

VITA

**Mostafa H. Ammar**

**Regents' Professor**

School of Computer Science  
Georgia Institute of Technology  
Atlanta, GA 30332-0280  
ammar@cc.gatech.edu

August 2017

**Educational Background**

Ph.D.	1985	University of Waterloo	Electrical Engineering
S.M.	1980	Massachusetts Institute of Technology	Elec. Eng. and Comp. Sci.
S.B.	1978	Massachusetts Institute of Technology	Computer Science and Engineering

**Employment History**

<b>Title</b>	<b>Organization</b>	<b>Years</b>
Regents' Professor (Assistant Prof. 1985-1991 Associate Prof. 1991-1998 Professor 1998-2003) <i>Associate Chair</i>	School of Computer Science Georgia Institute of Technology Atlanta, GA	1985–present
Visiting Professor Visiting Researcher	Laboratoire d'Informatique, Uinverstity of Paris 6 Thomson Research Lab Paris, France	Feb. 2015 - May 2015 June/July 2006 June/July 2009
Visiting Senior Member of Technical Staff ( <b>Sabbatical</b> )	BellSouth Telecommunications, Inc. Advanced Data Networking Group Atlanta, GA	Jan. 1999– Dec. 1999
Visiting Professor	Dept. of Computer Science University of Waterloo Waterloo, Ontario, Canada	Summer 1998
Visiting Scientist	Rodeo Project INRIA Sophia-Antipolis, France	Summer 1996
Member of Scientific Staff Manager Data Network Planning	Bell-Northern Research Ottawa, Ontario, Canada	1980–1982

**Current Fields of Interest**

General Interest: Computer Network Architectures and Protocols:

Current Specific Interests: Mobile Cloud Computing, Overlay Networks, Network Virtualization, Mobile Wireless Networks, Disruption Tolerant Networks.

## I. Teaching

### A. Courses Taught (Last 10 years)

College of Computing, Georgia Institute of Technology, Atlanta, Georgia

<b>Qtr/Yr</b>	<b>Course</b>	<b>Title</b>	<b>Number of Students</b>	<b>Comment</b>
Spring 06	CS3251	Computer Networks I	40	
Fall 06	CS3251	Computer Networks I	35	
Spring 07	CS8803	Wireless and Mobile Networks	35	
Fall 08	CS6250	Computer Networks	80	
Fall 09	CS6250	Computer Networks	80	
Fall 10	CS3251	Computer Networks I	60	
Fall 11	CS3251	Computer Networks I	60	
Spring 12	CS6250	Computer Networks	60	
Fall 12	CS3251	Computer Networks I	57	
Spring 13	CS6250	Computer Networks I	96	
Fall 13	CS6250	Computer Networks	69	
Spring 14	CS4251	Computer Networks II	18	
Fall 14	CS6250	Computer Networks	71	
Fall 14	CS8803	Computer Networks	35	ARAMCO-Hosted MS Program
Fall 15	CS6250	Computer Networks	73	
Spring 16	CS6250	Computer Networks	70	
Fall 16	CS6250	Computer Networks	83	
Spring 17	CS6250	Computer Networks	53	

### B. Graduate Students Supervised – Current

#### Ph.D. Students

1. Karim Habak (with Zegura)  
Research: *Mobile Cloud Computing*
2. Ahmed Said (with Zegura)  
Research: *Traffic Shaping and Scheduling*
3. Tarun Mangla (with Zegura)  
Research: *Quality of Experience for Video Streaming*
4. Yimeng Zhao (with Zegura)  
Research: *Network Virtualization*

### C. Ph.D. Students Supervised – Graduated

1. AliReza Monfared (ECE) (with Zegura)  
Graduation date: May 2016 (Defended January 2016)  
Thesis Title: *Tactical HPC: Scheduling High Performance Computers in a Geographical Region*  
Current Position: Microsoft, Redmond, WA.
2. Samantha Lo (with Zegura)  
Graduation date: December 2015  
Thesis Title: *Design and Evaluation of Virtual Network Migration Mechanisms on Shared Substrate*  
Current Position: AT&T Research, NJ.
3. Ahmed Mansy  
Graduation date: May 2014  
Thesis Title: *Network and End-Host Support for HTTP Adaptive Video Streaming*  
Current Position: Yahoo!, Sunnyvale, CA.
4. Cong Shi (with Zegura)  
Graduation Date: August 2014  
Thesis Title: *Addressing Connectivity Challenges for Mobile Computing and Communications*  
Current Position: Square Inc., Atlanta, GA.
5. Yang Chen (with Zegura)  
Graduation date: May 2014 (thesis submitted January 2014)  
Thesis Title: *Characterizing and mitigating communication challenges in wireless and mobile network*  
Current Position: Schlumberger, Texas.
6. Mehmet Demirci  
Graduation date: May 2013  
Thesis Title: *Facilitating the provision of auxiliary support services for overlay networks*  
Current Position: Assistant professor, Gazi University, Ankara, Turkey.
7. Mukkaram Bin Tariq (with Feamster)  
Graduation date: May 2010  
Thesis Title: *Modeling Performance of Networked Services Using Causal Reasoning*  
Current Position: Google, Mountain View, CA
8. Srini Seetharaman  
Graduation date: December 2007  
Thesis Title: *Analyzing Cross-layer Interaction in Overlay Networks*  
Current Position: Senior Research Scientist, Deutsche Telekom Laboratories, Los Altos, CA
9. Hyewon Jun (with Zegura)  
Graduation date: December 2007  
Thesis Title: *Power Management in Disruption Tolerant Networks* Current Position: Google, New York
10. Yong Zhu  
Graduation date: December 2006  
Thesis Title: *The Design and Analysis of Overlay Networks and Network Virtualization*  
Current Position: Google, Mountain View, CA.

11. Wenrui Zhao (with Zegura)  
 Graduation date: December 2006  
 Thesis Title: *Routing and Network Design in Delay Tolerant Networks*  
 Position upon graduation, Ask.com, NJ,  
 Current Position: Facebook.
12. Donghua Xu (with Richard Fujimoto)  
 Graduation date: May 2006  
 Thesis Title: *Scalability and Composability Techniques for Network Simulation*  
 Current Position: Google, Mountain View, CA.
13. Jinliang Fan  
 Graduation date: December 2005  
 Thesis Research: *Enabling Performance Tradeoffs Through Dynamic Configuration of Advanced Network Services*  
 Current Position: Microsoft, Redmond, WA.
14. Taehyun Kim (ECE)  
 Graduation date: May 2005  
 Thesis Title: *Scalable Video Streaming over the Internet*  
 Position upon graduation: Senior Engineer, Freescale Semiconductor, Austin, TX,  
 Current position: Principal Engineer, Samsung, Korea.
15. Qi He  
 Graduation Date: August 2005  
 Thesis Title: *The Design and Evaluation of Advanced TCP-based Services over an Evolving Internet*  
 Current Position: Apple, Cupertino, CA.
16. Pradnya Karbhari (with Ellen Zegura)  
 Graduation date: December 2005  
 Thesis Title: *Throughput and Fairness Considerations in Overlay Networks for Content Distribution*  
 Current Position: Google Research, India.
17. Meng Guo (with Ellen Zegura)  
 Graduation date: December 2005  
 Thesis Title: *Supporting Scalable and Resilient Video Streaming Applications in Evolving Networks*  
 Current Position: Google Research, Mountain View, CA.
18. Minaxi Gupta  
 Thesis Research: *Large-Scale Quality Conscious Content Distribution in the Internet*  
 Graduation date: Decemeber 2004  
 Current Position: Associate Professor Department of Computer Science,  
 Indiana University, Bloomington, IN.
19. Li Zou  
 Thesis Title: *State and File-Sharing in Peer-to-Peer Systems*  
 Graduation date: May 2004  
 Position upon graduation: Software Engineer, Brion technologies, Santa Clara, CA.  
 Current Position: Google, Mountain view, CA.

20. Paul Judge  
 Graduation date: December 2002  
 Thesis Title: *Security and Protection Architectures for Large-Scale Content Distribution*  
 Position upon graduation: Chief Technology Officer, Secure Computing, Atlanta, GA.  
 Current Position: Chief Research Office, Baracuda Networks.  
**Georgia Corporate CIO of the year – 2009.**
21. Lenitra Clay  
 Graduation date: December 2002  
 Thesis Research: *Replication Techniques for Scalable Content Distribution in the Internet*  
 Current Position: Intel, Hillsboro, OR.
22. George Riley (co-supervised with Fujimoto)  
 Graduation date: Summer 2001  
 Thesis Title: *Parallel and Scalable Network Simulation*  
 Current Position: Professor, School of Electrical and Computer Engineering,  
 Georgia Tech, Atlanta, GA
23. Tianji Jiang (co-supervised with Zegura)  
 Graduation date: Summer 2000  
 Thesis Title: *Accommodating Scalability and Heterogeneity for Multicast Communication*  
 Current Position: Cisco Systems, San Jose, California
24. Zongming Fei  
 Graduation date: Summer 2000  
 Thesis Research: *Techniques for Supporting Service Scalability over the Internet*  
 Current Position: Professor, Dept. of Computer Science, University of Kentucky, Lexington, KY
25. Xue Li  
 Graduation date: Summer 1998  
 Thesis Title: *Scalable and Adaptive Video Multicast.*  
 Position upon graduation: Member of Technical Staff, Bell Laboratories, Holmdel, N.J.  
 Current position: Verizon Corporate Network and Technology, NJ.
26. M. Jeff Donahoo (Ammar is GRA advisor, Official thesis advisor: Zegura)  
 Proposal date: Summer 1998  
 Thesis Title: *Application-based Enhancements to Network Layer Multicast.*  
 Current Position: Professor,  
 Dept. of Computer Science, Baylor University, Waco, Texas.
27. Kevin Almeroth  
 Graduation date: Spring 1997  
 Thesis title: *Support for Efficient Scalable Delivery of Interactive Multimedia Services.*  
 Current Position: Professor  
 Dept. of Computer Science, University of California, Santa Barbara.  
**(NSF CAREER AWARD, 2000), IEEE Fellow**
28. Rajesh Talpade  
 Graduation date: Summer 1997  
 Thesis title: *Towards Ubiquitous Internet Multicast: Convergence Mechanisms and Data Transfer Reliability.*  
 Current Position: Chief Scientist, Advanced Technology Solutions, Telcordia, Morristown, NJ.

29. Robert Krupczak (Co-supervised with Calvert)  
Graduation date: Summer 1997  
Thesis title: *Protocol Subsystem Support for Efficient and Flexible Communication Services.*  
Current Position: Co-founder, The Krupczak Organization, LLC.  
**CoC Alumni Council Chair, 2006-2009.**
30. Russ Clark  
Graduation date: Spring 1995  
Thesis title: *Solutions for Ubiquitous Information Services: Multiple Protocols and Scalable Servers.*  
Current Position: Senior Research Scientist, School of Computer Science, Georgia Tech.
31. George Rouskas  
Graduation date: Spring 1994  
Thesis title: *Protocols for Lightwave WDM Networks with Applications to Distributed Computing.*  
Current Position: Professor, Dept. of Computer Science,  
North Carolina State University, Raleigh, NC.  
**(NSF CAREER AWARD, 1997), IEEE Fellow**
32. Chung-Ki Lee (co-Supervised with Burns)  
Graduation date: Spring 1992  
Thesis title: *Protocols in Multi-Hop Radio Networks.*  
Current Position: Professor, Dept. of Computer Science,  
Myungji University, Youngiu, Korea.
33. David Stevens  
Graduation date: Winter 1992  
Thesis title: *TDMA Slot Allocation Strategies for Mobile Packet Radio Networks.*  
Position upon graduation: Group Manager, Booz, Allen and Hamilton.
34. Shun Yan Cheung (Co-Supervised with Ahamad)  
Graduation date: Summer 1988  
Thesis title: *Optimizing the Performance of Quorum Consensus Replica Control Protocols.*  
Current Position: Associate Professor, Dept. of Math and Computer Science,  
Emory University, Atlanta, GA.
35. Jose Bernabeu (Co-Supervised with Ahamad)  
Graduation date: Fall 1987  
Thesis title: *Location Finding Algorithms for Distributed Systems.*  
Current Position: Architect, Microsoft.

## II. Research and Creative Scholarship

### A. Thesis

- Ph.D. Thesis Title: *Performance Analysis of Information Systems Using Broadcast Delivery*  
Date Completed: Summer 1985  
Advisor: Johnny Wong  
College: University of Waterloo
- M.S. Thesis Title: *Modeling and Analysis of Unreliable Manufacturing Systems with Finite Storages.*  
Date Completed: Spring 1980  
Advisor: Stanley Gershwin  
College: Massachusetts Institute of Technology

### B. Published/Accepted Journal Papers (refereed)

1. Eramo, V., Ammar, M., Lavacca, F., "Migration Energy Aware Reconfigurations of Virtual Network Function Instances in NFV Architectures," *IEEE Access*, Vol. 5, 2017.
2. Baron, B., Spathis, P., Rivano, H., de Amorim, M. D., Viniotis, Y., Ammar, M., "Centrally-Controlled Mass Data Offloading Using Vehicular Traffic," *IEEE Transactions on Network and Service Management*, Vol. 14, no. 2, June 2017.
3. Eramo, V., Miucci, E., Ammar, M., Lavacca, F.G., "An approach for service function chain routing and virtual function network instance migration in network function virtualization architectures," *IEEE/ACM Transactions on Networking*, Vol. 25, no. 4, March 2017.
4. Eramo, V., Miucci, E., Ammar, M., "Study of Reconfiguration Cost and Energy Aware VNE Policies in Cycle-Stationary Traffic Scenarios." *IEEE Journal on Selected Areas in Communications*, Vol. 34, no. 5, January 2016.
5. Hoseini, S., Fotouhia, A., Hassan, M., Choua, C., Ammar, M., "Efficient and Transparent Use of Personal Device Storage in Opportunistic Data Forwarding," *Elsevier Computer Communications Journal*, January 2016, pp 47-55.
6. Eramo, V., Miucci, E., Ammar, M., "Proposal and Evaluation of a Virtual Router Migration Policy in IP Networks equipped with Adaptive Link Rate Line Cards," *Information Journal*, vol. 18, no. 8, August 2015, pp. 3507-3522.
7. V. Eramo, E. Miucci, M. Ammar, "Proposal and Evaluation of a Virtual Router Migration Policy in IP Networks equipped with Adaptive Link Rate Line Cards," *Information Journal*, vol. 18, no. 8, August 2015, pp. 3507-3522.
8. Eramo, V., Miucci, E., Ammar, M., "Study of Migration Policies in Energy-Aware Virtual Router Networks," *IEEE Communications Letters*, vol. 18, no. 11, November 2014.
9. Gilani, F., Al-Shaer, E., Demirci, M., Ammar, M., "Problem Localization and Quantification Using Formal Evidential Reasoning for Virtual Networks," *IEEE Transactions on Network and Systems Management*, Vol. 11, #3, September 2014.
10. Demirci, M., Ammar, M.H., "Design and Analysis of Techniques for Mapping Virtual Networks to Software-Defined Network Substrates," *Elsevier Computer Communications Journal*, Vol. 45, June 2014.
11. Shi, C., Luo, C., Traynor, P., Ammar, M., Zegura, E., "ARDEN: Anonymous netwoRking in Delay tolErant Networks," *Elsevier Ad-Hoc Networks Journal*, Vol. 10, pp918-930, 2012.

12. Tariq, M., Zeitoun, A., Valancius, V., Feamster, N., Ammar, M., "Answering What-If Deployment and Configuration Questions with WISE: Techniques and Deployment Experience," *IEEE/ACM Transactions on Networking*, Vol 21(1), February 2013.
13. Whitbeck, J., de Amorim, M., Conan, V., Ammar, M., Zegura, E., "From Encounters to Plausible Mobility," *Elsevier Journal on Pervasive and Mobile Computing*, 7(2): 206-222 (2011).
14. Polat, B., Sachdeva, P., Ammar, M., Zegura, E., "Message ferries as generalized dominating sets in intermittently connected mobile networks," *Elsevier Journal on Pervasive and Mobile Computing*, 7(2): 189-205 (2011).
15. Chen, Y., Borrell, V., Ammar, M., Zegura, E., "A Framework for Characterizing the Wireless and Mobile Network Continuum," *ACM Computer Communications Review*, Vol. 41, #1, January 2011.
16. Jun, H., Ammar, M., Corner, M., Zegura, E., "Hierarchical Power Management in Disruption Tolerant Networks Using Traffic Aware Optimization," *Computer Communications*, Volume 32, # 16, 2009.
17. Seetharaman, S., Ammar, M., "Inter-domain policy violations in multi-hop overlay routes: Analysis and mitigation," *Elsevier Computer Networks Journal* 53(1): 60-80 (2009)
18. Srinivasan Seetharaman, Volker Hilt, Markus Hofmann, Mostafa H. Ammar, "Resolving cross-layer conflict between overlay routing and traffic engineering," *IEEE/ACM Trans. Netw.* 17(6): 1964-1977 (2009)
19. He, Q., Dovrolis, C., Ammar, M., "On the Predictability of Large Transfer TCP Throughput," *Elsevier Computer Networks Journal*, Volume 51, Issue 14, 10 October 2007, Pages 3959-3977.
20. Jun, H., Zhao, W., Ammar, M., Zegura, E., Lee, C., "Trading Latency for Energy in Densely Deployed Wireless Ad Hoc Networks using Message Ferrying" *Journal of Ad-Hoc Networks (Elsevier)*, Volume 5, Issue 4, May 2007, Pages 444-461
21. He, Q., Dovrolis, C., Ammar, M., "A Methodology for the Optimal Configuration of TCP Traffic in Network Simulations under Link Load Constraints," *Special Issue of SIMULATION: Transactions of the Society for Modeling and Simulation Journal*, Vol. 82, No. 5, 279-293, 2006.
22. Gupta, M., Ammar, M., Ahamad, M., "Trade-offs between reliability and overhead in peer-to-peer reputation tracking," *Elsevier Computer Networks*, Volume 50, Issue 4, March 2006.
23. Zhu, Y., Dovrolis, C., Ammar, M., "Dynamic overlay routing based on available bandwidth estimation: A simulation study," *Elsevier Computer Networks*, Volume 50, Issue 6, April 2006.
24. Chen, Z., Bu, T., Ammar, M., Towsley, D., "Comments on "Modeling TCP Reno Performance: A Simple Model and Its Empirical Validation,"" *IEEE/ACM Transactions on Networking*, vol. 14, no. 2, April 2006.
25. Kim, T., Ammar, M., "A Comparison of Heterogeneous Video Multicast Schemes: Layered Encoding or Stream Replication?" *IEEE Transactions on Multimedia* Vol 7, 6, Dec. 2005, pp 1123- 1130.
26. Riley, G., Jaafar, T., Fujimoto, R., Ammar, M., "Using Ghosts for Global Topology Knowledge in Space-Parallel Distributed Network Simulations," *Simulation Journal*, Vol. 81, no. 4, April 2005.
27. Kim, T., Ammar, M., "Optimal Quality Adaptation for Scalable Encoded Video," *IEEE Journal on Selected Areas in Communication*, Special Issue on Intelligent Services and Applications in Next-Generation Networks, vol. 23, no. 2, February 2005.
28. Fan, J., Xu, J., Ammar, M., Moon, S., "Prefix-Preserving IP Address Anonymization: Measurement-based Security and a New Cryptography-based Scheme," *Elsevier Computer Networks*, 46(2): 253-272 (2004).
29. He, Q., Ammar, M., "Dynamic Host-Group/Multi-Destination Routing for Multicast Sessions," *Journal of Telecommunication Systems*, Vol. 28, pp. 409-433, 2005.

30. He, Q., Ammar, M., Riley, G., Fujimoto, R., "Exploiting the Predicatability of TCP's Steady-State Behavior to Speed Up Network Simulation," *Performance Evaluation Journal*, Vol 58,2-3, pp 163-187, 2004.
31. Riley, G., Ammar, M., Fujimoto, R., Park, A., Perumalla, K., Xu, D., "A Federated Approach to Distributed Network Simulation," *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, Vol. 14 (2), pp 116-148, April 2004.
32. Fei, Z., Ammar, M., Kamel, I., Mukherjee, S., "An Active Buffer Management Technique for Providing Interactive Functions in Broadcast Video-on-Demand Systems," *IEEE Transactions on Multimedia*, Vol 7(5), Oct. 2005, pp942 - 950.
33. Judge, P., Ammar, M., "Security Issues and Solutions in Multicast Content Distribution," *IEEE Network*, Vol. 17(1), January/February 2003, pp30-36.
34. Zongming Fei, Mangkun Yang, Mostafa Ammar, Ellen Zegura, "A framework for allocating clients to rate-constrained multicast servers," *Computer Communications*, vol. 26, 2003, p1255.
35. Fei, Z., Ammar, M. Zegura, E., "Multicast Server Selection: Problems, Complexity and Solutions," *IEEE Journal on Selected Areas in Communications*, Vol. 20, #7, pp1399-1413, September 2002.
36. Judge, P., Ammar, M., "WHIM: Watermarking Multicast Video with a Hierarchy of Intermediaries," *Elsevier Computer Networks*, Vol. 29, #6, pp699-712, 2002.
37. Hao, F., Zegura, E., Ammar, M., "QoS Routing for Anycast Communications: Motivation and an Architecture for DiffServ Networks," *IEEE Communications Magazine*, Vol. 40, #6, June 2002, pp48-56.
38. Zegura, E., Ammar, M., Fei, Z., Bhattacharjee, S. "Application-Layer Anycasting: A Server Selection Architecture and Use in a Replicated Web Service," *IEEE/ACM Transactions on Networking*, Vol. 8, No. 4, August 2000, pp 467-498.
39. Li, X., Ammar, M., Paul, S., "Video Multicast over the Internet," *IEEE Network Magazine*, Vol. 13. No. 2, March/April 1999, pp46-60.
40. Almeroth, K., Ammar, M. H., "An Alternative Paradigm for Scalable On-Demand Applications: Evaluating and Deploying the Interactive Multimedia Jukebox," *IEEE Transactions on Knowledge and Data Engineering*, Vol. 11, No. 4, July/August 1999, pp658-672.
41. Krupczak, R., Calvert, K., Ammar, M. H., "Protocol Programming in Java," *IEEE Communications Magazine*, Vol. 36, No. 10, pp93-99, October 1998.
42. Clark, R. J., Ammar, M. H., "Providing Scalable Web Service Using Multicast Communication," *Computer Networks and ISDN Systems*, Vol. 29, pp841-858, 1997.
43. Clark, R. J., Ammar, M. H., Calvert, K., "Protocol Discovery in Multiprotocol Networks," *Mobile Networks and Applications*, Vol. 2, pp271-284, 1997.
44. Krupczak, R., Calvert, K., Ammar, M. H., "Increasing the Portability and Re-Usability of Protocol Code," *ACM/IEEE Transactions on Networking*, Vol. 5 (4), pp 445-459, August 1997.
45. Almeroth, K. C., Ammar, M. H., "Multicast Group Behavior in the Internet's Multicast Backbone," *IEEE Communications Magazine*, 35(6), June 1997, pp124-129.
46. Rouskas, G., Ammar, M. H., "Multidestination Communication over Tunable-Receiver Single-Hop WDM Networks", *IEEE Journal on Selected Areas in Communications*, 15(3), April 1997, pp501-511.
47. Rouskas, G., Ammar, M. H., "Minimizing Delay and Packet Loss in Single-Hop Lightwave WDM Networks Using TDM Schedules," *Journal of High Speed Networks*, 5(4), 1996, pp304-328.

48. Almeroth, K., Ammar, M. H., "On the Use of Multicast Delivery to Provide a Scalable and Interactive Video-on-Demand Service," *IEEE Journal on Selected Areas in Communications*, Special issue on Integrated Video-Based Services for the Home, 14(6), August 1996, pp1110-1122
49. Cheung, S. Y., Ammar, M. H., "Using Destination Set Grouping to Improve the Performance of Window-Controlled Multi-Point Connections," *Computer Communications*, 19, 1996, pp723-736.
50. Bernabeu, J., Ammar, M. H., Ahamad, M., "Optimizing a Generalized Polling Protocol for Resource Finding over a Multiple Access Channel," *Computer Networks and ISDN Systems*, 27, 1995, pp412-420.
51. Rouskas, G., Ammar, M. H., "Reconfigurability in Multihop WDM Networks," *Journal of High Speed Networks*, 4(3), 1995, pp221-238.
52. Rouskas, G. , Ammar, M. H., "Analysis and Optimization of Transmission Schedules for Single-Hop WDM Networks," *IEEE/ACM Transactions on Networking*, 3(2), April 1995, pp211-221.
53. Ammar, M. H., Rouskas, G., "On the Performance of Protocols for Collecting Responses over a Multiple Access Channel," *IEEE Transactions on Communications*, 43(2), February 1995, pp412-420.
54. Kamalakar, K., Navathe, S. B., Ammar, M. H., "Optimal Redesign Policies to Support Processing of Applications on a Distributed Relational Database," *Information Systems*, 19(4), pp33-54, 1994.
55. Cheung, S. Y., Ammar, M. H., Ahamad, M., "The Grid Protocol: A High Performance Scheme for Maintaining Replicated Data," *IEEE Transactions on Knowledge and Data Engineering*, 4(6), December 1992, pp 582-592.
56. Ahamad, M., Ammar, M. H., Cheung, S. Y., "Multi-Dimensional Voting," *ACM Transactions on Computer Systems*, 9(4), November 1991, pp 399-431.
57. Bernabeu-Auban, J., Ahamad, M., Ammar, M. H., "Resource Finding in Store-and-Forward Networks," *Acta Informatica*, 28(7) , October 1991, pp 657-680.
58. Ammar, M. H., Gershwin, S. B., "Equivalence Relations in Queueing Models of Fork/Join Networks with Blocking," *Performance Evaluation Journal*, 10(12), December 1989, pp 233-245.
59. Cheung, S.Y., Ahamad, M., Ammar, M.H., "Optimizing Vote and Quorum Assignments for Reading and Writing Replicated Data," *IEEE Transactions on Knowledge and Data Engineering*, 1(3), September 1989, pp 387-397.
60. Ahamad, M., Ammar, M. H., "Performance Characterization of Quorum-Consensus Algorithms for Replicated Data," *IEEE Transactions on Software Engineering*, 15(4), April 1989, pp492-496.
61. Ammar, M. H., "Response Time in a Teletext System: An Individual User's Perspective," *IEEE Transactions on Communications*, 35(11), November 1987, pp1159-1170.
62. Ammar, M. H., "Performance of a Two-Stage Manufacturing System with Control and Communication Overhead," *IEEE Transactions on Systems, Man, and Cybernetics*, 17(4), July/August 1987, pp661-665.
63. Ammar, M. H., "Teletext-Like Information Delivery Using Broadcast Polling," *Computer Networks and ISDN Systems*, 12(2), March 1987, pp107-115.
64. Ammar, M. H., Wong, J. W., "On the Optimality of Cyclic Transmission in Teletext Systems," *IEEE Transactions on Communications*, 35(1), January 1987, pp68-73.
65. Wong, J. W., Ammar, M. H., "Response Time Performance of Videotex Systems," *IEEE Journal on Selected Areas in Communications*, 4(7), October 1986, pp1174-1180.
66. Ammar, M. H., Wong, J. W., "The Design of Teletext Broadcast Cycles," *Performance Evaluation Journal*, 5(4), November 1985, pp235-242.

67. Wong, J. W., Ammar, M. H., "Analysis of Broadcast Delivery in a Videotex System," *IEEE Transactions on Computers*, 34(9), September 1985, pp863-866.

### C. Published Books and Parts of Books

1. Habak, K., Shi, C., Zegura, E., Harras, K., Ammar, M. "Elastic Mobile Device Clouds: Leveraging Mobile Devices to Provide Cloud Computing Services at the Edge." Chapter 7 in *Fog for 5G and IoT* (Wiley 2017).
2. Ammar, M. H., Almeroth, K. C., Clark, R. J., Fei, Z., "Multicast Delivery of Web Pages," *Electronic Commerce Technology Trends: Challenges and Opportunities*, Kou and Yesha, eds, IBM Press, 2000.
3. Saadawi, T., Ammar, M. H., El-Hakeem, A., *Fundamentals of Telecommunication Networks*, John Wiley, Published September 1994.
4. Wong, J. W., Ammar, M. H., "Performance Analysis of Shared Response Systems," *Current Advances in Distributed Computing and Communications*, Y. Yemini (ed.), Computer Science Press, 1987, pp3-16.
5. Ahamad, M., Ammar, M. H., Bernabeu, J. A., Khalidi, M. Y., "Using Multicast Communication to Locate Resources in a LAN-Based Distributed System," in *Multicast Communication in Distributed Systems*, M. Ahamad (ed.), IEEE Computer Society Press, 1990, pp81-90.
6. Ahamad, M., Ammar, M. H., Cheung, S. Y., "Replicated Data Management in Distributed Systems," in *Readings in Distributed Computing*, IEEE Computer Society Press, T. Casvant and M. Singhal (eds), 1994.

### D. Conference Proceedings (refereed)

1. Habak, K., Ammar, M., Zegura, E., Harras, K., "Workload Management for Dynamic Mobile Device Clusters in Edge Femtoclouds," The Second ACM/IEEE Symposium on Edge Computing San Jose, CA, October 2017.
2. Mangla, T., Halepovic, E., Ammar, M., Zegura, E., "MIMIC: Using Passive Network Measurements to Estimate HTTP-based Adaptive Video QoE Metrics," The IEEE/IFIP Workshop on Mobile Network Measurement, Dublin, Ireland, June 2017.
3. Ammar, M., Zegura, E., Zhao, Y., "A Vision for Zero-Hop Networking (ZeN)," Proceedings of the 2017 IEEE International Conference on Distributed Computing Systems (ICDCS) – Vision Track, Atlanta, GA, June 2017
4. Abuteir, R.M., Fladenmuller, A., Fourmaux, O., Ammar, M., "Variable-Threshold Buffer Based Adaptation for DASH Mobile Video Streaming," Proceedings of IEEE Wireless Communications and Mobile Computing (IWCMC) 2017 Multimedia Symposium, Valencia, Spain, June 2017.
5. Zhao, Y., Lo, S., Zegura, E., Riga, N., Ammar, M., "Virtual Network Migration on the GENI Wide-Area SDN-Enabled Infrastructure," Proceedings of CNERT '17, the 2017 IEEE INFOCOM International Workshop on Computer and Networking Experimental Research Using Testbeds, May 2017, Atlanta, GA. Longer version can be found at arXiv preprint arXiv:1701.01702
6. Saeed, A., Harras, K.A., Zegura, E., Ammar, M., "Local and Low-Cost White Space Detection," Proceedings of the IEEE International Conference on Distributed Computing Systems, June 2017, Atlanta, GA.
7. Baron, B., Spathis, P., de Amorim, M., Ammar, M., "Cloud Storage for Mobile Users Using Pre-Positioned Storage Facilities" Proceedings of ACM SMARTOBJECTS 2016 2nd Workshop on Experiences with Design and Implementation of Smart Objects October 3, 2016, New York, USA

8. Theera-Ampornpant, N., Mangla, T., Bagchi, S., Panta, R., Joshi, K., Ammar, M., Zegura, E., "TANGO: Toward a More Reliable Mobile Streaming through Cooperation between Cellular Network and Mobile Devices," The 2016 IEEE 35th Symposium on Reliable Distributed Systems (SRDS 2016), Hungary, September 2016.
9. Chen, J., Ammar, M., Fayed, M., Fonseca, R., "Client-Driven Network-level QoE-F airness for Encrypted DASH-S," Proceedings of ACM SIGCOMM Workshop on QoE-based Analysis and Management of Data Communication Networks (Internet-QoE 2016), August 2016.
10. Mangla, T., Theera-Ampornpant, N., Ammar, M., Zegura, E., Bagchi, S., "Video Through a Crystal Ball: Effect of Bandwidth Prediction Quality on Adaptive Streaming in Mobile Environments", ACM Workshop on Mobile Video, Klagenfurt, Austria, May 2016.
11. Saeed, A., Ammar, M., Harras, K., Zegura, E., "Vision: The Case for Symbiosis in the Internet of Things," MCS '15 Proceedings of the 6th International Workshop on Mobile Cloud Computing and Services, September 2015, Paris, France.
12. Monfared, A., Ammar, M., Zegura, E., Doria, D., Bruno, D., "Computational Ferrying: Challenges in Deploying a Mobile High Performance Computer," IEEE Autonomic and Opportunistic Communications (AOC), June 2015, Boston, MA.
13. Habak, K., Ammar, M., Harras, K., Zegura, E., "FemtoClouds: Leveraging Mobile Devices to Provide Cloud Service at the Edge," Proceedings of the 8th IEEE International Conference on Cloud Computing, June 2015, New York.
14. Mtibaa, A., Harras, K., Habak, K., Ammar, M., Zegura, E., "Towards Mobile Opportunistic Computing," (Short Paper) Proceedings of the 8th IEEE International Conference on Cloud Computing, June 2015, New York.
15. Mansy, A., Fayed, M., Ammar, M. "Network-layer Fairness for Adaptive Video Streams," Proceedings of the IFIP Networking Conference, Toulouse, France, May 2015.
16. Erramo, V., Miucii, E., Ammar, M. "Evaluation of Reconfiguration Cost and Energy Aware Virtual Network Embedding Policies," Proceedings of the Workshop on Next Generation Green ICT, IEEE International Conference on Communications (ICC), London, UK, June 2015.
17. Gillani, F., Al-Shaer, E., Lo, S., Duan, Q., Ammar, M., Zegura, E., "Agile Virtualized Infrastructure to Proactively Defend Against Cyber Attacks," Proceedings of IEEE INFOCOM 2015, April 2015, Hong Kong.
18. Hoseini, S., Fotouhi, A., Hassan, M., Chou, C., Ammar, M., "A message ferrying approach to low-cost backhaul in cellular networks," Proceedings of ACM Challenged Networks Workshop (CHANTS), Maui, Hawaii, August 2014.
19. Shi, C., Habak, K., Pandurangan, P., Ammar, M., Naik, M., Zegura, E., "COSMOS: computation offloading as a service for mobile devices," MobiHoc '14, Proceedings of the 15th ACM international symposium on Mobile ad hoc networking and computing, August 2014, Philadelphia, PA.
20. Shi, C., Joshi, K., Panta, R., Ammar, M., Zegura, E., "CoAST: collaborative application-aware scheduling of last-mile cellular traffic," MobiSys '14, Proceedings of the 12th annual international conference on Mobile systems, applications, and services, June 2014, Bretton Woods, NH.
21. Lo, S., Ammar, M., Zegura, E., Fayed, M., "Virtual Network Migration on Real Infrastructure: A Planet-Lab Case Study," Proceedings of IFIP Networking Conference, Trondheim, Norway, June 2014.
22. Mansy, A., Ammar, M., Chandrashekar, J., Sheth, A., "Characterizing Client Behavior of Commercial Mobile Video Streaming Services," Proceedings of the 6th ACM Workshop on Mobile Video (MoVid 14), Singapore, March 2014.

23. Jawhar, I, Ammar, M., Zhang, S., Wu, J., Mohamed, N., "Ferry-Based Linear Wireless Sensor Networks," Proceedings of the IEEE GLOBECOM 2013 Ad Hoc and Sensor Networking Symposium, Atlanta, GA, December 2013.
24. Demirci, M. Gilani, F, Ammar, M., Al-Shaer, E., "Overlay network Placement for Diagnosability," Proceedings of the IEEE GLOBECOM 2013 Next Generation Network Symposium, Atlanta, GA, December 2013.
25. Monfared, A., Ammar. M., Zegura, E., "Plausible Mobility Inference from Wireless Contacts Using Optimization," Proceedings of the ACM CHANTS Workshop, Miami, FL, September 2013.
26. Mtibaa, A., Fahim, A. Harras, K., Ammar, M., "Towards Resource Sharing in Mobile Device Clouds: Power Balancing Across Mobile Devices," Proceedings of ACM SIGCOMM Mobile Cloud Computing Workshop, Hong Kong, August 2013.
27. Lo, S., Ammar, M., Zegura, E., "Design and Analysis of Schedules for Virtual Network Migration," Proceedings of IFIP Networking Conference, Brooklyn, NY, May 2013.
28. Gillani, S. F., Al-Shaer, E., Demirci, M., Ammar, M., "Fine-Grain Diagnosis of Overlay Performance Anomalies Using End-Point Network Experiences", International Conference on Network and Service Management (CNSM 2012), Las Vegas, NV, October 2012.
29. Shi, C. Ammar, M., Zegura, E., Naik, M., "Computing in Cirrus Clouds: The Challenge of Intermittent Connectivity," Proceedings of the ACM SIGCOMM Workshop on MOBILE Cloud Computing, Helsinki, Finland, August 2012.
30. Shi, C., Ammar, M., Zegura, E., "Serendipity: Enabling Remote Computing among Intermittently Connected Mobile Devices," ACM Mobihoc Conference, Hilton Head, South Carolina, June 2012. **Best Paper Award.**
31. Mansy, A., Ammar, M. H., "Analysis of Adaptive Streaming for Hybrid CDN/P2P Live Video Systems," Proceedings of IEEE International Conference on Network Protocols (ICNP), Vancouver, BC, October 2011.
32. Chen, Y., Berg, J., Ammar, M., Zegura, E., "Evaluation of Data Communication Opportunities from Oil Field Operations at Remote Areas," Proceedings of the ACM Internet Measurement Conference (IMC), 2011.
33. Mansy, A., Ammar, M., Zegura, E., "Deficit Round-Robin Based Message Ferry Routing," IEEE GLOBECOM 2011, Houston TX, Dec. 2011.
34. Shi, C., Ammar, M., Zegura, E., "iDTT: Delay Tolerant Data Transfer for P2P File Sharing Systems," IEEE GLOBECOM 2011, Houston TX, Dec. 2011.
35. Mtibaa, A., May, M., Ammar, M., "On the Relevance of Social Information to Opportunistic Forwarding," Proceedings of IEEE MASCOTS 2010, Miami Florida, August 2010.
36. Demirci, M., Ammar, M., "Fair Allocation of Substrate Resources among Multiple Overlay Networks," IEEE MASCOTS 2010, Miami, Florida, August 2010.
37. Mtibaa, A., May, M., Ammar, M., Diot, C., "PeopleRank: Combining Social and Contact Information for Opportunistic Forwarding," Proceedings of IEEE INFOCOM 2010 MiniConference, March, 2010, Sand Diego, CA.
38. Polat, B., Sacdeva, P., Ammar, M., Zegura, E., "Message Ferries as generalized dominating sets in intermittently-connected networks" 2nd ACM International Workshop on Mobile Opportunistic Networking, February 2010, Pisa, Italy.

39. Tariq, M., Motiwala, M., Feamster, N., Ammar, M., "Detecting Network Neutrality Violations with Causal Inference," Proceedings of ACM CoNext, Rome, Italy, December 2009.
40. Ammar, M., Chakrabarty, D., Sarma, A., Kalyanasundaram, S., Lipton, R., "Algorithms for Message Ferrying on Mobile ad hoc Networks," Proceedings of Foundations of Software Technology and Theoretical Computer Science, December 2009, Kanpur, India.
41. Tariq, M., Mansy, A., Feamster, N., Ammar, M., "Characterizing VLAN-induced sharing in a campus network," Proceedings of ACM Internet Measurement Conference, November 2009, Chicago, Illinois.
42. Demirci, M., Lo, S., Seetharaman, S., Ammar, M., "Multi-layer monitoring of overlay networks," Proceedings of Passive and Active Measurements Workshop (PAM), April 2009.
43. Antonellis, D., Mansy, A., Psounis, K., Ammar, M., "Towards Distributed Network Classification for Mobile Ad hoc Networks," (Invited Paper) Proceedings of the Wireless Internet Conference (WICON), November 2008.
44. Kanuparth, P., Dovrolis, C., Ammar, M., "Spectral Probing, Crosstalk and Frequency Multiplexing in Internet Paths," Proceedings of the ACM Internet Measurement Conference, October 2008.
45. Tariq, M., Zeitoun, A., Valancius, V., Feamster, N., Ammar, M., "Answering 'What-if' Deployment and Configuration Questions with WISE," Proceedings of ACM SIGCOMM'08, August 2008.
46. Shin, J., Kumar, R., Mohapatra, D., Ramachandran, U., Ammar, M., "ASAP: A Camera Sensor Network for Situation Awareness," 11th International Conference On Principles Of Distributed Systems (OPODIS'07), Guadeloupe, French West Indies, December 17-20th, 2007.
47. Borrel, V., Ammar, M., Zegura, E., "Understanding the Wireless and Mobile Network Space: A Routing Centered Classification," Proceedings of ACM CHANTS 07 Workshop, Montreal, Canada, September 2007.
48. Seetharaman, S., Ammar, M., "Exit Policy Violations in Multi-hop Overlay Routes: Analysis and Mitigation," IEEE GLOBECOMM, Washington, D.C., November, 2007.
49. Mansy, A., Ammar, M., Zegura, E., "Reliable Roadside-to-Roadside Data Transfer Using Vehicular Traffic," Proceedings of The IEEE International Workshop on Mobile Vehicular Networks (MoVeNet) (IEEE MASS Workshop), Pisa, Italy, October 2007.
50. Chen, Y., Zhao, W., Ammar, M., Zegura, E., "Hybrid Routing in Clustered DTNs with Message Ferrying," Proceedings of First International Workshop on Mobile Opportunistic Networking (ACM MobiSys Workshop) June, 2007, Puerto Rico, USA.
51. Vellambi, B., Subramanian, R., Fekri, F., Ammar, M., "Reliable and Efficient Message Delivery in Delay Tolerant Networks Using Rateless Codes," Proceedings of First International Workshop on Mobile Opportunistic Networking (ACM MobiSys Workshop) June, 2007, Puerto Rico, USA.
52. Shin, J., Ramachandran, U., Ammar, M., "On Improving the Reliability of Packet Delivery in Dense Wireless Sensor Networks. IEEE 16th International Conference on Computer Communications and Networks (ICCCN), 2007.
53. Zhu, Y., Dovrolis, C., Ammar, M., "Combining multihoming with overlay routing (or, how to be a better ISP without owning a network)," INFOCOM 2007, May 2007, Anchorage, Alaska.
54. Seetharaman, S., Hilt, V., Hoffman, M., Ammar, M., "Preemptive Strategies to Improve Routing Performance of Native and Overlay Layers," INFOCOM 2007, May 2007, Anchorage, Alaska.
55. Jun, Y., Ammar, M., Corner, M., Zegura, E., "Hierarchical Power Management in Disruption Tolerant Networks with Traffic-Aware Optimization," Proceedings of ACM CHANTS 06 workshop, Pisa, Italy, September 2006.

56. Zhao, W., Chen, Y., Ammar, M., Corner, M., Levine, B., Zegura, E., "Capacity Enhancement using Throw-boxes in DTNs" Proceedings of IEEE MASS, Vancouver, BC, October 2006.
57. Tariq, M., Ammar, M., Zegura, E., "Message Ferry Route Design for Sparse Ad hoc Networks with Mobile Nodes," Proceedings of ACM Mobihoc, 2006, Florence, Italy, May 2006.
58. Chen, Y., Yang, J., Zhao, W., Ammar, M., Zegura, E., "Multicasting in Sparse MANETs Using Message Ferrying," Proceedings of IEEE Wireless Communications and Networking Conference (WCNC), Las Vegas, NV, April 2006.
59. Petit, B., Ammar, M., Fujimoto, R., "Protocols for Roadside-to-Roadside Data Relaying over Vehicular Networks" Proceedings of IEEE Wireless Communications and Networking Conference (WCNC), Las Vegas, NV, April 2006.
60. Seetharaman, S., Ammar, M., "On the Interaction between Dynamic Routing in the Native and Overlay Layers" INFOCOM 2006, Barcelona, Spain, April 2006.
61. Zhu, Y., Ammar, M., "Algorithms for Assigning Substrate Network Resources to Virtual Network Components" INFOCOM 2006, Barcelona, Spain, April 2006.
62. Fan, J., Ammar, M., "Dynamic Topology Configuration in Service Overlay Networks: A Study of Reconfiguration Policies" INFOCOM 2006, Barcelona, Spain, April 2006.
63. Kim, T., Ammar, M., "Receiver Buffer Requirements for Video Streaming over TCP," Proceedings of Visual Communications and Image Processing Conference, San Jose, CA, January 2006.
64. He, Q., Dovrolis, C., Ammar, M., "On the Predictability of Large Transfer TCP Throughput," Proceedings of ACM SIGCOMM 2005, Philadelphia, PA, August 2005.
65. Jun, H., Ammar, M., Zegura, E., "Power Management in Delay Tolerant Networks: A Framework and Knowledge-Based Mechanisms," Proceedings of the 2nd IEEE Conference on Sensor and Ad Hoc Communication and Networks, Santa Clara, CA, September 2005.
66. Zhao, W., Ammar, M., Zegura, E., "Multicast Routing in Delay Tolerant Networks: Semantic Models and Routing Algorithms," Proceedings of the SIGCOMM DTN Workshop, Philadelphia, PA, August 2005.
67. Seetharaman, S., Ammar, M., "Overlay Friendly Overlay Networks: A Contradiction in Terms?" Proceedings of ACM HOTNETS IV, November 2005, College Park, Maryland.
68. Karbhari, P., Ammar, M., Zegura, E., "Optimizing End-to-End Throughput for Data Transfers on an Overlay-TCP Path," Proceedings of NETWORKING 2005, Waterloo, Ontario, pp943-955, May 2005.
69. Tariq, M., Dhamdhare, A., Dovrolis, C., Ammar, M., "Poisson versus periodic probing of network path performance (or, does PASTA matter?)," Proceedings of the 2005 Internet Measurement Conference, October 2005, New Orleans, LA.
70. He, Q., Dovrolis, C., Ammar, M., "A Methodology for the Optimal Configuration of TCP Traffic in Network Simulation under Link Load Constraints," Proceedings of the 38th Annual Simulation Symposium, San Diego, April 2005.
71. Jun, H., Zhao, W., Ammar, M., Zegura, E., Lee, C., "Trading Latency for Energy in Wireless Ad Hoc Networks using Message Ferrying," IEEE PerCom International Workshop on Pervasive Wireless Networking, March 2005
72. Guo, M., Ammar, M., Zegura, E., "V3: A Vehicle-to-Vehicle Live Video Streaming Architecture," IEEE International Conference on Pervasive Computing and Communications (PerCom), 2005.
73. Yang, J., Chen, Y., Ammar, M., Lee, C., "Ferry Replacement Protocols in Sparse MANET Message Ferrying Systems," IEEE Wireless Communications and Networking (WCNC), April 2005.

74. Zhao, W., Ammar, M., Zegura, E., "Controlling the Mobility of Multiple Data Transport Ferries in a Delay Tolerant Network," IEEE INFOCOM 2005. April 2005.
75. Begen, A., Altunbasak, Y., Ergun, Y., Ammar, M., "Multi-path selection for multiple description video streaming over overlay networks," EURASIP Signal Processing: Image Communication, vol. 20/1, pp. 39-60, Jan. 2005.
76. Jianjun Zhang, Ling Liu, Calton Pu, Mostafa Ammar, "Reliable peer-to-peer end system multicasting through replication", IEEE Fourth International Conference on Peer-to-Peer Computing, 2004. pp235-242.
77. Zhao, W., Ammar, M., Zegura, E., "The Energy-Limited Capacity of Wireless Networks," The First IEEE International Conference on Sensor and Ad hoc Communications and Networks, Sanar Clara, CA, October 2004.
78. Xu, D., Ammar, M., "BencHMAP: Benchmark-Based, Hardware and Model-Aware Partitioning for Parallel and Distributed Network Simulation," Proceedings of IEEE/ACM International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS), Volendam, The Netherlands, October 2004.
79. Guo, M., Ammar, M., Zegura, E., "Cooperative Patching: A client based P2P Architecture for supporting continuous live video streaming," Proceedings of the IEEE International Conferenc on Computers, Communication and Networks (IC3N), Chicago, IL, October 2004.
80. Zhao, W., Ammar, M., Zegura, E., "A Message Ferrying Approach for Data Delivery in Sparse Mobile Ad Hoc Networks," Proceedings of ACM Mobihoc 2004, Tokyo Japan, May 2004.
81. Riley, G., Jaafar, T., Fujimoto, R., Ammar, M., "Space-Parallel Network Simulations using Ghosts," 18th Workshop on Parallel and Distributed Simulation May 16-19, 2004, Kufstein, Austria.
82. Zhu, Y., Jukan, A., Ammar, M., Alanqar, W., "End-to-End Service Provisioning inMulti-granularity Multi-domain Optical Networks," 2004 IEEE International COnference on Communication (Optical Networking Symposium), Paris, June 2004.
83. Karbhari, P., Ammar, M., Dhamdhere, A., Raj, H., Riley, G., Zegura, E., "Bootstrapping in Gnutella: A Measurement Study," Proceedings of the Passive and Active Measurements Workshop, Antibes Juan-les-Pins, France, April 2004
84. Guo, M., Ammar, M., "Scalable Live Video Streaming to cooperative clients using time shifting and video patching," Proceedings of INFOCOM 2004, Hong Kong, Marh 2004.
85. He, Q., Ammar, M., "Congestion Control and Message Loss in Gnutella Networks," Proceedings of SPIE Conference on Multimedia Computing and Networking(MMCN), Santa Clara, CA, January 2004.
86. Zou, L., Ammar, M., "A File-Centric Model for Peer-to-Peer File-Sharing Systems," Proceedings of ICNP 2003, Atlanta, GA, Nov. 2003.
87. Fujimoto, R., Perumalla, K., Park, A., Wu, H., Ammar, M., Riley, G., "Large Scale Simulation: How Big? How Fast?," Proceedings of the 11th IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunicatin Systems (MASCOTS), October 2003.
88. He, Q., Ammar, M., Riley, G., Raj, H., Fujimoto, R., "Mapping Peer Behavior to Packet-Level Details: A Framework for Packet-Level Simulation of Peer-to-Peer Systems," Proceedings of the 11th IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunicatin Systems (MASCOTS), October 2003.
89. Gupta, M., Ammar, M., "Service Differentiation in Peer-to-Peer Networks Utilizing Reputations," Proceedings of the Networked Group Communications (NGC) workshop, October 2003.

90. He, Q., Ammar, M., "Dynamic Host-Group/Multidestination Routing for Multicast Sessions," Proceedings of the IEEE International Conference on Computer Communications and Networks, November 2003.
91. Judge, P., Ammar, M., "CITADEL: A Content protection Architecture for Decentralized Peer-to-Peer Systems," Proceedings of IEEE GLOBECOM 2003, December 2003.
92. Gupta, M., Judge, P., Ammar, M., "A Reputation System for Peer-to-Peer Systems," Proceedings of ACM NOSSDAV 2003, June 2003, Monterey, CA.
93. Gkantsidis, C., Ammar, M., Zegura, M., "On the Effect of Large-Scale Deployment of Parallel Downloading," Third IEEE International Workshop on Internet Applications (WIAPP 03), San Jose, CA, June 2003.
94. Wu, H., Fujimoto, R., Ammar, M., "Time-Parallel Trace-Driven Simulation of CSMA/CD," Proceedings of the 2003 Parallel and Distributed Simulation Conference, San Diego, June 2003.
95. Xu, D., Riley, G., Ammar, M., Fujimoto, R., "Enabling Large-Scale Multicast Simulations by Reducing Memory Requirements," Proceedings of the 2003 Parallel and Distributed Simulation Conference, San Diego, June 2003.
96. Zhao, W., Ammar, M., "Proactive Routing in highly Partitioned Ad-Hoc Networks," Proceedings of the IEEE Workshop on Future Trends of Distributed Computing Systems, Puerto Rico, June 2003.
97. Jun, H., Sanders, M., Ammar, M., Zegura, E., "Binding Clients to Replicated Servers: Initial and Continuous Binding," Proceedings of the IEEE Workshop on Future Trends of Distributed Computing Systems, Puerto Rico, June 2003.
98. Zhu, Y., Jukan, A., Ammar, M., "Multi-Segment Wavelength Routing in Large-Scale Optical Networks," IEEE International Conference on Communications (ICC 2003), Anchorage, Alaska, May 2003.
99. Gupta, M., Ammar, M., "A Novel Multicast Scheduling Scheme for Multimedia Server with Variable Access Patterns," IEEE International Conference on Communications (ICC 2003), Anchorage, Alaska, May 2003.
100. Clay, L., Ammar, M., Zegura, E., Clark, R., "Posting Protocol for Improved Keyword Searches in Peer-to-Peer Systems," Proceedings of Multimedia Computing and Networking (MMCN) 2003, January 2003.
101. Karbhari, P., Zegura, E., Ammar, M., "Multipoint-to-point Session Fairness in the Internet," Proceedings of INFOCOM 2003, March 2003
102. Kim, T., Ammar, M., "Optimal Quality Adaptation for MPEG-4 Fine-Grain Scalable Video," Proceedings of INFOCOM 2003, March 2003
103. Xu, J., Fan, J., Ammar, M., Moon, S., "Prefix-Preserving IP Address Anonymization: Measurement-based Security Evaluation and a New Cryptography-based Scheme," Proceedings of the IEEE International Conference on Network Protocols, 2002.
104. Judge, P., Ammar, M., "The Role of Watermarking in Securing Peer-to-Peer Systems," Workshop on Multimedia and Security at ACM Multimedia 2002, June 2002.
105. Fan, J., Judge, P., Ammar, M., "HySor: Group Key Management with Collusion-Scalability Tradeoffs Using a Hybrid Structuring of Receivers", IEEE International Conference on Computers, Communications and Networks (ICCCN) 2002.
106. Zou, L., Zegura, E., Ammar, M., "The Effect of Peer Selection and Buffering Strategies on the Performance of Peer-to-Peer File Sharing Systems," Proceedings of MASCOTS 2002, October 2002.
107. He, Q., Ammar, M., Riley, G., Fujimoto, R., "Exploiting the Predictability of TCP's Steady-State Behavior to Speed Up Network Simulation," Proceedings of MASCOTS 2002, October 2002.

108. Gupta, M., Ammar, M., "Providing Multicast Communication in a Differentiated Service Network Using Limited Branching Techniques," Proceedings of the Third International Conference on Internet Computing, Las Vegas, Nevada, June 2002.
109. Clay, L., Ammar, M., and Zegura, E., "Protocols for Selection Among Replicated Multicast Servers", Proceedings of the Third International Conference on Internet Computing, Las Vegas, Nevada, June 2002, p. 132-139.
110. Guo, M., Zegura, E., Ammar, M., "A Probe-Based Server Selection Protocol for Differentiated Service Networks," Proceedings of the IEEE International Communications Conference, 2002.
111. Judge, P., Ammar, M., "GOTHIC: A Group Access Control Architecture for Secure Multicast and Anycast," Proceedings of INFOCOM 2002, June 2002.
112. Guo, M., Ammar, M., Zegura, E., "Selecting among Replicated Batching Video-on-Demand Servers," Proceedings of NOSSDAV 2002, May 2002.
113. Ferenci, S., Fujimoto, R., Ammar, M., Perumulla, K., Riley, G., "Updateable Network Simulations," Proceedings of the 2002 Parallel and Distributed Simulation Conference, May 2002, Arlington, VA. (**Winner of Best Paper Award**)
114. Riley, G., Ammar, M., "Simulating Large Networks: How Big is Big Enough?" Proceedings of First International Conference on Grand Challenges for Modeling and Simulation, January 2002.
115. Xu, J., Fan, J., Ammar, M., Moon, S., "On the Design and Performance and Prefix-Preserving IP Traffic Trace Anonymization," Proceedings of the 1st ACM International Measurement Workshop, November 2001
116. Fei, Z. , Yang, M., Ammar, M, Zegura, E., "Allocating Clients to Constrained Multicast Servers: An Optimal Solution," Proceedings of the IEEE International Conference, on Computer Communication Networks, Nov. 2001.
117. Zou, L., Ammar, M. , Diot, C., "An Evaluation of Grouping Techniques for State Dissemination in Networked Multi-User Games," Proceedings of the Ninth International Symposium on Modelling, Analysis, and Simulation of Computer and Telecommunication Systems, (MASCOTS'01), August 2001.
118. Xu, D., Riley, G. F., Ammar, M. H., Fujimoto, R. M., "Split Protocol Stack Network Simulations using the Dynamic Simulation Backplane" Proceedings of the Ninth International Symposium on Modelling, Analysis, and Simulation of Computer and Telecommunication Systems, (MASCOTS'01), August 2001.
119. Kim, T., Ammar, M., "A Comparison of Layering and Stream Replication Video Multicast Schemes," Proceedings of NOSSDAV 2001, June 2001.
120. Riley, G. F., Ammar, M. H., Zegura, E. W. "Efficient Routing With Nix-Vectors" Proceedings of High Speed Switching and Routing 2001 (HPSR'01).
121. Hao, F., Zegura, E., Ammar, M., Supporting Server Selection in Differentiated Service Networks," Proceedings of INFOCOM 2001, Anchorage, Alaska, April 2001.
122. Riley, G. F., Ammar, M. H., Fujimoto, R. M., Perumalla, K., Xu, D. "Distributed Network Simulations using the Dynamic Simulation Backplane", Proceedings of the IEEE International Conference on Distributed Computing Systems, April 2001, Phoenix, Arizona.
123. Paul Judge, Mostafa Ammar, "WHIM: Watermarking Multicast Video with a Hierarchy of Intermediaries," Proceedings of NOSSDAV 2000, Chapel Hill, NC, June 2000.
124. Riley, G. F., Ammar, M. H., Fujimoto, R. M. "Stateless Routing in Network Simulations" Proceedings of MASCOTS 2000 San Francisco CA, August 2000.

125. Riley, G. F., Fujimoto, R. M., Ammar, M. H. "Network Aware Time Management and Event Distribution" *Proceedings 14th Workshop on Parallel and Distributed Simulation (PADS)*, Bologna, Italy, May 2000.
126. Tianji Jiang, Mostafa H. Ammar and Ellen W. Zegura, "On the Use of Destination Set Grouping to Improve Inter-receiver Fairness for Multicast ABR Sessions", *Proceedings of IEEE INFOCOM'2000*, Tel-Aviv, Israel, March, 2000.
127. Fei, Z., Ammar, M., Kamel, I., Mukherjee, S., "Providing Interactive Functions through Active Client buffer Management in Partitioned Video Broadcast," *Proceedings of the 1999 Workshop on Networked Group Communication*, Pisa, Italy, November 1999, Springer Verlag, lecture Notes in Computer Science. 1736, pp152-169.
128. Fei, Z., Ammar, M., Zegura, E., "Optimal Allocation of Clients to Replicated Multicast Servers" *Proceedings of the 1999 IEEE International Conference on Network Protocols*, November 1999, pp 69-76.
129. Riley, G. F., Fujimoto, R. M., Ammar, M. H., "A Generic Framework for Parallelization of Network Simulations," *Proceedings of the Seventh International Symposium on Modelling, Analysis and Simulation of Computer and Telecommunications Systems*, October 24-28, 1999, University of Maryland, College Park, MD, pp. 128-135
130. Jiang, T., Zegura, E., Ammar, M., "Inter-Receiver Fair Multicast Communication over the Internet" *Proceedings of Symposium on Network and Operating Systems Support for Digital Audio and Video (NOSS-DAV) 99*, June 1999, pp 103-114.
131. Fei, Z. Kamel, I., Mukherjee, S., Ammar, M., "Providing interactive functions for staggered multicast near video-on-demand systems (short paper)", *Proceedings of the IEEE International Conference on Multimedia Computing and Systems (ICMCS'99)*, Florence, Italy, June 1999.
132. Clay, L., Ammar, M., "Design and Evaluation of Router-Supported and End-to-End Multicast Receiver-Based Scoping Protocols," *Proceedings of the International Conference on Computer, Communications and Networks*, May 1999.
133. Donahoo, M. J., Ammar, M. H., Zegura, E., "Multiple Channel Multicast Scheduling for Bulk-Data Transport," *Proceedings of IEEE INFOCOM 99*, New York, April 1999.
134. Li, X., Paul, S., Ammar, M. H., "Multi-Session Rate Control for Layered Video Multicast" *Proceedings of Symposium on Multimedia Computing and Networking*, San Jose, CA, January 1999.
135. Riley, G., Ammar, M. H., Clay, L. "Receiver-Based Multicast Scoping: A novel cost-conscious join/leave paradigm," *Proceedings of the 1998 International Conference on Network Protocols*, Austin, Texas, October 1998.
136. Ammar, M. H., Almeroth, K., Clark, R., Fei, Z. "Multicast Delivery of Web Pages OR How to make your web server pushy," *Proceedings of the 1998 Workshop on Internet Server Performance*, June 1998, Madison, Wisconsin.
137. Jiang, T., Ammar, M. H., Zegura, E. W. "Inter-Receiver Fairness: A Novel Performance Measure for Multicast ABR Sessions" *Proceedings of ACM SIGMETRICS 98*, Madison, Wisconsin, June 1998, pp202-211.
138. Jiang, T., Zegura, E. W., Ammar, M. H., "Improved Consolidation Algorithms for Point-to-Multipoint ABR Service," *Proceedings of the ATM98 Workshop*, Fairfax, Virginia, May 1998.
139. Almeroth, K. C., Ammar, M. H., "The Interactive Multimedia Jukebox (IMJ): A New Paradigm for the On-Demand Delivery of Audio/Video" *Proceedings of the 7th WWW conference*, Brisbane, Australia, April 1998. (**Winner of Best Paper Award at Conference.**) Published in *Computer Networks*, Vol. 30, April 1998, pp 431-441.

140. Almeroth, K. C., Ammar, M. H., Fei, Z., "Scalable Delivery of Web Pages Using Cyclic Best-Effort (UDP) Multicast," *Proceedings of IEEE INFOCOM 98*, March 1998, pp1214-1221.
141. Fei, Z., Bhattacharjee, S. Zegura, E. W., Ammar, M. H., "A Novel Server Selection Technique for Improving the Response Time of a Replicated Service," *Proceedings of IEEE INFOCOM 98*, March 1998, pp783-791.
142. Krupczak, R. D., Calvert, K. L., Ammar, M. H., "Implementing Protocols in Java: The Price of Portability," *Proceedings of IEEE INFOCOM 98*, March 1998, pp765-773.
143. Li, X., Paul, S., Ammar, M. H., "Layered Video Multicast with Retransmissions (LVMR): Evaluation of Hierarchical Rate Control," *Proceedings of IEEE INFOCOM 98*, March 1998, pp1062-1072.
144. Mahajan, S., Donahoo, M., Navathe, S., Ammar, M., Malik, S., "Grouping techniques for update propagation in intermittently connected databases," *Proceedings of the IEEE International Conference on Data Engineering*, February 1998, Orlando, Florida.
145. Li, X., Paul, S., Pancha, P., Ammar, M., "Layered Video Multicast with Retransmission (LVMR): Evaluation of Error Recovery Schemes," *Proceedings of the workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)*, May 1997, St. Louis. MO, pp171-182.
146. Bhattacharjee, S., Ammar, M. H., Zegura, E., Shah, V., Fei, Z., "Application-Layer Anycasting," *Proceedings of IEEE INFOCOM 97*, Kobe, Japan, April 1997.
147. Talpade, R., Ammar, M. H., "Multicast Server Architectures for Supporting IP Multicast over ATM," *Proceedings of the IFIP High Performance Networking Conference*, White Plains, NY, April 1997, pp3-18.
148. Krupczak, R., Calvert, K., Ammar, M. H., "Protocol Portability through Module Encapsulation," *Proceedings of the 4th IEEE International Conference on Network Protocols (ICNP)*, Columbus, Ohio, October 1996, pp56-63.
149. Talpade, R., Armitage, G. J., Ammar, M. H., "Experience with Architectures for Supporting IP Multicast over ATM", *Proceedings of the IEEE ATM '96 Workshop*, San Francisco, August 1996.
150. Li, X., Ammar, M. H., "Bandwidth Control for Replicated Stream Multicast Video Distribution," *Proceedings of the the 1996 High Performance Distributed Computing Symposium*, Syracuse, NY, August 1996, pp356-363.
151. Almeroth, K., Ammar, M. H., "Collection and Modeling of the Join/Leave behavior of Multicast Group Members in the Mbone," *Proceedings of the the 1996 High Performance Distributed Computing Symposium*, Syracuse, NY, August 1996, pp209-216.
152. Krupczak, R., Ammar, M. H., Calvert, K., "Multi-Subsystem Protocol Architectures: Motivation and an Adapter-Based Approach," *Proceedings of IEEE INFOCOM '96*, March 1996, San Francisco, CA, pp1149-1156.
153. Cheung, S. Y., Ammar, M. H., Li, X., "On the Use of Destination Set Grouping to improve Fairness in Multicast Video Distribution," *Proceedings of IEEE INFOCOM '96*, March 1996, San Francisco, CA, pp553-560.
154. Clark, R. J., Ammar, M. H., Calvert, K. C., "Protocol Discovery in Multi-Protocol Networks," *Proceedings of the International Conference on Computer Communications and Networks*, Las Vegas, Nevada, September 1995, pp 361-368.
155. Cheung, S. Y., Ammar, M. H., "Using Destination Set Grouping to Improve the Performance of Window-Controlled Multi-Point Connections," *Proceedings of the International Conference on Computer Communications and Networks*, Las Vegas, Nevada, September 1995, pp388-395.

156. Lee, C.-K., Ammar, M. H., Burns, J. E., "An Improved Leader Election Protocol in Multi-hop Radio Networks," *Proceedings of the International Conference on Computer Communications*, Seoul, South Korea, August 1995, pp 279-284.
157. Talpade, R., Ammar, M. H., "Single Connection Emulation(SCE): An Architecture for Providing a Reliable Multicast Transport Service," *Proceedings of the 15th IEEE International Conference on Distributed Computing Systems*, Vancouver, Canada, June 1995, pp144-151.
158. Almeroth, K., Ammar, M. H., "On the Role of Multicast Communication in the Provision of a Scalable and Interactive Video-on-Demand Service," *Proceedings of the 2nd Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV)*, Durham, New Hampshire, April 1995, pp267-270.
159. Rouskas, G., Ammar, M. H., "Minimizing Delay and Packet Loss in Single-Hop Lightwave WDM Networks Using TDM Schedules," *Proceedings of the IEEE International Communications Conference(ICC)*, Seattle, Washington, June 1995, pp 1267-1271.
160. Almeroth, K., Ammar, M. H., "On the Performance of a Multicast Delivery Video-on-Demand System with Discontinuous VCR Functions," *Proceedings of the IEEE International Communications Conference (ICC)*, Seattle, Washington, June 1995, pp1631-1635.
161. Clark, R. J., Ammar, M. H., "Providing a Scalable Web Service Using Multicast Delivery," *Proceedings of the 2nd International Workshop on Services in Distributed and Networked Environments*, Whistler, Canada, June 1995, pp19-26.
162. Rouskas, G., Ammar, M. H., "Reconfigurability in Multi-Hop WDM Networks," *Proceedings of the Third International Conference on Computer Communication Networks*, San Francisco, September 1994, pp 391-395.
163. Almeroth, K. C., Ammar, M. H., "Providing a Scalable, Interactive Video-on-Demand Service Using Multicast Communication," *Proceedings of the Third International Conference on Computer Communication Networks*, San Francisco, September 1994, pp 292-296.
164. Ammar, M. H., "Probabilistic Multicast: Generalizing the Multicast Paradigm to Improve Scalability," *Proceedings of IEEE INFOCOM '94*, Toronto, Canada, June 1994, pp848-855.
165. Rouskas, G., Ammar, M. H., "Multi-Destination Communication Over Single-Hop Lightwave WDM Networks," *Proceedings of IEEE INFOCOM 94*, Toronto, Canada, June 1994, pp1520-1527.
166. Clark, R. J., Calvert, K., Ammar, M. H., "On the Use of Directory Services to Support Multi-Protocol Inter-Operability," *Proceedings of IEEE INFOCOM 94*, Toronto, Canada, June 1994, pp784-791.
167. Lee, C. K., Burns, J., Ammar, M. H., "Improved Randomized Broadcast Protocols in Mutli-hop Radio Networks," *Proceedings of the International Conference on Network Protocols*, San Francisco, California, October 1993, pp6-13.
168. Lindgren, B., Krupczak, B., Ammar, M. H., Schwan, K., "Parallel and Configurable Protocols: Experience with a Prototype and an Architectural Framework," *Proceedings of International Conference on Network Protocols*, San Francisco, California, October 1993, pp234-242.
169. Stevens, D. S., Ammar, M. H., "Strategies for Group Testing in Multi-Hop Radio Networks," *Proceedings of the International Conference on Communications (ICC)*, Geneva, Switzerland, June 1993, pp1609-1613.
170. Ammar, M. H., Cheung, S. Y., Scoglio, C., "Routing Multipoint Connections Using Virtual Paths in an ATM Network" *Proceedings of INFOCOM '93*, San Francisco, California, March/April 1993, pp98-105.
171. Lee, C. K., Burns, J., Ammar, M. H., "Protocols for Collecting Responses in Multi-hop Radio Networks," *Proceedings of INFOCOM 93*, San Francisco, California, March/April 1993, pp 439-446.

172. Rouskas, G. N., Ammar, M. H., "Analysis and Optimization of Transmission Schedules in Single-Hop WDM Networks," *Proceedings of INFOCOM '93*, San Francisco, California, March/April 1993, pp1342-1349.
173. Clark, R. J., Ammar, M. H., Calvert K., "Multi-Protocol Architectures as a Paradigm for Achieving Inter-Operability," *Proceedings of INFOCOM '93*, San Francisco, California, March/April 1993, pp136-142.
174. Ammar, M. H., Wu, L. R., "Improving the Performance of Point to Multi-Point ARQ Protocols through Destination Set Splitting," *Proceedings of IEEE INFOCOM '92*, Florence, Italy, May 1992, pp 262-271.
175. Stevens, D. S., Ammar, M. H., "Evaluation of A Distributed TDMA Rescheduling Procedure for Mobile Packet Radio Networks," *Proceedings of 1991 Military Communications Conference*, November 1991, McLean, Virginia, pp1167-1171.
176. Ammar, M. H., Rouskas, G., "On the Performance of Protocols for Collecting Responses Over a Multiple Access Channel," *Proceedings of IEEE INFOCOM '91*, Miami, Florida, April 1991, pp1490-1499.
177. Ammar, M. H., Stevens, D. S., "A Distributed TDMA Rescheduling Procedure for Mobile Packet Radio Networks," *Proceedings of The IEEE International Conference on Communications (ICC '91)*, Denver, Colorado, June 1991, pp1609-1613.
178. Ahamad, M., Ammar, M. H., Cheung, S.Y., "Optimizing the Performance of Replica Control Protocols," *Proceedings of the IEEE Workshop on the Management of Replicated Data*, Houston, Texas, November 1990, pp102-107.
179. Ammar, M. H., Stevens, D.S., "Evaluation of Slot Allocation Strategies for TDMA Protocols in Packet Radio Networks," *Proceedings of The 1990 Military Communications Conference (MILCOM)*, Monterey, California, October 1990, pp835-839.
180. Ammar, M. H., Ahamad, M. , Cheung, S. Y., "Performance of Quorum Consensus Protocols for Mutual Exclusion from the User's Point of View," *Proceedings of the Second IEEE Workshop on Future Trends of Distributed Computing Systems in the 1990's*, Cairo, Egypt, September 1990, pp413-419.
181. Bernabeu, J., Ahamad, M., Ammar, M. H., "Serial Search in Store-and-Forward Networks," *Proceedings of IEEE INFOCOM '90*, San Francisco, California, June 1990, pp 819-826.
182. Cheung, S. Y., Ahamad, M., Ammar, M. H., "Multi-Dimensional Voting: A General Method for Implementing Synchronization in Distributed Systems," *Proceedings of the 10th International Conference on Distributed Computing Systems*, Paris, France, June 1990, pp 362-369.
183. Cheung, S. Y., Ammar, M. H., Ahamad, M., "The Grid Protocol: A High Performance Scheme for Maintaining Replicated Data," *Proceedings of the 6th IEEE International Conference on Data Engineering*, Los Angeles, California, February 1990, pp 438-445.
184. Bernabeu, J., Ammar, M. H., Ahamad, M., "Optimal Selection of Multicast Groups to Locate Resources in a Distributed System," *Proceedings of INFOCOM '89*, April 89, Ottawa, Ontario, Canada, pp312-321.
185. Cheung, S. Y., Ahamad, M., Ammar, M. H., "Optimizing Vote and Quorum Assignments for Reading and Writing Replicated Data," *Proceedings of the 5th IEEE International Data Engineering Conference*, February 1989, Los Angeles, California, pp271-279.
186. Ahamad, M., Ammar, M. H., Bernabeu, J. A., Khalidi, M. Y., "Using Multicast Communication to Locate Resources in a LAN-Based Distributed System," *Proceedings of the 13th IEEE Conference on Local Area Networks*, October 1988, Minneapolis, Minnesota, pp193-202.
187. Ammar, M. H., Chung, K. D., "Performance of a Manufacturing System Using a Token-Passing Communication Network," *Proceedings of IEEE INFOCOM '88*, New Orleans, Louisiana, April 1988, pp496-504.

188. Ammar, M. H., Bernabeu, J. A., Ahamad, M., "Using Hint Tables to Locate Resources in Distributed Systems," *Proceedings of the IEEE INFOCOM '88*, New Orleans, Louisiana, April 1988, pp1050-1059.
189. Ammar, M. H., "An Individual User's Perspective of Response Time in a Teletext System," *Proceedings of IEEE INFOCOM '87*, San Francisco, California, April 1987, pp534-543.
190. Ahamad, M., Ammar, M. H., "Performance Characterization of Quorum-Consensus Algorithms for Replicated Data," *Proceedings of the Sixth Symposium on Reliability in Distributed Software and Database Systems*, Williamsburg, Virginia, March 1987, pp161-168.
191. Ammar, M. H., "A Broadcast Polling Scheme for Teletext-Like Information Delivery," *Proceedings of the IEEE Global Telecommunications Conference (GLOBECOM '86)*, Houston, Texas, December 1986, pp1246-1250.
192. Ammar, M. H., "Performance Analysis of a Manufacturing System with Integrated Control and Communication Functions," *Proceedings of the 1986 IEEE International Conference on Systems, Man, and Cybernetics*, Atlanta, Georgia, October 1986, pp1573-1577.
193. Dykeman, H. D., Ammar, M. H., Wong, J. W., "Scheduling Algorithms for Videotex Systems Under Broadcast Delivery," *Proceedings of the 1986 International Conference on Communications*, Toronto, Ontario, June 1986, pp1847-1851.
194. Ammar, M. H., Wong, J. W., "Response Time Distribution of Information Systems Using Broadcast Delivery," *Proceedings of INFOCOM '86*, Miami, Florida, April 1986, pp172-179.
195. Ammar, M. H., Wong, J. W., "On the Optimality of Cyclic Transmission in Teletext Systems," *Proceedings of the 24th IEEE Conference on Decision and Control*, Ft. Lauderdale, Florida, December 1985, pp1266-1269.
196. Ammar, M. H., Wong, J. W., "Response Time Optimization in Teletext Systems," *Proceedings of IEEE INFOCOM '85*, Washington, D.C., April 1985, pp266-272.
197. Wong, J. W., Ammar, M. H., "Analysis of Broadcast Delivery in Videotex Systems," *Proceedings of the IEEE Global Telecommunications Conference (GLOBECOM '84)*, Atlanta, Georgia, November 1984, pp933-937.
198. Ammar, M. H., Gershwin, S. B., "Equivalence Relations in Queueing Models of Manufacturing Networks," *Proceedings of the 19th IEEE Conference on Decision and Control*, Albuquerque, New Mexico, December 1980, pp715-721.
199. Gershwin, S. B., Ammar, M. H., "Reliability in Flexible Manufacturing Systems," *Proceedings of the 18th IEEE Conference on Decision and Control*, Ft. Lauderdale, Florida, December 1979, pp540-545.

## **F. Patents**

1. "Systems and methods for network routing," (Authors: Hilt, Hoffman, Seetharaman, and Ammar) U.S. Patent 8,565,117, Filed: January 2008, Awarded: October 2013.
2. "Hierarchical Rate Control of Receivers in a Communication System Transmitting Layered Video Multicast Data with Retransmission (LVMR)," (Authors: Ammar, Li, Pancha and Paul). U.S. Patent 6,215,766, Filed: January 1998, Awarded: April 2001.
3. "Database Synchronization and Orgnaization System and Method," (Authors: Donahoo, Mahajan, Navathe, Ammar and Malik). U.S. Patent 6,226,650, Filed: September 1998, Awarded: May 2001.

## G. Software and Systems Developed in Research Group

1. **NANO (Network Access Neutrality Observatory):** NANO identifies performance degradations that result from network neutrality violation by an Internet service provider (ISP), such as, differential treatment of specific classes of applications, users, or destinations by the ISP.  
(<http://www.gtnoise.net/nano/>)
2. **NetFinder:** A tool for assigning virtual networks to Planet Lab Resources.  
(<http://www.cc.gatech.edu/computing/Networking/projects/netfinder/>)
3. **Autopart:** A tool to automatically partition a large network simulation into smaller simulation instances, so that they can be run on a number of machines with PDNS (see below), a parallel and distributed network simulation tool based on ns2. By distributing a simulation onto a number of machines, we can achieve the simulation scale that the original ns2 cannot achieve on a single workstation.  
No longer available on-line.
4. **GnutellaSim:** An extensible and scalable simulation system for peer-to-peer file sharing systems built on top of the popular ns-2 network simulation system. (<http://www.cc.gatech.edu/computing/compass/gnutella>)
5. **CryptoPan:** A cryptography-based sanitization tool that allows prefix-preserving anonymization of IP addresses in traffic traces.  
(<http://www.cc.gatech.edu/computing/Telecomm/projects/cryptopan/>)
6. **pdns:** A system for parallel and distributed simulation based on the popular ns simulation package.  
Student: George Riley, Faculty Collaborator: Richard Fujimoto  
(<http://www.cc.gatech.edu/computing/compass/pdns>)  
(Also incorporated in main ns release at <http://www.isi.edu/nsnam/ns>)
7. **ns with NIX Vector Routing:** An enhancement to routing module of the ns simulator to improve its scalability to large networks.  
Student: George Riley, Faculty Collaborator: Richard Fujimoto  
(<http://www.cc.gatech.edu/computing/compass/nvns>)
8. **PicPat:** A system for VCR-style interaction with multicast video/audio streams.  
Student: Sameer Merchant  
(<http://www.cc.gatech.edu/fac/Mostafa.Ammar/picpat/>)
9. **Hotlava:** An exploration of Java protocol programming.  
Student: Bobby Krupczack  
(<http://www.cc.gatech.edu/computing/Networking/projects/playground/hotlava/>)  
Code no longer available for download.  
*Winner of 2nd Prize in IBM/ACM Quest for Java Contest, 1997.*
10. **The Interactive Multimedia Jukebox:** A system for delivering multimedia content over the Internet and the Multicast Backbone.  
Student: Kevin Almeroth  
(<http://www.cc.gatech.edu/computing/Telecomm/projects/IMJ/>)
11. **MARS-based IP multicast over ATM:** Implementations of client and server for the IETF adopted solution for multicasting over ATM networks.  
Student: Rajesh Talpade  
(<http://www.cc.gatech.edu/computing/Telecomm/playground/MCS/>)
12. **The SCE reliable multicast protocol:** A reliable multicast transport protocol with both a kernel and user-space implementation.  
Student: Rajesh Talpade  
(<http://www.cc.gatech.edu/computing/Networking/projects/playground/MCS/>)

13. **Multicast Web Touring:** A system using reliable multicast communication for guided tours of the web.  
Student: Tianji Jiang  
No longer available on-line.
14. **Mlisten:** A tool for collecting mbone multicast session dynamics.  
Student: Kevin Almeroth  
(<http://www.cc.gatech.edu/computing/Telecomm/projects/mbone/>)

#### H. Published Papers (non-refereed)

1. Ammar, M., "10 Recommended Readings: A blast from the past," SIGCOMM Computer Communication Review, January 2007.
2. Fei, Z., Ammar, M., Zegura, E., "Efficient Server Replication and Client Re-Direction for Multicast Services," Proceedings of SPIE/ITCOM Conference on "Scalability and Traffic Control in IP Networks," Denver, Colorado, August 2001.
3. Almeroth, K. C., Ammar, M. H., "Delivering Popular Web pages using Cyclic Multicast," Proceedings of SPIE (Vol. 3231) (The International Society for Optical Engineering), November 1997.
4. Talpade, R., Ammar, M. H., "Multicast Server Architectures for MARS-based ATM Multicasting," Internet Engineering Task Force, Request for Comments (RFC) 2149, May 1997.
5. Ammar, M.H., Polyzos, G., Tripathi, S., "Guest Editorial, Special Issue on Network Support for Multipoint Applications," *IEEE Journal on Selected Areas in Communications*, 15(3), pp273-276, April 1997.
6. Ammar, M. H., Li, V. O. K., Ulema, M., "Guest Editorial, Special Issue on Broadband ISDN: Standards, switches and traffic management," *Computer Networks and ISDN Systems*, 27(1), pp 1-3, November 1994.
7. Clark, R. J., Ammar, M. H., and Calvert, K. L., "Multiprotocol Interoperability In IPng", Internet Engineering Task Force, Request for Comments (RFC) 1683, August 1994.

#### I. Honors and Awards

*College of Computing Faculty Mentor Award*, College of Computing, Georgia Tech, April 2015.

*Class of 1940 Course Survey Teaching Effectiveness Award*, Georgia Tech, for 4 consecutive years (AYs 2012/13, 2013,14, 2014/15, 2015/16).

*Best Paper Award*, ACM Mobihoc Conference (2012). For paper entitled "Serendipity: Enabling Remote Computing among Intermittently Connected Mobile Devices," co-authored with Shi, Lafakosis and Zegura.

*Outstanding Service Award (2010)*, IEEE Technical Committee on Computer Communications, "For Outstanding service to the computer communications community over a long period of time."

*ACM Recognition of Service Award (2007)* for Service as Program Co-Chair of ACM Sigmetrics 2007.

*Outstanding Doctoral Thesis Advisor Award (2007)*, Georgia Tech Institute Award.

*Fellow, Association for Computing Machinery (ACM) (2003)*

Citation: "For contributions to the design of systems and protocols for scalable network services."

*Fellow, Institute of Electrical and Electronics Engineers (IEEE) (2002)*

Citation: "For contributions to the design of scalable multimedia services and their network support."

*Best Paper Award* at the Conference on Parallel and Distributed Simulation (PADS), 2002, for paper entitled "Updateable Network Simulations". (co-recipient, Ferenci, Riley, Fujimoto, Perumalla).

*Best Paper Award* at the 7th WWW Conference, Brisbane Australia, April 1998 for paper entitled “Interactive Multimedia Jukebox.” (co-recipient with Kevin Almeroth)

*IBM Faculty Partnership Award*, May 1996. (\$40,000 Award)

*Edenfield Faculty Fellowship Award*, College of Computing, June 1996. For project entitled: “Providing Entertainment Content with an Interactive Multimedia Jukebox”, (co-authored with Ann Chervenak). (\$10,000 Award)

*Outstanding Faculty Research Award*, College of Computing, 1993.

Natural Sciences and Engineering Research Council of Canada’s Postgraduate Scholarship, Sept. 1982 - Aug. 1985. \$10,000 per year.

Bell-Northern Research’s Postgraduate Award, Sept. 1982 - Aug. 1985. \$10,000 per year.

*Second Place Paper Award* in the Operations Research Society of America’s Nicholson Student Paper Competition for paper entitled “*Equivalence Relations in Queuing Models of Manufacturing Networks*,” May 1981. \$200

## **J. Recent Visits, Speaking Invitations and Conference Tutorials**

### **Visits and Speaking Invitations (Since 2000):**

- Univ. of Virginia (March 2000),
- Univ. of Kentucky (Speaker at **New Building Convocation** – October 2000),
- University of Minnesota (Speaker in Cray Distinguished Lecture Series – April 2001),
- University of California – Davis (Distinguished Lecturer Series – Feb. 2003),
- Florida Atlantic University – Distinguished Lecture Series – September 2003.
- HP Labs, Palo Alto, CA, Computer Systems Colloquium – March 2003.
- Keynote Speaker at the ACM NOSSDAV Conference (Monterey, CA – June 2003)
- Keynote Speaker at NSF-sponsored International Workshop on Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless and Peer-to-Peer Networks, Ft. Lauderdale, FL. (February 2004)
- Distinguished Lecture Series, Institute for Computing, Information and Cognitive Systems, University of British Columbia, Vancouver, BC, Canada (February 2004).
- Keynote at 38th Annual Simulation Symposium Hilton Mission Valley Hotel San Diego, CA April 2005.
- Visit to Intel Research, Cambridge, England, May 2005.
- Keynote at IEEE MASCOTS conference, October 2005, Atlanta, GA.
- Keynote at Co-Next 2005, Toulouse, France, October 2005.
- Distinguished Lecture Series, Dept. of Electrical Engineering, University of Southern California, January 2006.
- Distinguished Lecture Series, Dept. of Computer Science, University of Texas, Dallas, February 2006.
- Distinguished Lecture Series, Emerging Communications Technology Institute, University of Toronto, October 2006.
- Keynote Talk at IEEE Mobile and Sensor Systems Conference, October 2007, Pisa, Italy.
- CISE Seminar, University of Florida, February 2008.
- CISE Seminar Series, Boston University, May 2009.
- Keynote Speaker, IEEE Computer Communications Workshop, Lake Arrowhead, CA, October 2010.

- Plenary Speaker, Panel on Sensor Networks, IEEE CLOBECOM 2010, Miami, FL, December 2010.
- Keynote Speaker, The 7th International Conference on Innovations in Information Technology, Abu Dhabi, UAE, April 2011.
- Speaker in Access Distinguished Lecture Series, KTH Royal Institute of Technology, Stockholm, Sweden, June 2011.
- Distinguished Lecture, Dept. of Computer Science, University of California, Irvine, January 2012.
- Computer Science Lecture, Dept. of Computer Science, Carnegie Mellon University - Qatar, March 2012.
- Distinguished Lecture Series, School of Computing, University of Utah, October 2012.
- Seminar, National ICT Australia Labs, Sydney, Australia, June 2013.
- Seminar, Army Research Lab, Aberdeen Proving Grounds, Maryland, August 2013.
- Seminar, Technicolor Labs, Paris, France, October 2013.
- Seminar, AT&T Research, Bedminster, N.J., January 2015.
- Seminar, Alcatel-Lucent Bell-Labs, Murray Hill, N.J., January 2015.
- Seminar, Laboratory of Information, Networking and Communication Sciences (LINCS), Paris, France, March 2015.
- Seminar, Georgia Tech Lorraine, Metz, France, March 2015.
- Keynote, IEEE MASCOTS (Int'l Symposium of Modeling, Analysis and Simulation of Computer and Telecom Systems), Atlanta, GA, October 2015.
- Dean's Lecture, Carnegie Mellon University, Qatar Campus, Doha, Qatar, April 2016.
- Keynote, IEEE Wireless Communications and Networking Conference, Doha, Qatar, April 2016.
- Seminar, Department of Electrical Engineering, University of Toronto, Canada, September 2016.
- Distinguished Lecture, Department of Computer Science, Simon Fraser University, Vancouver, British Columbia, Canada, October 2016.
- Seminar, Department of Electrical Engineering, Purdue University, October 2016.
- Seminar, Dept. of Electrical and Computer Engineering, University of Arizona, January 2017.
- Computer Science Colloquium, School of Computer Science, University of Waterloo, July 2017.

#### **Tutorials:**

- Tutorial on "Principles of Multicast Protocols and Services," (joint with Don Towsley), in INFOCOM 2001, April 2001.
- Tutorial on "Principles of Multicast Protocols and Services," (joint with Don Towsley), First Networked Group Communications Workshop, Pisa, Italy, November 1999.
- Tutorial on "Dissemination-based (Push) Information Services" (joint with Ernst Biersack of Institut Eurecom, France), ACM Multimedia 98 Conference, Bristol, England, September 1998.
- Tutorial on "Multicast Communication" (joint with Don Towsley of UMass, Amherst) at the ACM SIGCOMM conference, Cannes, France, September 97.
- Tutorial on "Multicast Communication" (joint with Don Towsley of UMass, Amherst) at the ACM SIGMETRICS conference, Seattle, June 97.
- Tutorial on "What is TCP/IP" to the Society of Cable Television Engineers Conference, Nashville, Tennessee, January 1997.

## **K. Research Proposals and Grants (Principal Investigator)**

### **Approved and Funded**

*Stratus Clouds: Mobile Computing with Tactical HPC in the Field* (PIs Zegura, Ammar)  
Army Research Lab - Aberdeen, MD.  
Amount:\$250,000, July 2014 - June 2016.

*NeTS: Medium: Collaborative Research: Tango: Performance and Fault Management in Cellular Networks through Device-Network Cooperation* (PI: Ammar – In collaboration with Bagchi, Qi (Purdue), Joshi, Panta (ATT Research))  
National Science Foundation  
Amount:\$375,000 (GT Share), August 2014 - July 2017.

*NeTS: Small: Collaborative Proposal: Enabling Network Agility through Virtualized Infrastructure Migration* (PIs: Ammar, Zegura – In collaboration With E. Al-Shaer UNC Charlotte)  
National Science Foundation  
Amount: \$250,000 (GT Share), August 2013 - July 2016.

*NeTS: Medium: Mobile Computing over Intermittently Connected Networks* (PIs: Ammar, Zegura, naik , Essa)  
National Science Foundation  
Amount: \$695,000, August 2012 - July 2015.

*NeTS: Small: Recovery and Transformation of Human Mobility Traces for Mobile Wireless Experimentation*  
Amount: \$399,000, August 2011 - July 2014.  
Mostafa Ammar, Ellen Zegura PIs

*Towards Collaborative Overlay Problem Diagnosis Using Evidential Reasoning and Adaptive Monitoring*  
NSF, \$500,000 (GT share \$250K), August 2010-August 2013. PIs: Ammar and Al-Shaer (UNCC).

*The WAM Continuum: Unified Design and Operation for Wireless and Mobile Networks*, NSF, \$450K, Aug. 2008 - Aug. 2011. PIs: Ammar and Zegura.

*Routing in Multi-Layered Networks*, NSF, \$350K, September 2007- September 2010. PI: Ammar.

*Distributed performance monitoring, problem diagnosis and problem localization*, PIs: Dovrolis, Ammar, Telchery (Duluth, GA), \$40,000 foundation grant.

*DOME: DTN Outdoor Mobile Environment*, DARPA DTN project phase 2, PIs: Zegura, Ammar, Levine (UMASS), Corner(UMASS)  
\$600,000, September 2006 - March 2008  
\$600,000, Fall 2008 - April 2010

*Distruption Tolerant Networks*, Cisco Systems University Research Program Award, \$80K, Aug. 2006. PIs: Ammar, Zegura.

*Design of Disruption Tolerant Networks*, NSF, co-PIs: Ammar. Zegura, Levine (Umass), Corner (UMass), \$1.5 Million, August 2005 -August 2009.

*Intelligent Route Control*, NSF, PIs: Dovrolis, Zegura an Ammar, \$200K, September 2005- September 2007.

ALERT: Adaptive LEarning and Routing Technologies for Disruption Tolerant Networks, DARPA, PIs: Zegura, Ammar, Levine (UMASS), Corner(UMASS), Amount: \$275,000, Feb. 2005- April 2006.

Mobility-Assisted Data Delivery in Wireless Networks, GT Broadband Institute, PIs: Ammar, Zegura, 1-student GRA support, 8/1/2004 - 7/30/2005.

Message Ferrying: Mobility-Assisted Data Delivery in Highly Partitioned N Networks, NSF, PIs: Ammar, Zegura, Amount: \$325,000, 9/15/03 - 9/14/06.

Design and Evaluation of Retrieval Functions in Peer-to-peer File-Sharing Systems, NSF, December 2001, PIs: Ammar, Zegura, Amount:\$300,000 , 10/1/03 -9/30/06.

A Simulation Testbed for Networked Sensors in Surface Transportation Systems, NSF, PIs, Fujimoto, Ammar, Guensler, Williams, Amount funded: \$150,000, 9/11/2002 - 8/10/2004.

Peer-to-Peer Content Distribution Services and Architectures, GT Broadband Institute, PIs: Ammar, Zegura, 1-student GRA support, 8/1/2002 - 7/30/2003.

End-to-end All-Optical Service Provisioning, Sprint, PIs: Ammar and Jukan, Amount funded: \$25,000, 9/18/2002 - 6/30/2003.

Large Scale Computer Network Experimentation through Simulation, NSF, PIs: Fujimoto, Ammar and Riley, Amount funded: approx. \$520K, 9/1/02 - 8/31/05.

Research in Optical Networking. Funded by Yamacraw

- ('01-'02), (1 GRA + 1.5 months salary).
- ('02-'03), (1 GRA + 1 month salary).

Collaborative Technology Research Alliance in Communications and Networking, Army Research Lab Research Consortium (Telcordia, U. of Maryland, U. of Delaware, CCNY, Johns Hopkins U., Georgia Tech), approx. \$60K (Sept 01 - Sept 02).

*Protocols and Architectures for Scalable Content Distribution Networks*, Georgia Tech Broadband Institute, \$60K, July 2001 (Ammar and Zegura Co-PIs).

*Differentiated Services Testbed for the Internet2*, BellSouth Foundation Grant \$75K, July 2000. PI: Ammar.

#### *Fault-Tolerant Real-Time Networks*

A Multi-University Research Initiative Award, funded by the Air Force Office of Scientific Research, Team includes: UC-Berkeley (prime contractor), Georgia Tech, MIT, Duke, Michigan.

Total Award: \$2.9M (3 years), \$2.1M (2 year option)

Georgia Tech Portion: \$358K (3 years), \$289K (2 year option) Duration: April 2000 - April 2005).

#### *MURI Fellowship – supplement to above grant*

Fellowship awarded to Paul Judge, Sept. 2000-August 2003.

\$40K/ year.

*COMPASS: Composable and Parallel Simulations for Internetworks*, PIs: Ammar, Fujimoto National Science Foundation, \$660K, October 1999 - September 2002.

*Server Selection in Emerging Networked Service Environments*, PIs: Ammar and Zegura, NSF, \$399K, October 1999 - September 2002.

#### *Scalable Internet Services Using Multicast Communication*,

Sprint Advanced Technology Labs,

\$60K Foundation Grant, awarded Summer 1999,

\$30K Foundation Grant, awarded Spring 2001.

*Evaluating the Scalability of Aggregation techniques for Database Replication in Intermittently Connected Database Systems*, PIs: Ammar and Navathe, Georgia Research Alliance and Synchrologic, Inc., \$108K, June 97- September 98. (GRAs portion \$49K, Synchrologic's portion: \$58K).

*Scalable Web Service Using Multicast delivery* Intel Corporation, PI: Ammar. \$32,000 grant (including \$7K in Equipment), June 1997.

*Video Multicast Research*, Lucent Bell Labs, PI: Ammar. \$5,700 (Foundation Grant), January 1997.

*Investigating the Individuality/Scalability Tradeoff in the Provision of Networked Services*, PI: Ammar, NSF, \$260,000 (9/30/96 - 9/30/99).

*Interactive Multimedia Jukebox* Broadband Telecom Center, PI: Ammar, \$15,000, January 1996

*Interactive Multimedia Jukebox*(PIs: Ammar and Chervenak) Edenfield Fellowship (College of Computing) \$10,000, June 1996

*Remote Collaboration and Teaching Facility*(Co-PIs: Calvert, Enslow, Limb, Zegura), AT&T Special Purpose Grant Program \$20,000. October 1996.

*Improving the Scalability and Cost Effectiveness of Database Access for Applications Involving Intermittently-Connected Users*, PIs: Ammar and Navathe, Georgia Research Alliance and Synchrologic, Inc., \$109,190, June 96- September 97. (GRAs portion \$51K, Synchrologic's portion: \$58K).

*Prototyping an Integrated Web/Telephony Distributed Collaboration Systems*, IBM Faculty Partnership Award, PI: Ammar \$70,000 (\$40K Foundation Grant and \$30K equipment) August 1996- August 1997.

*An Integrated Database/Networking Research Testbed*, PIs: Ammar, Navathe, Georgia Research Alliance, \$85,000, Equipment only.

*Multicast IP over ATM Networks*, Bellcore, PI: Ammar, \$30,000. Jan 1, 1996 - Dec. 31, 1996.

*Application-Based Traffic Management for ATM Networks*, (Co-PIs: Limb, Aaron, Evans, Zegura, Mukherjee) Hitachi Telecom, USA, Approx \$250,000 in Contract and Foundation Grants, October 95-September 96.

*Equipment in support of Multimedia Networking Research and Education*, Intel Corporation, \$13,850, (equipment donation) February 1996.

*Networking Instructional Lab Enhancements*, (Co-PIs: Calvert, Enslow, Limb, Mukherjee, Zegura) AT&T Special Purpose Grant, \$30,000. October 1995.

*A Testbed for Multimedia Communication Protocols*,(Co-PIs: Calvert, Enslow, Mukherjee, Zegura) AT&T Special Purpose Grant, \$20,000, October 1994.

*Instructional and Educational Network Management Laboratory*, CoPIs: Enslow, Kappel, Calvert, AT&T Special Purpose Grant, \$12,000, October 1993.

*TransOpen: Transitioning to the Open Systems Environment- FY93*, Co-PIs: Eidbo, Navathe, Mark, Calvert, Rugaber, MacCracken, Army Research Lab, \$450,000. 8/15/93 - 8/14/94.

*Using Replication to Build High Performance Distributed Systems*, PIs: Ahamad and Ammar, Defense Advanced Research Projects Agency (DARPA), Approx \$230,000. 9/1/93-8/31/95.

*Multi-Protocol Architectures as Paradigm for Achieving Inter-Operability*, PIs: Ammar and Calvert, National Science Foundation \$171,000. 8/1/93 - 7/30/95.

*Transitioning to the Open Environment*, Co-PIs: Putnam, Eidbo, Rugaber, MacCracken, Army Research Lab \$250,000. 6/92-3/93,

*ISA 97 - Compliant Architecture Testbed*, Co-PIs: Putnam, Eidbo, Rugaber, McCracken, US Army Research Lab, \$150,000. 8/18/91-12/31/92,

AT&T Mentor Program, (Co-PI Enslow), \$25,000. AY 1988/89.

*Prototyping a Broadcast Delivery Information System*, National Science Foundation supported Center for Information Management Research. \$40,000. 10/1/90 - 9/30/92. PI: Ammar.

*Performance Analysis of Large Scale Information Systems*, National Science Foundation, \$99,360. 12/1/87 to 11/30/90. PI: Ammar.

#### **L. Research Proposals and Grants (Contributor)**

##### **Approved and Funded**

*Distributed Laboratories*, (PIs: Fujimoto, Schwan, Limb, Ahamad)  
National Science Foundation  
Research Infrastructure, \$1,000,000. June 1995.

Georgia Tech Telecommunications Program Proposal  
Bell South Foundation,  
\$674,236. June 1989.

### III. Service

#### **A. Professional Activities**

##### **1. Society Memberships**

**Fellow**, Institute of Electrical and Electronics Engineers, Communications Society

**Fellow**, Association for Computing Machinery, also Special Interest Group on Computer Communications

##### **2. Editorial and Review Work for Technical Journals and Publishers**

**Member Steering Committee**, IEEE Transactions on Mobile Computing, 2016-present.

Member of Steering Committee: IEEE/ACM Transactions on Networking, 2005-2010.

**Editor-in-Chief**: *IEEE/ACM Transactions on Networking*. (1999- 2003)

**Member Editorial Board**: *IEEE/ACM Transactions on Networking*. (1996-1999), *Computer Networks and ISDN Systems*. (1992-1999).

**co-Guest Editor**: *IEEE Journal on Selected Areas in Communications*, special issue on “Network Support for Multipoint Communication,” April 1996. (Co-guest editors: Satish Tripathi (U. of Md, College Park) and George Polyzos (UCSD).)

**co-Guest Editor**: Special Issue on “Broadband ISDN: Standards, switches and traffic management,” *Computer Networks and ISDN Systems*, 27(1), November 1994. (Co-guest Editors: Victor Li (U. of Southern California), Mehmet Ulema (Bellcore).)

**Reviewer for**: National Science Foundation, Addison-Wesley Publishing Company, Journal of the ACM, IEEE Computer Magazine, IEEE Transactions on Automatic Control, IEEE Transactions on Reliability, The Computer Journal (UK), Operations Research, IEEE Network Magazine, International Journal of Performance Evaluation, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Communications, IEEE Transactions on Software Engineering, Journal of Computer Networks and ISDN Systems, IEEE Communications Magazine, IEEE/ACM Transactions on Networking, IEEE Journal on Selected Areas in Communications, and numerous conferences.

**Proposal Review Panel**: National Science Foundation – on numerous occasions.

##### **3. Conference Committee Activities**

**Member Steering Committee**, ACM CoNext Conference, 2009- 2013.

**Member Advisory Committee**, IEEE International Conference on Network Protocols, 2011-present.

**Member of Steering Committee**: IEEE/ACM Transactions on Networking, 2005-2012, Committee Chair: 2007/08.

**Program co-Chair**, ACM SIGMETRICS 2007, San Diego, CA.

**Program co-Chair**, Co-Next 2006, Lisbon Portugal.

**Program co-Chair**, Networked Group Communications Workshop, 2002.

**Member Steering Committee for the IEEE International Conference on Network Protocols**, 1998-2008.

**Co-General Chair**: *2000 IEEE International Conference on Network Protocols*, Osaka, Japan, November 2000.

**Program Co-Chair-** *International Conference on Network Protocols, ICNP 97, Atlanta, GA, October 1997.*  
(Conference is sponsored by the IEEE Computer Society.)

**Member of the Program Committee**

*ACM Mobisys Workshop on Do-It-Yourself Networking 2015,2017*

*ACM Multimedia Systems 2015, 2016*

*ACM Multimedia 2014*

*SIGCOMM CHANTS (Challenged Networks Workshop) 2006,2007,2012,2014,2015*

*WCNC 2006*

*WoWMoM 2006*

*Co-Next 2005,2007*

*Networking 2005*

*IEEE WIAPP 2003*

*ACM NOSSDAV 2003*

*NETGAMES 2003*

*ACM International Measurement Workshop: 2002*

*IEEE International Conference on Distributed Computing Systems: 2003*

*ACM SIGCOMM Conference: 2000, 2001, 2012,*

*IEEE International Workshop on Distributed Simulation and Real-Time Systems, '99, '00,*

*IEEE International Conference on Network Protocols '98, '99, '01, '02, 03, 04, 05, 06, 07, 14,*

*ACM SIGMETRICS Conference: 1999, 2001, 2004, 2005*

*IEEE INFOCOM '88, '89, '94, '95, '96, '98, '99, '00, '01, '02, '03, '04, '05, '06, '08(Area Chair),*

*International Conference on Computer and Communication Networks, 1994, 1995, 1996, 1997, 1998,*

*6th IFIP Conference on High Performance Networking, 1997,*

*World Wide Web Consortium Workshop on "Real Time Multimedia on the Web", 1996,*

*ACM Computer Science Conference, 1988,*

*1986 IEEE International Conference on Systems, Man, and Cybernetics.*

**B. CoC/SCS/ICS Committees**

Chair RPT Committee, School of COmputer Science, 2017/18.

Member Regents' Professor Nominee Selection Committee, Spring 2017.

Co-Chair, CoC Strategic Planning Steering Committee, 2016/2017.

Chair, SCS Ad-HoC Committee on Recruiting Effectiveness, Fall 2016.

Member, School of Computer Science Faculty Recruiting Committee (2012/13, 2013/14, 2015/16)

Member, College of Computing, RPT Committee, 2015/16, 2016/2017.  
Chair, College of Computing RPT Committee, Aug 2010 - May 2012  
Chair, Review Committee for School of Interactive Computing Chair (2009)  
CS RPT Chair (2008/2009)  
CS Recruiting Committee Chair (2005/06, 2006/07, 2007/08)  
CoC Executive Committee (2004 – 2006)  
CCD Steering Committee (2003 – 2005)  
CoC RPT Executive Committee (2003 – 2005)  
Co-Chair, Graduate Committee (2002/03).  
Graduate Area Coordinator for NTG (2000 - 2004).  
Graduate Area Advisor (1998/99).  
Member Graduate Admissions Committee (1998/99).  
Chair, Faculty Search Committee, September 1996 - June 1998.  
Chair, College of Computing Honors Committee, August 1994 - August 1996.  
Member, Advanced Telecom Chair Search Committee (GCATT/GRA) (1991/92,1992/93, 1993/94)  
Member, CoC Faculty Recruiting Committee (1991/92-1992/93)  
Member, Graduate Committee, College of Computing (1991/92, 1992/93, 1993/94)  
Chairman, Computing Policy Committee (1991/92)  
Acting Director of Computer and Networking Systems (CNS)- June 1991 - October 1991.  
Graduate Assistantship Coordinator, Spring 1991 - Fall 1991.  
ICS and CoC representative to the General Faculty Assembly and the Faculty Senate (ELECTED) 1989-1994.  
ICS Director Advisory Committee -1987/88, 1989/90. (ELECTED)  
ICS Ph.D. General Exam Committee - Fall 1987, Spring 1988.  
ICS Director Search Committee - 1987/88.  
ICS Faculty Search Committee - 1986/87.  
Ad Hoc ICS Lab Committee - 1986/87.

### **C. Georgia Tech Committees**

Member GT RPT committee (2010-2012)  
Member College of Engineering Dean Search Committee (2010/2011)  
Member Georgia Tech Provost Search Committee (2009/2010)  
Member of Regents' Professor Selection Committee (2003/04, 2004/05, 2005/06, 2010/11)

Member of GT Academic Honor Committee (2002/03)

Member, Georgia Tech Executive Board (ELECTED) (September 1991 - August 1994)

Chair, Georgia Tech Nominations Committee (1993, 1994)

Member, Georgia Tech Nominations Committee (1992)