), Brain Circuit and Information (research seminar), Neural Encoding and Computation in Sensory Systems (research seminar), Massively Parallel Neural Computation (research seminar), Methods of Computational Neuroscience, Big Data in Neuroscience, Computing with Brain Circuits (research seminar), Neural Networks and Deep Learning (course developed), The Fruit Fly Brain as a NeuroInformation Processor (course developed), Computing ith Brain Circuits (course developed).

Dissertation Defense Committee (not as sponsor)

School of Business (2), Department of Computer Science (2), Department of Economics (2), Department of Electrical Engineering (10), Department of Industrial Engineering and Operations Research (3), Department of Statistics (3), Ecole National Superieure de Telecommunication (Paris) (1), Universite de Paris-Sud, Orsay (1), Department of Mechanical Engineering (2).

Postdoctoral Research Scientists

2015- Yiyin Zhou, Ph.D.

Doctoral Students

2017- Mehmet Kerem Turkcan
2016- Tingkai Liu (Presidential Fellowship)
2011- Chung-Heng Yeh
2018 Nikul H. Ukani, "Sparse Algorithms for Decoding and Identification of Neural Circuits", October 2018.
2016 Lev E. Givon, "An Open Pipeline for Generating Executable Neural Circuits from Fruit Fly Brain Data", May 2016.
2015 Yiyin Zhou, "Massively Parallel Spiking Neural Circuits: Encoding, Decoding and Functional Identification", October 2015.
2013 Yevgeniy B. Slutskiy, "Functional Identification of Spiking Neural Circuits", October 2013.
2010 Anmo J. Kim, "Systems Identification of Drosophila Olfactory Sensory Neurons and Projection Neurons", October 2010.
2010 Eftychios-Aristodimos Pnevmatikakis, "Spikes as Projections: Representation and Processing of Sensory Stimuli in the Time Domain", February 2010.
2001 Mahesan Nandikesan, "On the Foundations of Network Programmability", October 2001.
1999 Cristina Aurrecoechea, "Modeling Service Management for Programmable Architectures", July 1999.
1999 Jean-Francois Huard, "An Object-to-Object Communications Architecture with Quality of Service Guarantees", May 1999.
1999 Nemo Semret, "Market Mechanisms for Network Resource Sharing", April 1999.
1997 Mun Choon Chan, "Architecting the Control Infrastructure of Multimedia Networks," June 1997.
1996 Predrag R. Jelenkovic, "The Effect of Multiple Time Scales and Subexponentiality on the Behavior of a Broadband Network Multiplexer", September 1996.
1995 Nicholas G. Aneroussis, "Managing Virtual Circuit and Virtual Path Services on ATM Networks with Quality of Service Guarantees", December 1995.
1995 Dimitrios E. Pendarakis, "On the Tradeoff between Transport and Signaling in Broadband Networks", December 1995.
1995 Paul Chang, "A Connection-Oriented Virtual Work-Conserving Packet Scheduling Architecture for Broadband-ISDN", December 1995.
1995 Ioannis A. Korilis, "Architecting Noncooperative Networks", September 1995.

1993 Jay M. Hyman, “Real-Time Scheduling and Admission Control in Broadband Networks”, July 1993.

1991 John-Thones Amenyo, “Real-Time Distributed Scheduling and Buffer Management for Congestion Control in Broadband Networks”, December 1991.

1990 Subrata Mazumdar, “Knowledge-Based Monitoring of Integrated Networks for Performance Management,“, October 1990.

1990 Josep M. Ferrandiz, “Point Processes in Modeling, Analysis and Control of Integrated Networks”, January 1990.

1989 Andreas D. Bovopoulos, “Resource Allocation Algorithms for Packet Switched Networks”, May 1989.

1988 Benjamin Monderer, “Exploring the Space-Time Structure at the Output of a Cochlear Model”, May 1988.

1988 Magda El Zarki, “MAGNET: Its Adaptive Integrated Local Area Network”, January 1988.

1986 Man-tung T. Hsiao, “Optimal Decentralized Flow Control in Computer Communication Networks”, October 1986.

1984 Faramak Vakil, ‘’Dynamic Optimal Flow Control of Integrated Services Digital Networks”, October 1984.

Research scientists and visiting scholars hosted for extended stay

1995-1996 Hideaki Yamanaka, Mitsubishi Electric Corporation, Tokyo, Japan, October 14, 1995 - September 30, 1996.

1995-1996 Cheul Shim, Yonsei University, Seoul, Korea, August 21, 1995 - March 1996.

1995-1996 Ichiro Inoue, Nippon Telegraph and Telephone, Tokyo, Japan August 21, 1995 - July 31, 1996.

1995 Linda Hauw, Universite de Paris VI, Paris, France, January 7, 1995 - July 7, 1995.

1994-1995 Shinji Akatsu, Mitsubishi Electric Corporation, Tokyo, Japan, October 17, 1994 - October 18, 1995.

1994-1995 Andrew T. Campbell, Lancaster University, Lancaster, United Kingdom, October 17, 1994 - May 6, 1995.

1994-1995 Hisaya Hadama, Nippon Telegraph and Telephone, Tokyo, Japan, September 2, 1994 - September 1, 1995.

1993-1994 Prof. Ariel Orda, Technion, Israel Institute of Technology, Haifa, Israel, October 1, 1993 - September 30, 1994.

1993-1994 Franco Marconcini, Politecnico di Milano, Milan, Italy, June 1, 1993 - September 1, 1994.

1992-1994 Dr. Dominique Gaiti, Universite de Paris VI, Paris, France, November 19, 1992 - August 30, 1994.

1992-1995 Piergiulio Maryni, University of Genoa, Genoa, Italy, November 11, 1992-December 15, 1993, March 12 - 26, 1994, June 24 - August 19, 1994, June 19 - August 22, 1995.

1992-1994 Dr. Rolf Stadler, IBM Zurich Research Laboratory, Zurich, Switzerland, March 1, 1992 - February 28, 1994.

1991-1992 Toshiyuki Misu, Nippon Electric Corporation, Abiko, Japan, August 29, 1991 - August 26, 1992.

1990-1991 Satoshi Shimizu, Hitachi, Tokyo, Japan, October 16, 1990 - October 31, 1991

1990-1991 Mitsuru Tsuchida, Mitsubishi Electric Corporation, Tokyo, Japan, August 23, 1990 - August 20, 1991.

1990 Prof. Thomas G. Robertazzi, SUNY at Stony Brook, Department of Electrical Engineering, June 6, 1990 - November 8, 1990.

1989 Prof. Pierre Bremaud, Laboratoire des Signaux et Systemes, CNRS-ESE, Gif sur Yvette, France, January 1, 1989 - March 1, 1989.

1988 Prof. Armand Makowski, University of Maryland, College Park, October 10, 1988 - October 28, 1988.

1987-1989 Dr. Giovanni Pacifici, University of Rome, “La Sapienza”, Rome, Italy, November 30, 1987 - July 1, 1989.

1987-1988 Fukashi Kamikawa, Nippon Electric Corporation, Tokyo, Japan, August 24, 1987 - August 5, 1988.

1986-1987 Enrico Cadorin, Politecnico di Milano, Milan, Italy, September 20, 1986 - December 30, 1987.

1985-1986 Kenichi Hori, Nippon Electric Corporation, Tokyo, Japan, August 4, 1985 - September 30, 1986.

1984-1985 Yoshiharu Tamura, Nippon Electric Corporation, Tokyo, Japan, August 4, 1984 - August 30, 1985.

1983-1984 Tatsuro Takahashi, Nippon Telegraph and Telephone, Tokyo, Japan, November 15, 1983 - November 7, 1984.

1983-1984 Dr. Genevieve Cerf, Columbia University, Department of Electrical Engineering, September 1, 1983 - August 31,1984.

1983-84 Prof. Edward Coyle, Purdue University, Department of Electrical Engineering, August 1-15,1983 and July 16-31, 1984.

1983 Prof. Thomas G. Robertazzi, SUNY at Stony Brook, Department of Electrical Engineering, May 15 - August 15, 1983.

Research Grants

2019-2020 Principal Investigator, DARPA, Robust Learning in Brain Circuits of Synthetic Miniature Insects, ($620,329).

2017 Fundraiser, IBM Research, First Fruit Fly Brain Hackathon, Columbia University, March 12, 2017 ($1.5K).

2016 Principal Investigator, The Open Science Prize Sponsored by NIH,

	The Welcome Trust and HHMI, The Fruit Fly Brain Observatory ($80K).
2016-2020	Principal Investigator, Air Force Office of Scientific Research, Foundations of NeuroInformation Processing: Phase and Spike Processing Machines ($1,113,687).
2016	Fundraiser, IBM Research, First Fruit Fly Brain Hackathon, Columbia University, March 17, 2016 ($5K).
2015-2018	Co-Principal Investigator, NSF/BIO (United States) – BBSRC (United Kingdom), The Digital Fruit Fly Brain (PI Daniel Coca, University of Sheffield). Total award ($1.6 million). Co-PI's budget ($795.056).
2012-2016	Principal Investigator, Air Force Office of Scientific Research, Fundamental Mechanisms of NeuroInformation Processing: Inverse Problems and Spike Processing ($997,936).
2012-2015	Principal Investigator, National Institutes of Health, Untethered Electrophysiology in Vivo: An Optical Nanoscale Semiconductor Array for Neural Sensing and Recording ($412,313).
2009-2012	Principal Investigator, Air Force Office of Scientific Research, The Geometry of Switching Architectures for Time Encoding ($750,00).
2006-2011	Principal Investigator, National Institutes of Health, Input/Output Characterization of the Antennal Lobe of the Drosophila ($1,370526).
2006-2010	Principal Investigator, National Science Foundation, Information Representation and Computation in the Time Domain ($301,811).
1995-97	Principal Investigator, US Air Force Rome Laboratory, A Generic Management and Control API based on an Object-Level Interaction Paradigm and its Demonstration in a Virtual Workshop Service on NYNET ($848,978).
1995	Principal Investigator, IBM T.J. Watson Research Center ($40,000).
1995	Principal Investigator, AT&T Bell Laboratories, ($87,875).
1995	Principal Investigator, Sun Microsystems, ($15,000).
1995	Principal Investigator, HP, Real-Time Quality of Service and Multimedia Traffic Estimation ($30,000).
1995	Principal Investigator, HP, Flow and Admission Control Dynamics in Broadband Networks: The Role Played by Time Scales ($30,000).
1994	Principal Investigator, HP, A System for Real-Time Traffic Generation and QOS Measurements for Broadband Networks based on the HP BSTS Equipment ($60,000).
1994	Principal Investigator, AT&T Bell Laboratories, A Multimedia Networking Platform for Accessing NYNET and XUNET III ($19,000).
1994-1996	Principal Investigator, US Air Force Rome Laboratory, An Architecture for Externally Controllable Virtual Networks ($300,000).

1993	Principal Investigator, AT&T Bell Laboratories, Visualization of Control and Management in Giant Gigabit Networks ($20,000).
1992	Principal Investigator, AT&T Bell Laboratories, Control and Management of Giant Integrated Networks ($20,000).
1992-1995	Co-Principal Investigator, Office of Naval Research: Congestion Control for High Speed Networks ($420,484).
1991-1995	Principal Investigator of the Center for Telecommunications Research, National Science Foundation: An Architecture for Real-Time Management and Control of Telecommunication Networks.
1990-1991	Co-Principal Investigator, Office of Naval Research: Management, Control and Performance of Broadband Integrated Networks ($270,483).
1988-1991	Principal Investigator of the Center for Telecommunications Research, National Science Foundation: WIENER: A Traffic Control Architecture for Integrated Networks.
1988-1989	Co-Principal Investigator, Office of Naval Research: Broadband Integrated Networks of the Future ($261,966).
1987-1990	Principal Investigator, New York State Science and Technology Foundation: WIENER: A Distributed Expert System for Dynamic Resource Allocation in Integrated Networks ($100,000).
1986-1987	Principal Investigator, IBM: MAGNET-ISDN Internetworking Protocols (Equipment Grant) ($400,000).
1986-1987	Principal Investigator, New York State Science and Technology Foundation: Packetized Video for MAGNET ($121.625).
1985-1988	Principal Investigator of the Center for Telecommunications Research, National Science Foundation: MAGNET, An Integrated Network Testbed ($3,000,000)
1985-1987	Co-Principal Investigator, Office of Naval Research: Problems in Integrated Digital Networks ($379,888).
1984-1986	Principal Investigator, New York State Science and Technology Foundation: MAGNET: An Integrated Network Testbed ($240,000).
1984-1987	Co-Principal Investigator, National Science Foundation: Research Issues in Computer Communication Networks ($451,000).
1984-1985	Principal Investigator, Bell Laboratories: A Network Testbed for Local Area Networks Supporting Integrated Services (Equipment Grant) ($96,570).
1984-1985	Principal Investigator, Bell Laboratories: Digital Communications Laboratory Based on the Expansion of the PDP 11/60 (Equipment Grant) ($13,500).
1983-1984	Principal Investigator, New York State Science and Technology Foundation: Computer Networking and Distributed Computing ($120,000).

1983-1984 Co-Principal Investigator, Department of Defense: A Network Testbed for Digital and Computer Communication Networks (Instrumentation Grant) ($502,000).

1983-1986 Co-Principal Investigator, Army Research Office: Routing and Flow Control in Very Large Communication Networks ($329,423).

1982-1984 Co-Principal Investigator, Office of Naval Research: Integrated Digital Networks: Modeling and Performance Analysis for Multiple User Classes ($219,455).

1981-1984 Co-Principal Investigator, National Science Foundation: Problems in Integrated Digital Networks ($275,000).

1982-1983 Principal Investigator, Bell Laboratories: Updating the Communications and Controls Computer Laboratory (Equipment Grant) ($15,000).

1981-1983 Principal Investigator, National Science Foundation: Nonlinear Estimation Based on Distributed Processing with Counting Point Process Observations: Application to Computer Communication Networks and Auditory Neural Coding ($48,000).

Patents

1. Lazar, A.A. and Chan, M.C., ‘‘Reservation Method and System for Asynchronous Transfer Mode Communications’’, US Patent #5,953,316, September 14, 1999.
2. Semret, N. and Lazar, A.A., “System and Method for Allocating Resources Using Spot Market and Derivative Market Techniques”, US Patent #7,110,977, September 19, 2006.
3. Semret, N. and Lazar, A.A., “The System and method for performing a progressive second price auction technique”, US Patent #7,177,832, February 13, 2007.
4. Lazar, A.A., “Multichannel Time Encoding and Decoding of a Signal”, US Patent #7,336,210, February 26, 2008.
5. Lazar, A.A., “Multichannel Time Encoding and Decoding of a Signal”, US Patent #7,479,907, January 20, 2009.
6. Lazar, A.A. and Toth, L.T., “Time Encoding and Decoding of a Signal”, US Patent #7,573,956, August 11, 2009.
7. A. A. Lazar and E. A. Pnevmatikakis, “Multi-Input Multi-Output Time Encoding and Decoding Machines”, US Patent #8,023,046 B2, September 20, 2011.
8. Semret, N. and Lazar, A.A., “System and Method for Allocating Resources Using Spot Market and Derivative Market Techniques”, US Patent #8,131,616, March 6, 2012.
9. Aurel A. Lazar and Yiyin Zhou, “Encoding and Decoding Machine with Recurrent Neural Networks”, US Patent #8,874,496, October 28, 2014.
10. A. A. Lazar and Y. B. Slutskiy, “Systems and Methods for Identification of Spike-Processing Circuits”, US Patent #9,171,249, October 27, 2015.

11. A. A. Lazar, E. K. Simonyi, and L. T. Toth, “Real-Time Time Encoding and Decoding Machines”, US Patent #9,014,216, April 21, 2015.
12. A. A. Lazar and E. A. Pnevmatikakis, “Multi-Input Multi-Output Time Encoding and Decoding Machines”, US Patent #9,013,635, April 21, 2015.
13. A. A. Lazar, N.H Ukani and Y. Zhou, “Systems and Methods for Detecting Motion Using Loal Information”, US Patent #9,892,518, February 13, 2018.

Publications (Archival Journals)

14. Lazar, A.A., “The Throughput Time Delay Function of a M/M/l Queue,” IEEE Transactions on Information Theory, Vol. IT-29, No. 6, November 1983, pp. 914-918.
15. Lazar, A.A., “Optimal Control of a Class of Queueing Networks in Equilibrium”, IEEE Transactions on Automatic Control, Vol. AC-28, No. 11, November 1983, pp. 1001-1007.
16. Lazar, A.A., “Optimal Control of a M/M/m Queue,” Journal of the Association for Computing Machinery, Vol. 31, No. 1, January 1984, pp. 86-98.
17. Robertazzi, T.G. and Lazar, A.A., “On The Modeling and Optimal Flow Control of the Jacksonian Network,” Performance Evaluation, No. 5, 1985, pp. 29-43.
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♥ The Best Student Paper Award

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281. Aurel A. Lazar and Eftychios A. Pnevmatikakis, “A Video Time Encoding Machine”, IEEE International Conference on Image Processing, San Diego, CA, pp. 717-720, October 12-15, 2008.
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283. Lazar, A.A. and Slutskiy, Y.B., “Identifying Dendritic Processing”, Advances in Neural Information Processing Systems 23, J. Lafferty and C. K. I. Williams and J. Shawe-Taylor and R.S. Zemel and A. Culotta, pp. 1261--1269, 2010, spotlight presentation.
284. Aurel A. Lazar and Yiyin Zhou, “Realizing Video Time Decoding Machines with Recurrent Neural Networks”, Proceedings of the International Joint Conference on Neural Networks, IEEE, San Jose, CA, July 31 - August 5, 2011.
285. Aurel A. Lazar and Eftychios A. Pnevmatikakis, “Encoding of Multivariate Stimuli with MIMO Neural Circuits”, Proceedings of the ISIT 2011, Saint Petersburg, Russia, IEEE, July 31 - August 5, 2011.
286. Aurel A. Lazar and Yevgeniy B. Slutskiy, “Multisensory Encoding, Decoding, and Identification”, Advances in Neural Information Processing Systems 26 (NIPS*2013), edited by C.J.C. Burges, L. Bottou, M. Welling, Z. Ghahramani and K.Q. Weinberger, December 2013.
287. A. A. Lazar, N. H. Ukani, and Y. Zhou, “Sparse Functional Identification of Complex Cells from Spike Times and the Decoding of Visual Stimuli”, Neurons and Cognition, arXiv.org, June 2017.

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289. N. H. Ukani, C.-H. Yeh, A. Tomkins, Y. Zhou, D. Florescu, C. L. Ortiz, Y.-C. Huang, C.-T. Wang, P. Richmond, C.-C. Lo, D. Coca, A.-S. Chiang, and A. A. Lazar. “Fruit Fly Brain Observatory: From Structure to Function”, bioRxiv, March 2019.

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Abstracts (Conference Proceedings)

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291. Lazar, A.A., “On the Optimal Control of a Jacksonian Network,” Proceedings of the International Symposium on Information Theory, Les Arcs, France, June 21-25, 1982.
292. Lazar, A.A., “On a Linear Programming Approach to the Data Link Flow Control Protocol,” Proceedings of the International Symposium on Information Theory, St. Jovite, Quebec, Canada, September 25-29, 1983.
293. Hsiao, M.-T. and Lazar, A.A., “Bottleneck Modeling and Decentralized Optimal Flow Control: Global Objectives,” presented as an invited paper at the TIMS/ORSA 1984, San Francisco, California, May 14-16, 1984, pp. 104.
294. Hsiao, M.-T. and Lazar, A.A., “Bottleneck Modeling and Decentralized Optimal Flow Control: II. Local Objectives,” presented as an invited paper at the ORSA/TIMS 1985, Atlanta, November 1985, pp. 54-55.
295. Bovopoulos, A.D. and Lazar, A.A., “Optimal Routing and Flow Control of Time Division Multiplexed Channels,” invited paper, Proceedings of the 12th International Symposium on Mathematical Programming, Cambridge, Massachusetts, August 5-9, 1985, pp. 13A.
296. Bovopoulos, A.D. and Lazar, A.A., “Optimal Routing and Flow Control of a Network of Parallel Processors,” presented as an invited paper at the ORSA/TIMS 1985, Atlanta, November 1985, pp. 139-140.
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299. Lazar, A.A. and Robertazzi, T.G., “The Geometry of Lattices for Markovian Queueing Networks,” Proceedings of the ORSA/TIMS 1986, Miami Beach, FL, October 27-29,1986, pp. 63.
300. Ferrandiz, J.M. and Lazar, A.A., “A Topological Generation of Markov Chain Lattices,” presented as an invited paper at the Conference on Queueing Networks and their Applications, New Brunswick, NJ, January 7-9, 1987, pp. 129-130.
301. Robertazzi, T.G. and Lazar, A.A., “The Algebraic Topological Structure of Markovian Queueing and Petri Network Lattices,” presented as an invited paper at the Conference on Queueing Networks and their Applications, New Brunswick, NJ, January 7-9, 1987, pp. 134-136.
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303. Lazar, A.A., Temple, A. and Gidron, R., “MAGNET II: A Metropolitan Area Network Based on Asynchronous Time Sharing,” Third IEEE Workshop on Metropolitan Area Networks, San Diego, CA, March 28-30, 1989.
304. Bovopoulos, A.D. and Lazar, A.A., “Resource Allocation Algorithms for Packet Switched Networks”, Proceedings of the First ORSA Telecommunications Conference, Boca Raton, FL, March 15-18,1990.
305. Tsuchida, M., Lazar, A.A. and Aneroussis, N.G., ‘‘The Integration of Real-Time Control with Management in Broadband Networks’’, Sixth Annual IEEE Computer Communications Workshop, Monterey, CA, October 22-24, 1991.
306. Korilis, Y. A. and Lazar, A.A., ‘‘Why is Flow Control Hard?’’, Proceedings of the Second ORSA Telecommunications Conference’’, Boca Raton, FL, March 9-11, 1992.
307. Lazar, A. A. and Pacifici, P., ‘‘Control of Resources in Broadband Networks with Quality of Service Guarantees’’, QOS Workshop, Bell Laboratories, Murray Hill, NJ, April 23-24, 1992.
308. Korilis, Y.A. and Lazar, A.A., ‘‘On the Existence of Equilibria in Noncooperative Optimal Flow Control’’, International Workshop on Game Theory: Stochastic Games, Nucleolus, Shapley Value, University of Illinois at Chicago, August 1994.
309. Korilis, Y.A. and Lazar, A.A., ‘‘On the Manager’s Role in Noncooperative Networks’’, Proceedings of the Third ORSA Telecommunications Conference, Boca Raton, FL, March 9-11, 1995.
310. Korilis, Y.A. and Lazar, A.A., ‘‘Architecting Noncooperative Networks’’, XXXIII TIMS International Conference, Singapore, June 1995.

311. Lazar, A. A., ‘‘Project xbind’’, Tutorial Colloquium on Signaling for Broadband, IEE, London, U.K., December 14, 1995.
312. Jelenkovic, P. R. and Lazar, A.A., ‘‘Subexponential Asymptotics of a Network Multiplexer’’, Stochastic Networks Workshop, Statistical Laboratory, University of Cambridge, U.K., December 15, 1995.
313. Lazar, A.A., ‘‘Open Network Control for Broadband Networks’’, The 3rd Workshop on Lightwave, Wireless and Networking Technologies, Hsinchu, Taiwan, July 17-19, 1996.
314. Lazar, A.A., ‘‘Building Open Programmable Multimedia Networks’’, OPENSIG Workshop, Columbia University, New York, October 15, 1996 and Workshop on Broadband Network Intelligence, Dipoli Center, Otaniemi, Espoo, Finland, November 4-5, 1996.
315. Jelenkovic, P. R. and Lazar, A.A., ‘‘Asymptotic Results for Multiplexing Subexponential On-Off Sources’’, INFORMS Applied Probability Conference, Boston, June 30 - July 2, 1997.
316. Chan, M.C. and Lazar, A.A., ‘‘Connection Services on the xbind Broadband Kernel’’, OPENSIG Workshop, University of Cambridge, Cambridge, U.K., April 17-18, 1997.
317. Adam, C.M., Chan, M.C., Huard, J.-F., Lazar, A.A. and Lim, K.S., ‘‘The Binding Interface Base, Revision 2.0’’, OPENSIG Workshop, University of Cambridge, Cambridge, U.K., April 17-18, 1997.
318. Adam, C.M., Lazar, A. A. and Nandikesan, M., ‘‘QOS Extensions to GSMP’’, OPENSIG Workshop, University of Cambridge, Cambridge, U.K., April 17-18, 1997.
319. Lazar, A.A., ‘’Programming Telecommunication Networks‘‘, LATSIS Symposium on Information and Communication Systems: State of the Art, Synergy and Future Directions, Swiss Federal Institute of Technology, September 22-24, 1997, Zurich, Switzerland.
320. Lazar, A.A., ‘‘ATM: A Technology in Crisis?’’, IFIP Workshop on Synthesis of ATM Networks, Montreal, Canada, September 24-26, 1997.
321. Lazar, A.A., “Time Encoding with the Integrate and Fire Neuron”, Neural Information and Coding Workshop, Snowbird, Utah, March 1-4, 2003.
322. Lazar, A.A., "Time Encoding with an Integrate-and-Fire Neuron with a Refractory Period", presented at The Computational Neuroscience Meeting, July 5-9, 2003, Alicante, Spain.
323. Lazar, A.A., “Spatio-Temporal Models for Time Encoding and Stimulus Recovery, Computational and Systems Neuroscience Meeting, March 24-March 28, 2004, Cold Spring Harbor Laboratory, NY.
324. Lazar, A.A., “Time Encoding with Filter Banks and Integrate-and-Fire Neurons, The Computational Neuroscience Meeting, July 18-20, 2004, Baltimore, MD.
325. Lazar, A.A., “The Hodgkin-Huxley Neuron as a Neuro-Modulator, Computational and Systems Neuroscience Meeting, March 17-20, 2005, Salt Lake City.

326. Lazar, A.A., “A Simple Model of Spike Processing”, Computational Neuroscience Meeting, July 17-21, 2005, Madison, WI.
327. Lazar, A.A., “Neural Diversity and Ensemble Encoding”, Computational and Systems Neuroscience Meeting COSYNE’06, March 5-8, 2006, Salt Lake City, Utah.
328. Lazar, A.A., “Information Representation with an Ensemble of Hodgkin-Huxley Neurons”, Computational Neuroscience Meeting, July 16-20, 2006, Edinburgh, U.K..
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331. Lazar, A.A. and Pnevmatikakis, E.-A., “A Stochastic Model of Olfactory Transduction”, Conference on Engineering Principles in Biological Systems, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, December 3-6, 2006.
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333. Lazar, A.A., “Time Encoding Machines”, Neuromorphic Engineering Workshop, Telluride, CO., July 1-21, 2007.
334. Lazar, A.A. and Pnevmatikakis, E.-A., “Multi Input Multi Output Population Encoding”, CNS’07, Toronto, Canada, July 8-10, 2007.
335. Lazar, A.A. and Pnevmatikakis, E.-A., Faithful Representation of Video Streams with a Population of Spiking Neurons, Computational and Systems Neuroscience Meeting, COSYNE 2008, Salt Lake City, UT, February 28 - March 2, 2008.
336. Lazar, A.A. and Pnevmatikakis, E.-A., A Simple Spiking Retina Model for Exact Video Stimulus Representation, The Computational Neuroscience Meeting, CNS*2008, Portland, Oregon, July 19 - 24, 2008.
337. Lazar, A.A. and Pnevmatikakis, E.-A., Encoding, Processing and Decoding of Sensory Stimuli with a Spiking Neural Population, AREADNE 2008, Research in Encoding and Decoding of Neural Ensembles, Santorini, Greece, June 26-29, 2008.
338. Anmo J. Kim and Aurel A. Lazar, Recovery of Stimuli Encoded with a Hodgkin-Huxley Neuron Using Conditional PRCs, Computational Neuroscience Meeting, (CNS*09), Berlin, Germany, July 18 - 23, 2009.
339. Aurel A. Lazar and Eftychios A. Pnevmatikakis, Reconstruction and Classification of Stimuli Encoded with Neural Circuits with Feedback, (CNS*09), Computational Neuroscience Meeting, July 18 - 23, 2009.
340. Aurel A. Lazar and Eftychios A. Pnevmatikakis, Invariant Representations of Visual Streams in the Spike Domain, Berstein Conference in

Computational Neuroscience, Frankfurt am Main, Germany, September 30 - October 2, 2009.

341. Anmo J. Kim, Aurel A. Lazar and Yevgeniy Slutskiy, 2D Encoding of Concentration and Concentration Gradient in Drosophila ORNs, Computational and Systems Neuroscience Meeting, COSYNE 2010, Salt Lake City, UT, February, 2010.
342. Aurel A. Lazar and Robert J. Turetsky, Encoding Auditory Scenes with a Population of Hodgkin-Huxley Neurons, Computational Neuroscience Meeting, (CNS*2010), San Antonio, TX, July 24 - 30, 2010.
343. Anmo J. Kim, Aurel A. Lazar and Yevgeniy Slutskiy, System Identification of the DM4 Glomerulus in the Drosophila Antennal Lobe, Computational Neuroscience Meeting, (CNS*2010), San Antonio, TX, July 24 - 30, 2010.
344. Aurel A. Lazar and Yiyin Zhou, Encoding Visual Stimuli with a Population of Hodgkin-Huxley Neurons, (CNS*2010), San Antonio, TX, July 24 - 30, 2010.
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346. Anmo J. Kim, Aurel A. Lazar and Yevgeniy B. Slutskiy, Investigating Odor Identity Encoding in Drosophila OSNs, Computational and Systems Neuroscience Meeting, Salt Lake City, UT, February, 2011.
347. Aurel A. Lazar and Yevgeniy B. Slutskiy, Identifying Dendritic Processing in a [Filter]-[Hodgkin Huxley] Circuit, Computational Neuroscience Meeting, CNS*2011, Stockholm, Sweden, July 23-28, 2011.
348. Aurel A. Lazar and Yevgeniy B. Slutskiy, Identifying Dendritic Processing in Drosophila OSNs, Computational and Systems Neuroscience Meeting, Salt Lake City, UT, February, 2012.
349. Aurel A. Lazar and Yevgeniy B. Slutskiy, Estimating Receptive Fields and Spike-Processing Neural Circuits in Drosophila, Computational Neuroscience Meeting, CNS*2012, July 21-24, 2012, Atlanta/Decatur, GA.
350. Lev E. Givon and Aurel A. Lazar, An Open Architecture for the Massively Parallel Emulation of the Drosophila Brain on Multiple GPUs, CNS*2012, July 21-24, 2012, Atlanta/Decatur, GA.
351. L. E. Givon and A. A. Lazar, “Neurokernel: An Open Architecture for the Massively Parallel Emulation of Drosophila Brain Models on Multiple GPUs”, Workshop on Insect Vision: Cells, Computation, and Behavior, March 3-6, 2013, HHMI Janelia Farm, Ashburn, VA.
352. A. A. Lazar, W. Li, N. H. Ukani, C.-H. Yeh, and Y. Zhou, “Neural Circuit Abstractions in the Fruit Fly Brain”, Society for Neuroscience Abstracts, November 9-13, 2013, San Diego, California.
353. D. S. Chevitarese, L. E. Givon, A. A. Lazar, and M. Vellasco, “CircuitML: a Modular Language for Modeling Local Processing Units in the Drosophila

Brain", Frontiers in Neuroinformatics Conference Abstract: Neuroinformatics 2013, August 27 - 29, 2013, Stockholm, Sweden.

354. A. A. Lazar, "The t-Transform and its Inverse in Neural Encoding and Decoding", Workshop on Neural Coding: Beyond Shannon, July 3-4, 2013, Prague, Czech Republic.
355. Aurel A. Lazar, Yevgeniy B. Slutskiy and Yiyin Zhou, "Functional Identification and Evaluation of Massively Parallel Neural Circuits", CNS*2013, July 13-18, 2013, Paris, France.
356. Aurel A. Lazar and Yevgeniy B. Slutskiy, "Identification of Nonlinear-Nonlinear Neuron Models and Stimulus Decoding", CNS*2013, July 13-18, 2013, Paris, France.
357. Lazar, A.A. and Yeh, C.-H., "Functional Identification of an Antennal Lobe DM4 Projection Neuron of the Fruit Fly", Computational Neuroscience Meeting, Volume 15, July 2014, Québec City, Canada.
358. Lazar, A.A., Ukani, N.H., Yeh, C.-H. and Y. Zhou, "A Parallel Programming Model of Local Processing Units in the Fruit Fly Brain", Frontiers in Neuroinformatics, Number 24, August 2014, Leiden, The Netherlands.
359. L. E. Givon, A. A. Lazar, and N. H. Ukani, "Neuroarch: A Graph-Based Platform for Constructing and Querying Models of the Fruit Fly Brain Architecture", Frontiers in Neuroinformatics, Number 42, August 2014, Leiden, The Netherlands.
360. L. E. Givon, A. A. Lazar, K. Psychas, N. H. Ukani, C.-H. Yeh, and Y. Zhou, "Neurokernel: Building an in Silico Fruit Fly Brain", IEEE EMBS BRAIN Grand Challenges Conference, IEEE, November 2014.
361. A. A. Lazar, K. Psychas, N. H. Ukani, and Y. Zhou, "Retina of the Fruit Fly Eyes: A Detailed Simulation Model", BMC Neuroscience , Volume 16 (Suppl 1), pp. 301, July 2015.
362. A. A. Lazar, N. H. Ukani, and Y. Zhou, "Functional Identification of Complex Cells from Spike Times and the Decoding of Visual Stimuli", BMC Neuroscience, Volume 16 (Suppl 1), pp. 300, July 2015.
363. Y. Zhou, K. Psychas, N. H. Ukani, and A. A. Lazar, "Visualizing Parallel Information Processing in the Fruit Fly Retina", Computational and Systems Neuroscience Meeting, February 2016, Salt Lake City, UT.
364. N. H. Ukani, C.-H. Yeh, A. Tomkins, Y. Zhou, D. Florescu, C. L. Ortiz, Y.-C. Huang, C.-T. Wang, P. Richmond, C.-C. Lo, D. Coca, A.-S. Chiang, and A. A. Lazar, "The Fruit Fly Brain Observatory: from Structure to Function", Computational and Systems Neuroscience Meeting, February 2017, Salt Lake City, UT.
365. N. H. Ukani, A. Tomkins, C.-H. Yeh, W. Bruning, A. L. Fenichel, Y. Zhou, Y.-C. Huang, D. Florescu, C. L. Ortiz, P. Richmond, C.-C. Lo, D. Coca, A.-S. Chiang, and A. A. Lazar, "NeuroNLP: A Natural Language Portal for Aggregated Fruit Fly Brain Data", Computational Neuroscience Meeting , Volume 18 (Suppl 1):60 , BMC Neuroscience 2017, July 2017, Antwerp.

366. A. A. Lazar and T. Liu, “An Open-Source Model of the Fruit Fly Larval Mushroom Body”, Neurobiology of Drosophila , Cold Spring Harbor Laboratory, October 3-7, 2017.
367. A. A. Lazar and C.-H. Yeh, “An Open-Source Model of the Early Olfactory System of the Fruit Fly and Its I/O Characterization”, Society for Neuroscience Abstracts, November 11-15, 2017, Washington, DC.
368. A. A. Lazar, N. H. Ukani, and Y. Zhou, “A General Model for Divisive Normalization and its Identification”, Society for Neuroscience Abstracts , November 11-15, 2017, Washington, DC.
369. A. A. Lazar, N. H. Ukani, C.-H. Yeh, and Y. Zhou, “NeuroGFX: A Graphical Functional Explorer for Fruit Fly Brain Circuits”, Society for Neuroscience Abstracts, November 11-15, 2017, Washington, DC.
370. A. A. Lazar and C.-H. Yeh, “A Molecular Odorant Transduction Model and Combinatorial Encoding in the Drosophila Antennae”, Computational Neuroscience Meeting (featured oral presentation), July 13-18, 2018, Seattle, WA.
371. A. A. Lazar, N. H. Ukani, and Y. Zhou, “Modeling Contrast Gain Control of Fly Photoreceptors”, Computational Neuroscience Meeting, July 13-18, 2018, Seattle, WA.

Contributions to Conference and Workshop Panels

2016	Moderator of the panel discussion “The Logic of NeuroInformation Processing of the Fruit Fly Brain”, at the Columbia Workshop on Brain Circuits, Memory and Computation, March 18-19, 2016, NY.
2016	What Lies Ahead? Participant in the panel at the Central Complex IV: A New Hope to Understand a Multifaceted Brain Region, Janelia Research Campus, March 20-23, 2016, Ashburn, VA.
2016	Spike-Based Representations and Asynchronous Computing, Participant in the panel at Neuro-Inspired Computational Elements Workshop, March 7-9, 2016, Berkeley, CA.
2001	Modeling of the Shrew: the Quest of a "Model" Network Model Participant in the panel discussion at INFOCOM'01, Anchorage, Alaska, April 25, 2001.
2000	Opportunities for Startups in Programmable Networks Participant in the industry panel at OPENARCH'2000, Tel Aviv, Israel, March 26-27, 2000.
2000	Network APIs for the Multimedia Framework Participant in the industry panel at MPEG-21, Holland, March 20-21, 2000.
1999	Promise and Reality of Programmable Networks

Participant in the industry panel at OPENSIG'99, Carnegie Mellon University, Pittsburgh, Pennsylvania, October 15, 1999.

1999 Are Active/Programmable Networks Manageable?
Participant in the panel discussion at IM'99, May 27, 1999, Boston, MASS.

1999 The Value/Future of Quantitative Modeling and Analysis
Participant in the panel discussion at INFOCOM'99, March 23, 1999, New York, NY.

1993 Semantics of Network Constraints: Where Do They Come from and Where Do They Go?
Member of the Panel at the Tenth IEEE Workshop on Real-Time Operating Systems and Software, New York City, May 13, 1993.

Contributions to Conferences and Workshops

2015 Member of the Program Committee of the Organization for Computational Neurorsciences (CNS*2015), July 18-23, 2015, Prague, Czech Republic.

2014 Member of the Program Committee of the Organization for Computational Neurorsciences (CNS*2014), July 26-31, 2014, Québec City, Canada.

2013 Member of the Program Committee of the Organization for Computational Neurorsciences (CNS*2013), July 13-18, 2013, Paris, France.

2002 Member of the Program Committee of the Fifth IEEE Conference on Open Architectures and Network Programming (OPENARCH'02), New York, NY, June 23-27, 2002.

2001 Member of the Program Committee of the Third International Working Conference on Active Networks (IWAN'2001), September 30 – October 2, 2001, Philadelphia, Pennsylvania.

2001 Member of the Program Committee of the Fourth IEEE Conference on Open Architectures and Network Programming (OPENARCH'01), Anchorage, Alaska, April 27-28, 2001. Organizer and Chairman of the Panel Discussion entitled "Network Programmability in the Optical Age".

2000 Member of the Program Committee of the Second International Working Conference on Active Networks (IWAN'2000), October 16-18, 2000, Tokyo, Japan.

2000 Member of the Program Committee of the Third IEEE Conference on Open Architectures and Network Programming (OPENARCH'2000), Tel-Aviv, Israel, March 26-27, 2000.

1999 Member of the Program Committee of the Second IEEE Conference on Open Architectures and Network Programming (OPENARCH'99), New York, NY, March 26-27, 1999.

1998 Program Chair, Network Management Workshop, University of Maryland at College Park, College Park, MD, June 11, 1998.

1997 Organizer and Chairman of the Panel Discussion “Open Network Control” at the 1997 IFIP/IEEE Symposium on Integrated Network Management, ISINM’97, San Diego, CA, May 12-16, 1997.

1997 Member of the Program Committee of the Singapore International Conference on Networks, April 17-19, 1997.

1996 Organizer and Chairman of the Panel Discussion “Software Architectures for Mobile Networks” at MobiCom’96, Rye, NY, November 10-12, 1996.

1995 Member of the International Advisory Committee of the Malaysia International Conference on Communications 95, Langkawi Island, Malaysia, 20 November, 1995.

1995 Member of the Program Committee of Multimedia95, San Francisco, CA, November 5-9, 1995.

1995 Member of the Program Committee of the Singapore International Conference on Networks and International Conference on Information Engineering, July 3-7, 1995. Chairman of the Session ‘‘Network Management’’.

1995 Member of the Program Committee of the 5th International Workshop on Network and Operating System Support for Digital Audio and Video, Durham, NH, April 19-21, 1995.

1995 Member of the Program Committee of the Third ORSA Conference on Telecommunications, Boca Raton, FL, March 20--22, 1995.

1994 Member of the International Advisory Committee of the IEEE TENCON’94 Ninth Annual International Conference on Frontiers on Computer Technology, Singapore, August 22-26, 1994.

1994 Member of the Program Committee of the 6th ERCIM Workshop on High Performance Communication, Stockholm, Sweden, June 1-3, 1994.

1993 Member of the Program Committee of the Singapore International Conference on Networks and International Conference on Information Engineering, September 6-10, 1993. Chairman of the Session ‘‘ATM Error/Flow Control’’.

1993 Member of the Program Committee of the ITC Seminar in Bangalore, India, November 14-16, 1993. Chairman of the Session ‘‘Switching’’.

1993 Member of the Program Committee of the Second Joint SAIEE/CSSA International Symposium Network Management‘93, Johannesburg, South Africa, August 9-11, 1993.

1993 Member of the Program Committee of the Cracow International Workshop on Requirements and Techniques for Network Management, Crackow, Poland, May19-21, 1993.

1993 Member of the Program Committee of the International Conference on Advanced Information Processing Techniques for LAN and MAN Management, Paris, April 7-9, 1993.

1993 Member of the Program Committee of the International Symposium on Integrated Network Management, San Francisco, CA, 1993. Chairman of the Session ‘‘Specific Approaches’’.

1992 Member of the Program Committee of NOMS’92, Memphis, TN, April 6-9, 1992.

1992 Member of the Program Committee of INFOCOM’92, Florence, Italy, May 4-8,1992.

1992 Member of the Program Committee of the Second ORSA Conference on Telecommunications, Boca Raton, FL, March 9-11, 1992.

1991 Member of the Program Committee of RACE TMN Symposium, London, November 1991.

1991 Organizer and Chairman of the Session “Network Management” at the Sixth IEEE Computer Communications Workshop, Monterey, CA, October 21-23, 1991.

1991 Member of the Program Committee of the International Symposium on Integrated Network Management, Washington, D.C., April 1-5,1991. Chairman of the Session “Modeling and Design: Requirements and Verification”.

1991 Member of the Program Committee of the INFOCOM’91, Bal Harbor, FL, April 7-11,1991. Chairman of the Session “Integrated Networks”.

1990 Organizer and Chairman of the Session “Traffic Control Architectures for Integrated Networks” at the IEEE Global Telecommunication Conference, San Diego, CA, December 1-3, 1990.

1990 Organizer and Chairman of the Symposium on Network Management and Control, Columbia University, Center for Telecommunications Research, February 16, 1990.

1989 Chairman of the Session “LAN Management” at the First International Symposium on Integrated Network Management, Boston, MA, May 14-17, 1989.

1989 Organizer and Chairman of the Symposium on Traffic Control Architectures for Integrated Networks, Columbia University, Center for Telecommunications Research, April 28, 1989.

1987 Co-chairman of the Conference on Visual Communications and Image Processing II of the 1987 Cambridge Symposium on Optics in Medicine and Visual Image Processing, Cambridge, MA, October 25-30, 1987.

1987 Member of the Technical Committee of the Fifth International Workshop on Integrated Electronics and Photonics in

Communications, Research Triangle Park, NC, October 21-23, 1987.

1987 Cluster Chairman of the Session “Queueing Problems in Telecommunication Networks” at the ORSA/TIMS ‘87, New Orleans, LA, May 4-6, 1987.

1987 Co-Chairman of the “IEEE Workshop on Packetized Video,” Columbia University, New York, May 1, 1987.

1987 Organizer and Chairman of the Workshop on Telecommunication Networks, Columbia University, March 13th, 1987.

1987 Chairman of the Session “Network Management - Local Area Networks” at the INFOCOM ‘87, San Francisco, CA, March 30-April 2, 1987.

1987 Co-Chairperson of the Session “The Algebraic Topology of Queueing Network Lattices” at the Conference on Queueing Networks and their Applications, New Brunswick, NJ, January 7-9, 1987.

1986 Chairman of the Panel Discussion “Trends in Fast Parallel Computing” at the Workshop on Distributed Algorithms in Communication and Computation, Dedham and Cambridge, MA, October 22-24, 1986.

1986 Co-Organizer and Co-Chairman of the Session “Analytical Problems in Performance Modeling,” at the First Computer Communications Workshop, Warner Springs, CA, September 15-16, 1986.

1986 Co-Chairman of Conference 707, Visual Communications and Image Processing, at the Conference on Fiber Optics, Optoelectronics, and Laser Applications in Science and Engineering (Fiber LASE’86), Boston, MA, September 15-16, 1986. Also Chairman of the Session “Image Coding.”

1986 Organizer and Chairman of the Invited Session “Performance Evaluation Issues for Integrated Protocols”, at the IEEE International Conference on Communications, Toronto, Canada, June 22-25, 1986.

1985 Organizer and Chairman of the Invited Session “Experimental Integrated Local Area Networks”, GLOBECOM ‘85, New Orleans, LA, December 2-5, 1985.

1985 Organizer and Chairman of the Invited Session “Fundamental Issues in Computer Communication Networks,” at the IEEE International Conference on Communications, Chicago, IL, June 23-26, 1985.

1985 Organizer and Chairman of the Panel Discussion “The Role of Experimentation in Local Area Network Research,” at INFOCOM ‘85, Washington, DC, March 25-28, 1985.

1984 Organizer and Chairman of the Invited Session “Computer Networks Performance,” at the Eighteenth Conference on Information Sciences and Systems, Princeton University, Princeton, NJ, March 14-16, 1984.

1982 Chairman of the “Network Protocols” Session at the Sixteenth Annual Conference on Information Sciences and Systems, Princeton University, March 17-19, 1982.

Seminars/Talks

2019 “Building the Functional Map of the Fruit Fly Brain”, Columbia Workshop on Brain Circuits, Memory and Computation, Columbia University, New York, March 21-22, 2019.

2018 “Building the Functional Map of the Fruit Fly Brain”, Symposium on Systems Neuroscience, November 20-21, 2018, National Tsing Hua University, Hsinchu, Taiwan.

2018 “Representation and Processing Mechanisms in the Early Olfactory and Visual Systems of the Fruit Fly”, Computation, Cognition and the Brain, Computational Neuroscience Workshop, June 1, 2018, Rutgers, New Brunswick, NJ.

2017 “The Fruit Fly Brain Observatory”, Cold Spring Harbor Laboratory, October 30, 2017.

2016 “The Fruit Fly Brain Observatory”, Open Science Challenge at the Open Data Science Symposium, December 1, 2016, Washington, DC.

2016 “NeuroInformation Processing Machines”, European Conference on Visual Perception, What is on Your Mind? Inverse Problems in Vision Science Symposium, August 28 - September 1, 2016, Barcelona, Spain.

2016 “The Digital Fruit Fly Brain”, Central Complex IV: A New Hope to Understand a Multifaceted Brain Region Workshop, Janelia Reserch Campus, March 20-23, 2016, Ashburn, VA.

2016 “NeuroInformation Processing Machines”, Neuro-Inspired Computational Elements Workshop, March 7-9, 2016, University of California, Berkeley, CA.

2015 “NeuroInformation Processing Machines”, Department of Mathematical Sciences, New Jersey Insititute of Technology, November 3, 2015, Newark, NJ.

2015 “The Digital Fruit Fly Brain”, Department of Biomedical Engineering, Washington University, October 29, 2015, St. Louis, MI.

2015 “Neurokernel: Building an in Silico Fruit Fly Brain”, Kavli Cortical Computation Workshop, MIT, September 19-20, 2015, Cambridge, MA.

2015 “Neurokernel: An Open Source Platform for Emulating the Fruit Fly

Brain", CNS*2015 Workshop on Open Collaboration in Computational Neuroscience, Thursday, July 23, 2015, Prague, Czech Republic.

2015 "Projection Neurons in Drosophila Antennal Lobes Signal the Acceleration of Odor Concentrations", CNS*2015 Workshop on Methods of System Identification for Studying Information Processing in Sensory Systems, July 22, 2015, Prague, Czech Republic.

2015 "Neurokernel: Building an in Silico Fruit Fly Brain", Columbia Workshop on Brain Circuits, Memory and Computation, March 17, 2015, New York, NY.

2014 "Massively Parallel Neural Circuits for Steoroscopic Color Vision: Encoding, Decoding and Identification", Institute for Neuroinformatics, November 14, 2014, Zurich, Switzerland.

2014 "Neurokernel: Building an in Silico Fruit Fly Brain", ESF-EMBO Symposium 2014: Flies, Worms and Robots: Combining Perspectives on Minibrains and Behaviour, November 8-13, 2014, Sant Feliu de Guixols, Spain.

2014 "Spiking Neural Circuits with Dendritic Stimulus Processors: Encoding, Decoding and Identification", SUNY Downstate Medical Center, October 15, 2014, Brooklyn, NY.

2014 "Neurokernel: Emulating the Drosophila Brain on Multiple GPUs", NeuroInformatics 2014 Workshop on Open Collaboration in Computational Neuroscience, August 27, 2014, Leiden, The Netherlands.

2014 "Spiking Neural Circuits with Dendritic Stimulus Processors: Encoding, Decoding, and Identification", CNS*2014 Workshop on Methods of System Identification for Studying Information Processing in Sensory Systems, July 30, 2014, Quebec City, Canada

2013 "The t-Transform and Its Inverse in Modeling Neural Encoding and Decoding", CNS*2013 Workshop on Methods of Information Theory in Computational Neuroscience, July 18, 2013, Paris, France.

2013 "Functional Identification of Neural Circuits with Spiking Inputs", CNS*2013 Workshop on Methods of System Identification for Studying Information Processing in Sensory Systems, July 17, 2013, Paris, France.

2013 "The t-Transform and Its Inverse in Modeling Neural Encoding and Decoding", Neural Coding Workshop: Information Beyond Shannon, July 3-4, 2013, Prague, Czech Republic.

2012 "Drosophila Antennal Lobe Projection Neurons Encode the Acceleration of Time-Varying Odorant Concentrations", CNS*2012 Workshop on Examining the Dynamic Nature of Neural Representations with the Olfactory System, July 26, 2012,

Atlanta/Decatur, GA.

2012 "Channel Identification Machines", CNS*2012 Workshop on Methods of System Identification for Studying Information Processing in Sensory Systems, July 25, 2012, Atlanta/Decatur, GA.

2012 "Massively Parallel Neural Encoding and Decoding of Visual Stimuli Using GPUs", Workshop on Accelerators in High Performance Computing and Computational Science, June 5-6, 2012, College of Staten Island, City University of New York.

2012 "Identifying Dendritic Processing" The Seiden Workshop on Control Theory in Biology, March 13-14, 2012, Technion, Haifa, Israel.

2011 "The Power of Connectivity: Identity Preserving Transformations on Visual Streams in the Spike Domain", Laboratory for Information and Decision Systems (LIDS), MIT, December 6, 2011, Cambridge, MA.

2011 "Massively Parallel Neural Encoding and Decoding of Visual Stimuli", Computational Biology Center, IBM Research, Yorktown Heights, NY, November 9, 2011.

2011 "The Geometry of Time Encoding Machines", Prestige Lecture Series in Science of Information, Center for Science of Information, Purdue University, West Lafayette, IN, November 7, 2011.

2011 "Dendritic Decoding of Visual Stimuli Encoded with Hodgkin-Huxley Neurons", IEEE International Symposium on Information Theory, August 2, 2011, Saint Petersburg, Russia.

2011 "Reverse Engineering Drosophila Olfactory Sensory Neurons", CNS*2011 Workshop on Methods of Systems Identification for Studying Information Processing in Sensory Systems, Thursday, July 28, 2011, Stockholm, Sweden.

2011 "Memristors in Computational Neuroscience", The 2011 CapoCaccia Cognitive Neuromorphic Engineering Workshop, Capo Caccia, Sardinia, Italy, May 11, 2011.

2011 "Spike Processors in Sensory Systems", The 2011 CapoCaccia Cognitive Neuromorphic Engineering Workshop, Capo Caccia, Sardinia, Italy, May 6, 2011.

2010 "Encoding Natural Scenes with a Population of Hodgkin-Huxley Neurons", Redwood Center for Theoretical Neuroscience, University of California, Berkeley, November 10, 2010, Berkeley, CA.

2010 Encoding Natural Scenes with a Population of Hodgkin-Huxley Neurons Department of Bioengineering, Stanford University, November 8, 2010, Palo Alto, CA.

2010 "Encoding Visual Stimuli with a Population of Hodgkin-Huxley Neurons", Department of Applied Physics and Applied

Mathematics, Columbia University, October 12, 2010, New York, NY.

2010 "Video Time Encoding Machines", Department of Electrical Engineering, Yale University, September 30, 2010, New Haven, CT.

2010 "System Identification of Drosophila Olfactory Sensory Neurons", Department of Bioengineering, Imperial College, September 20, 2010, London.

2010 "Encoding Natural Scenes with Neural Circuits with Random Thresholds", CNS*2010 Workshop on Methods of Information Theory in Computational Neuroscience, Thursday and Friday, July 29-30, 2010, San Antonio, TX.

2010 "System Identification of Drosophila Olfactory Sensory Neurons", Columbia University - Technion Workshop on Neuroengineering of Biological Networks, CUTE*2010, March 16, 2010, Columbia University, New York, NY.

2009 "Time Encoding Machines and Elements of Spike Processing", Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, October 29, 2009, Urbana, IL.

2009 "Population Encoding with Hodgkin-Huxley Neurons", Center for Theoretical Neuroscience, College of Physicians and Surgeons, Columbia University, New York, NY, September 18, 2009.

2009 "Synaptic Encoding", Methods of Information Theory in Computational Neuroscience, CNS*2009 Workshop, July 22, 2009, Berlin, Germany.

2009 "Methods of Signal Processing/Communications in Computational Neuroscience", In Honor of Stuart C. Schwartz on the Occasion of his Retirement, Princeton University, Princeton, NJ, May 8, 2009.

2009 "The Geometry of Time Encoding Machines and Elements of Spike Processing", Technion, Haifa, Israel, May 4, 2009.

2009 "Invariant Representations of Visual Streams in the Spike Domain", Department of Computer Science, Dartmouth College, Hanover, NH, January 28, 2009.

2008 "Encoding, Processing and Decoding of Sensory Stimuli with a Population of Spiking Neurons", Methods of Information Theory in Computational Neuroscience, CNS Workshop, Portland, OR, July 23-24, 2008.

2008 "Time Encoding Machines", Workshop on Modeling and Analysis of Computer and Communication Systems: In Honor of Hisashi Kobayashi on the Occasion of his 70th Birthday and Retirement, Princeton University, Princeton, NJ , May 9, 2008.

2007 "Overcomplete Stitching Algorithm for Time Decoding Machines", HRL Laboratories, LLC., November 6, 2007, Malibu, CA.

2007 "Time Encoding Machines", Department of Electrical Engineering, UCLA, November 5, 2007, Los Angeles, CA.

2007 "Population Encoding with Hodgkin-Huxley Neurons", Frankfurt Institute for Advanced Studies (FIAS), October 8, 2007, Frankfurt am Main, Germany.

2007 "Recovery of Stimuli Encoded with an Ensemble of Hodgkin-Huxley Neurons", Methods of Information Theory in Computational Neuroscience, CNS Workshop, July 11, 2007, Toronto, Canada.

2007 "Time Encoding Machines", Neuromorphic Engineering Workshop, Telluride, CO, July 1-21, 2007.

2006 "Information Representation with an Ensemble of Hodgkin-Huxley Neurons", Methods of Information Theory in Computational Neuroscience, CNS Workshop, Edinburgh, U.K., June 20, 2006.

2005 "Information Representation with Time Encoding Machines", Information-Theoretic Bases of Computational Neuroscience, CNS Workshop, Madison, WI, July 20-21, 2005.

2005 "Time Encoding Machines and Algorithms for Signal Recovery", University of Maryland, College Park, May 8, 2005.

2004 "Time Encoding: A Novel Signal Processing Paradigm for Ultra-Low Voltage Applications", Invited Speaker at the Conference on Nanotechnology, Budapest, Hungary, April 26-27, 2004.

1996 Building Open Programmable Multimedia Networks, Ericsson Infocom, Karstat, Sweden, November 5, 1996.

1996 Open Network Control for Broadband Networks,
Chinese University of Hong Kong, Hong Kong, July 22, 1996.

1995 Programmability and Service Creation for Multimedia Networks, Olivetti Research Laboratories, Cambridge, U.K., December 15, 1995.

1995 Multimedia Networking,
Institute of Systems Science, Singapore, August 11, 1995.

1995 A Binding Architecture for Multimedia Networking,
Invited paper at the 13th Brazilian Symposium on Networks and Distributed Systems, Belo Horizonte, Brazil, May 25, 1995.

1994 Managing Multimedia Services,
AT&T Bell Laboratories, Holmdel, NJ, November 18, 1994.

1994 A Binding Architecture for Multimedia Networks,
NEC Research, Princeton, NJ, November 22, 1994.
TINA-C, Bellcore, NJ, November 21, 1994.
Sun Microsystems, Mountain View, CA, October 17, 1994.

1994 The COMET Project at Columbia University,
Royal Institute of Technology (KTH), Stockholm, Sweden, June 8, 1994.
Erickson, Stockholm, Sweden, June 16, 1994.

1994 On the Equivalence between Circuit and Cell Switching,

6th ERCIM Workshop, Stockholm, Sweden, June 1-3, 1994.

1994 Multimedia Networking with Quality of Service Guarantees,
National Technical University of Athens, Athens, Greece, April 25, 1994.
University of Crete, Heraklion, Greece, May 16, 1994.

1994 Management and Control of Giant Gigabit Networks,
National Technical University of Athens, Athens, Greece, April 26, 1994.
University of Crete, Heraklion, Greece, May 16, 1994.

1993 Challenges in Multimedia Networking, The Singapore Chapter of the IEEE Communications Society, Singapore, December 2, 1993.

1993 Structure, Dynamics, Visualization and Control of Giant Gigabit Networks,
AT&T Bell Laboratories, Holmdel, NJ, June 3, 1993.
NEC Research, Princeton, NJ, May 7, 1993.
IBM T.J. Watson Research Center, Howthorne, NY, April 30, 1993.
Sun Microsystems, Mountain View, CA, April 22, 1993.
Technische Hochschule Darmstadt, Department of Electrical Engineering, Darmstadt, Germany, January 21, 1993.

1992 Structure and Visualization of Giant Gigabit Networks,
University of Washington, Department of Computer Science, Saint Louis, MI, November 6, 1992.

1991-1992 Control of Resources in Broadband Networks with Quality of Service Guaranteees,
University of Southern California, Los Angeles, Department of Computer Engineering, October 18, 1991.
Polytechnic University, New York, Department of Electrical Engineering, April 16, 1992.
Northwestern University, Department of Electrical Engineering, April 20, 1992.
Purdue University, Department of Electrical Engineering, April 21, 1992.

1991 An Architecture for Real-Time Control and Management of Gigabit Networks,
University of California at Los Angeles, Department of Electrical Engineering, October 17, 1991.

1991 The Integration of Real-Time Network Control and Management,
IBM Zurich Research Laboratories, Ruschlikon, Switzerland, September 2, 1991.

1991 Quality of Service Management,
AT&T Bell Laboratories, Murray Hill, NJ, June 20th, 1991.

1991 Object-Oriented Network Management and Control,
University of Pennsylvania, Moore School of Electrical Engineering, Philadelphia, March 20, 1991.

Institute of Systems Science, Singapore, January 8th, 1991.

1991 Real-Time Traffic Measurements on MAGNET II,
Bell Communications Research, Morristown, NJ, February 21, 1991.
Institute of Systems Science, Singapore, January 8th, 1991.
IBM Scientific Center, Rio de Janeiro, Brazil, December 19, 1989.

1989 Modeling and Admission Control of Real-Time Packet Traffic,
University of Maryland, Systems Research Center, College Park, MD, May 30, 1989.

1989 Intelligent Network Control and Management,
The First International Symposium on Integrated Network Management, Panel on Intelligent Network Management, Boston, MA, May 14-17, 1989.

1989 A Framework for Knowledge-Based Monitoring and Control of Integrated Networks,
Bell Communications Research, Morristown, NJ, April 7, 1989.
Bell Laboratories, Murray Hill, NJ, June 8th, 1989.
Institute for Computer Science, Iraklion, Crete, Greece, August 1, 1989.
GTE Laboratories, Waltham, Massachusetts, August 16, 1989.

1988 WIENER: A Knowledge Based Traffic Control Architecture for Integrated Networks,
IBM T.J. Watson Research Center, Hawthorn, August 25, 1988.
Technische Universitat Munchen, Munich, Germany, February 27, 1989.

1988 The Game of Networking,
Franco-American Workshop on New Directions in Integrated Networks, INRIA, Sophia-Antipolis, France, June 22-24, 1988.

1988 Optimal Flow Control of Computer Communication Networks,
Universita di Milano, Department of Computer Science, Milan, Italy, June 6, 1988.
Italtell Central Research Laboratories, Milan, Italy, June 17, 1988.

1988 The Center for Telecommunications Research at Columbia University,
Universite Rene Descartes, Ecole des Hautes Etudes en Informatique, Paris, France, April 25,1988.

1988 Asynchronous Algorithms for Optimal Flow Control,
Ecole Nationale Superieure de Telecommunication, Department of Electrical Engineering, Paris, France, April 28, 1988.
Universite Rene Descartes, Ecole des Hautes Etudes en Informatique, Paris, France, May 9, 1988.
Performance Evaluation Workshop, Milan, Italy, May 30-June 1, 1988.

1988 A Game Theoretical Approach to Decentralized Flow Control of Markovian Queueing Networks,
Technion (Israel Institute of Technology), Department of Electrical Engineering, Haifa, Israel, April 12, 1988.

1988 Optimal Load Balancing Algorithms for Markovian Queueing Networks,
Ecole Nationale Superieure de Telecommunication, Department of Electrical Engineering, Paris, France, March 17, 1988.

1988 MAGNET II: A Knowledge Based Integrated Network,
IBM Zurich Research Laboratories, Ruschlikon, Switzerland, March 18, 1988.
Technion (Israel Institute of Technology), Department of Computer Science, Haifa, Israel, April 14, 1988.
Universite Rene Descartes, Ecole des Hautes Etudes en Informatique, Paris, France, May 2, 1988.
University Marie Curie, Department of Computer Science (MASI), Paris, France, May 5, 1988.
Italtell Central Research Laboratories, Milano, Italy, June 16, 1988.
Hewlett Packard Central Research Laboratories, Bristol, England, July 11, 1988.

1987 MAGNET II: An Integrated Metropolitan Area Network,
NEC Mobile Communications Division, Yokohama, Japan, September 10, 1987.
NEC Central Research Laboratories, Kawasaki, Japan, September 28, 1987.
NTT Musashino ECL Laboratories, Tokyo, October 7, 1987.
Fujitsu Laboratories, Kawasaki, Japan, October 22, 1987.
Osaka University, Department of Engineering Science, Osaka, October 23, 1987
National University of Singapore, Institute of Systems Science, Singapore, December 9, 1987.

1987 Decentralized Algorithms for Optimal Control of Markovian Queueing Networks,
NTT Musashino ECL Laboratories, Tokyo, October 7, 1987.
Kyoto University, Department of Applied Mathematics and Physics, Kyoto, October 27, 1987.
NEC Central Research Laboratories, Kawasaki, Japan, Nov. 10, 1987.

1987 A Probabilistic View of Routing and Flow Control in Telecommunication Networks,
Workshop on Discrete Event Systems: Models and Applications, Sopron, Hungary, August 3-7, 1987.
Conference on Advances in Communication and Control Systems, Washington, DC, June 18-20, 1987.

1986-1987 MAGNET's Integrated Network Architecture and Protocols,
IBM T.J. Watson Research Center, Yorktown Heights, February 19, 1987.
University of California at Berkeley, Department of Electrical Engineering and Computer Sciences, September 29, 1986.
Midwest Workshop on Communication Systems, Washington University, Saint Louis, MO, Nov. 20, 1986.
IEEE Communication Society Communications Software Technical Committee at GLOBECOM '86, Houston, TX, December 3, 1986.

1987 Decentralized Optimal Flow Control of Markovian Queueing Networks with Multiple Controllers,
Polytechnic University, Department of Electrical Engineering, Brooklyn, March 5, 1987.
SRI International, Palo Alto, CA, September 30, 1986.
University of Michigan, Ann Arbor, MI, Department of Industrial and Operations Engineering, October 8, 1986.

1986 Geometric Algorithms for Markovian Protocol Models,
California Institute of Technology, Department of Electrical Engineering, Pasadena, CA, September 23, 1986.

1986 Optimal Flow Control of Multi-Class Queueing Networks with Decentralized Information,
Bell Communications Research, Morristown, New Jersey, August 8, 1986.
University of California at Los Angeles, Department of Electrical Engineering, Los Angeles, CA, September 22, 1986.

1986 Network and User Optimal Flow Control with Decentralized Information,
North Carolina State University, Department of Computer Science, Raleigh, North Carolina, April 22, 1986.

1986 Integrated Bypass Technologies,
IEEE Workshop on Metropolitan Area Networks, St. Petersburg, FL, April 3-5, 1986.

1985 Linear Prediction Using Cochlear Models (with Benjamin Monderer)
Fourth ASSP Workshop on Multidimensional Digital Signal Processing, Xerox International Center, Leesburg, VA, October 28-30, 1985.

1985 Optimal Routing and Flow Control of a Network of Parallel Processors,
AT&T Bell Laboratories, Murray Hill, New Jersey, July l5, 1985.
University of Pennsylvania, Moore School of Electrical Engineering, Philadelphia, April l6, 1986.

1985 Flow Control Protocols for Integrated Digital Networks with Partially Observed Voice Traffic,

University of Maryland, College Park, Department of Electrical Engineering, May 3, 1985.
University of Colorado, Boulder, Department of Electrical Engineering, April l6, 1985.

1985 A Separation Principle between Flow Control and Estimation in Integrated Digital Networks,
Princeton University, Department of Electrical Engineering and Computer Science, February 6, 1985.

1985 A Fiber Optic Based Integrated LAN for MAGNET's Testbed Environment,
Bell Communications Research, Morristown, New Jersey, February 7, 1985.
Bell Laboratories, Holmdel, New Jersey, July 30, 1985.

1984 The Geometry of Lattices for Markovian Queueing Networks,
Columbia University, Department of Electrical Engineering, March 23, 1984.
Performance Workshop '84, Universite de Paris-Sud, Orsay, France, December 18, 1984.

1984 The Reversed Process and Product Form Solutions for Markovian Queueing Networks,
Conference on Decision and Control, Las Vegas, Nevada, December 12-14, 1984.

1984 MAGNET: Columbia's Integrated Network Testbed,
Bell Communications Research, Murray Hill, New Jersey, July 27, 1984.
Columbia University, Department of Electrical Engineering, November 2, 1984.
AT&T Bell Laboratories, Murray Hill, New Jersey, December 10, 1984.
AT&T Bell Laboratories, Allentown, Pennsylvania, January 21, 1985.
University of Colorado, Boulder, Department of Electrical Engineering, April 15, 1985.
GTE Laboratories, Waltham, Massachusetts, April 22, 1985.
University of Maryland, College Park, Department of Electrical Engineering, May 2, 1985.

1984 Optimal Flow Control in a CSMA/CD Environment,
SUNY at Stony Brook, Department of Electrical Engineering, February 23, 1984.

1983 Flow Control in Local Area Networks,
Columbia University, Department of Electrical Engineering, October 21, 1983.

1983 Experimental Performance Evaluation of Computer Communication Networks,

Phillips Laboratories, Briarcliff Manor, New York, July 15, 1983.

1983 A Network Testbed for Local Area Networks Supporting Integrated Services,
Bell Laboratories, West Long Branch, New Jersey, May 13, 1983.

1983 Optimal Flow Control Strategies in Computer Communication Networks,
Bell Laboratories, Murray Hill, New Jersey, January 19, 1983.

1982 Centralized Optimum Flow Control of a Jacksonian Network,
IBM Thomas J. Watson Research Center, Yorktown Heights, New York, February 19, 1982.

1982 Control Issues in Computer Communication Networks,
University of Connecticut, Storrs, Department of Electrical Engineering and Computer Science, February 5, 1982.

1981 End-to-End Optimal Flow Control in Computer Communication Networks,
City College of the University of New York, Department of Electrical Engineering December 3, 1981.

1981 Optimal Control of Queueing Networks,
University of Maryland (College Park), Department of Electrical Engineering, November 12, 1981.

1981 Optimal Control of a Class of Queueing Networks
Columbia University, Department of Electrical Engineering, October 30, 1981.

1980 Optimal Information Processing with Counting Point Process Observations: Detection, Workshop of the NATO-ASI Conference on Stochastic Systems: The Mathematics of Filtering and Identification and Applications, Les Arcs, France, June 22 - July 5, 1980.

1980 Optimal Information Processing Using Counting Point Process Observations,
University of Minnesota, Minneapolis, Department of Electrical Engineering, March 7, 1980.
IBM Thomas J. Watson Research Center, Yorktown Heights, New York, March 14, 1980.

1980 Optimal Information Processing in Optical Communications,
Columbia University, Department of Electrical Engineering, February 8, 1980.