

Mohamed G. Gouda

Areas of Interest

Programming Methodology, Concurrent and Distributed Computing, Fault-tolerant Computing, Secure Computing, Network Protocols, Real-Time Protocols, Formal Methods.

Address

The University of Texas at Austin
Computer Science Department
Austin, Texas 78712-1757

Phone: (512) 554-2465
Fax: (512) 471-8885
email: gouda@cs.utexas.edu

Education

Cairo University, Cairo, Egypt

- B.S. in Engineering, 1968.
B.S. in Mathematics, 1971.

York University, Ontario, Canada

- M.A. in Mathematics, 1972.

University of Waterloo, Ontario, Canada

- M.Math. in Computer Science, 1973.
Ph.D. in Computer Science, 1977.

Professional Experience

*University of Texas at Austin
Department of Computer Sciences*

- Mike A. Myers Centennial Professor 1992–Present.
Associate Professor, 1986–1991.
Assistant Professor, 1980–1985.

National Science Foundation

- Lead Program Director of Computer System Research, 2009–2012

*Eindhoven University of Technology, The Netherlands
Department of Mathematics and Computing Science*

- Visiting Professor, 1990.

AT&T Bell Labs, Murray Hill, New Jersey

- Consultant, 1987–present.

Microelectronics and Computer Technology Corporation, Austin, Texas

- Consultant, 1986–1990.

Rockwell International Corporation, Science Center, Thousands Oaks, California

- Consultant, 1985–1987.

Honeywell Corporate Technology Center, Bloomington, Minnesota

- Principal Research Scientist, 1977–1980.

Awards

1. The 2009 Best Student Paper Award, The 28-th International Symposium on Reliable Distributed Systems (SRDS-09), 2009.
2. The 2006 Teaching Excellence Award, The College of Natural Sciences, The University of Texas at Austin, 2006.
3. The 2004 William C. Carter Award, IEEE Technical Committee on Fault-Tolerant Computing (TC-FTC) and IFIP Working Group on Dependable Computing and Fault Tolerance (WG 10.4), 2004.
4. Fellow of the IBM Center for Advanced Studies in Austin, Texas, 2002–2003.
5. The 2001 William R. Bennett Best Paper Award, IEEE Communication Society, for the paper “Secure Group Communications Using Key Graphs,” coauthored with C. K. Wong and S. S. Lam, published in the IEEE/ACM Transactions on Networking, Vol. 8, No. 1, pp. 16–30, February 2000.
6. IBM Faculty Partnership Award for the academic year 2001–2002.
7. IBM Faculty Partnership Award for the academic year 2000–2001.
8. The 1993 Kuwait Prize in Basic Sciences.

Editorships

1. Associate Editor, *International Journal of Cloud Computing*, published by Inderscience, 2011–present.
2. Associate Editor, *Network Sciences*, published by Springer, 2011–present.
3. Associate Editor, *Journal of High Speed Networks*, published by IOS Press, 2000–present.
4. Associate Editor, *Information Sciences*, published by North-Holland, 1995–1998.
5. Associate Editor, *Distributed Computing*, published by Springer-Verlag, 1989–2008.
6. Founding Editor-in-Chief, *Distributed Computing*, published by Springer-Verlag, 1985–1989.

7. Computer Networks Area Editor, *The Visual Computer: An International Journal on Computer Graphics*, published by Springer-Verlag, 1985–1989.

Conference Technical Committee Chair

1. *28th International Symposium on Distributed Computing (DISC)*, Conference Chair, 2014.
2. *14th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, Chair of the Cloud Computing Track, 2012.
3. *12th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, Chair of the Security Track, 2010.
4. *11th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, Chair of the System Safety and Security Track, 2009.
5. *16th IEEE International Conference on Network Protocols (ICNP)*, General Co-Chair, 2008.
6. *3rd International Computer Engineering Conference (ICENCO)*, Cairo University, 2007.
7. *27th IEEE International Conference on Distributed Computing Systems (ICDCS)*, Program Vice Chair, Network Protocols Track, 2007.
8. *2nd International Computer Engineering Conference (ICENCO)*, Cairo University, 2006.
9. *8th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, 2006.
10. *13th IEEE International Conference on Network Protocols (ICNP)*, 2005.
11. *1st International Engineering Conference (ICENCO)*, Cairo University, 2004.
12. *19th IEEE International Conference on Distributed Computing Systems (ICDCS)*, 1999.
13. *6th IEEE International Conference on Network Protocols (ICNP)*, 1998.
14. *The Joint Conference on Information Sciences*, 1997.
15. *1st IEEE International Symposium on Advances in Computers and Communications*, 1995.
16. *1st IEEE International Conference on Network Protocols (ICNP)*, 1993.
17. *ACM SIGCOMM Symposium (SIGCOMM)*, 1989.
18. Steering Committee Member, *International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, 1999-present.

19. Steering Committee Member, *IEEE International Conference on Network Protocols (ICNP)*, 1993-present.

Conference Technical Committee Member

1. *17th IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2008.
2. *12th International Conference on Principles of Distributed Systems (OPODIS)*, 2008.
3. *10th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, 2008.
4. *16th IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2007.
5. *10th International Conference on Distributed Computing Systems (ICDCS)*, 2006.
6. *8th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)*, 2006.
7. *2nd International Conference on Distributed Computing in Sensor Systems (DCOSS)*, 2006.
8. *9th International Conference on Principles of Distributed Systems (OPODIS)*, 2005.
9. *26th IEEE Real-Time System Symposium (RTSS)*, 2005.
10. *14th IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2005.
11. *12th IEEE International Conference on Network Protocols (ICNP)*, 2004.
12. *13th IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2004.
13. *2nd ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2004.
14. *12th IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2003.
15. *6th International Symposium on Self-Stabilizing Systems (SSS)*, 2003.
16. *11th IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2002.
17. *9th IEEE International Conference on Network Protocols (ICNP)*, 2001.
18. *5th Workshop on Self-Stabilizing Systems (WSS)*, 2001.
19. *10th IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2001.

20. *8th IEEE International Conference on Network Protocols (ICNP)*, 2000.
21. *7th IEEE International Conference on Network Protocols (ICNP)*, 1999.
22. *4th Workshop on Self-Stabilizing Systems (WSS)*, 1999.
23. *IFIP Symposium on Protocol Specification, Testing, and Verification (PSTV)*, 1997.
24. *3rd Workshop on Self-Stabilizing Systems (WSS)*, 1997.
25. *2nd Workshop on Self-Stabilizing Systems (WSS)*, 1995.
26. *3rd IEEE International Conference on Network Protocols (ICNP)*, 1995.
27. *8th IFIP International Conference on Formal Description Techniques (FDT)*, 1995.
28. *2nd IEEE International Conference on Network Protocols (ICNP)*, 1994.
29. *IFIP Symposium on Protocol Specification, Testing and Verification (PSTV)*, 1994.
30. *INFOCOM*, 1993.
31. *IEEE International Symposium on Global Data Networking*, 1993.
32. *6th International Conference on Parallel and Distributed Computing Systems*, 1993.
33. *IFIP Symposium on Protocol Specification, Testing and Verification (PSTV)*, 1990.
34. *2nd IFIP International Conference on Formal Description Techniques (FDT)*, 1989.
35. *ACM Symposium on Principles of Distributed Computing (PODC)*, 1989.
36. *1st Workshop on Self-Stabilizing Systems (WSS)*, 1989.
37. *IFIP Symposium on Protocol Specification, Testing, and Verification (PSTV)*, 1988.
38. *Lake Arrowhead Workshop: Formal Specifications in the year 2000*, 1987.
39. *IEEE International Conference on Distributed Computing Systems (ICDCS)*, 1984.

Fellowships and Grants

1. (With T. Herman, and A. Arora) *Grant from the National Science Foundation*, Collaborative Research: NeTS-NOSS State-Based Specifications for Controlling and Configuring Sensor Networks, September 2005–August 2008, \$750,000.
2. *Grant from the Texas Advanced Research Program*, “Federated Multicast in IP”, January 2002–January 2004, \$111,061.
3. *IBM Faculty Partnership Awards*, “Secure Network Protocols”, 2000–2006, \$90,000.
4. (with A. Arora, T. Herman, M. Nesterenko, and S. Kulkarni) *Contract from the Network Embedded Software Technology (NEST) Program in DARPA*, “Self-Stabilization in NEST,” June 2001–October 2005, \$2,426,500.

5. (with V. Garg) *Grant from the Texas Advanced Research Program*, “The Nereus Project: Registration and Verification of Secure Sessions on the Internet,” January 1998–January 2000, \$154,110.
6. (with D. Miranker) *Grant From the Texas Advanced Technology Program*, January 1992–January 1994, \$250,000.
7. (with J. C. Browne, A. Emerson, D. Miranker, A. Mok, and L. Rosier) *Office of Naval Research*, “Fault-Tolerant, Bounded-Time Parallel Structured Decision Processes”, April 1989–September 1991, \$403,000, N00014-89-J-1913.
8. *Endowed Faculty Fellowship #2*, Department of Computer Sciences, The University of Texas at Austin, 1987–1992, \$25,000.

Ph.D. Dissertations Supervised

1. Taehwan Choi, *Weak and Strong Authentication Protocols in Computer Networks*, December 2012; Member of Technical Staff, VMware, Palo Alto, California.
2. Hrishikesh B. Acharya, *On the Modular Verification and Design of Firewalls*, August 2012; Assistant Professor, Rochester Institute of Technology, Rochester, New York.
3. Yan Li, *Reliability and Security of Vector Routing Protocols*, May 2011; Member of Technical Staff, Oracle, Redwood City, California.
4. Young-ri Choi, *Design and Analysis of Stabilizing Sensor Network Protocols*, June 2007; Assistant Professor, Ulsan National Institute of Science and Technology (UNIST), Ulsan, South Korea.
5. Alex Liu, *A Theory for the Design and Analysis of Firewalls*, June 2006; Associate Professor, Michigan State University, East Lansing, Michigan.
6. Eunjin Jung, *Dispersal and Vulnerability Analysis of Certificate Systems*, June 2006; Assistant Professor, University of San Francisco, San Francisco, California.
7. Douglas H. Steves, *Contract in Electronic Commerce*, December 2005; IBM, Austin, Texas.
8. Tommy M. McGuire, *Correct Implementation of Network Protocols*, May 2004; IBM Research, Austin, Texas.
9. Chin-Tser Huang, *Hop Integrity: A Defense against Denial-of-Service Attacks*, August 2003; Associate Professor, The University of South Carolina, Columbia, South Carolina.
10. F. Furman Haddix, *Alternating Parallelism and the Stabilization of Distributed Systems*, May 1999; Assistant Professor, Texas State University, San Marcos, Texas.
11. Marco Schneider, *Flow Routing in Computer Networks*, May 1997; Technology Resources Inc, AT&T, Austin, Texas.

12. Amal Elnahas, *Flow Scheduling Protocols in High-Speed Networks*, December 1996; Professor, German University in Cairo, Cairo, Egypt.
13. Jorge A. Cobb, *Flow Theory and the Analysis of Real-Time Protocols*, May 1996; Associate Professor, The University of Texas at Dallas.
14. Sarah E. Chodrow, *The Sentry System: Observing Concurrent Programs in Execution*, August 1994; Lead Architect, ThinkSmart Performance Systems, LLC, Atlanta, Georgia.
15. Anish Arora, *A Foundation for Fault-Tolerant Computing*, August 1992; Full Professor, The Ohio State University.
16. Ted Herman, *Adaptive Programming*, August 1991; Associate Professor, University of Iowa.
17. James H. Anderson, *Atomicity of Concurrent Programs*, August 1990; Full Professor, University of North Carolina at Chapel Hill.
18. Ambuj K. Singh, *Ranking in Distributed Systems*, September 1989; Full Professor, The University of California at Santa Barbara.
19. Nicholas J. Multari, *Towards a Theory for Self-Stabilizing Protocols*, June 1989; Major in the Air Force.
20. Chung K. Chang, *Bedding and the Reliability of Distributed Systems*, July 1987; Associate Professor, University of Indiana.
21. Devendra Kumar, *Efficient Algorithms for Distributed Simulation and Related Problems*, December 1986; Associate Professor, City University of New York, City College.
22. Ching H. Chow, *A Discipline for Verification and Modular Construction of Communication Protocols*, November 1985; Full Professor, University of Colorado at Colorado Springs.
23. Hai Y. Hwang, *Database Integration and Query Optimization in Multi-database Systems*, October 1984; Bell Labs, Murray Hill, New Jersey.
24. Yao T. Yu, *Communicating Finite State Machines: Analysis and Synthesis of Communication Protocols*, January 1983; Bell Labs, Murray Hill, New Jersey.
25. Vincent Fernandes, *Transactions + Processes = Distributed Systems*, December 1982; Microsoft Corporation, Washington.

Master Theses Supervised

1. Aditya Joshi, *Modularizing Firewalls Using CUDA enabled GPUs*, August 2010; Software Engineer, Microsoft, Redmond, Washington.
2. Suhasini H. Ranganathan, *An Anti-Replay Protocol for Indefinite Security Associations in IPsec*, August 2008.

Honors Theses Supervised

1. Vasanth Elavarasan, *Email Filters that use Spammy Words Only*, May 2006, Currently at IBM in Houston, Texas.
2. Nancy Li, *Parameterized Firewall Templates: A New Approach to Firewall Design*, May 2005, Currently at IBM in Austin, Texas.
3. Aashin Gautam, *Stamping Out Spam*, May 2004, Currently at National Instruments in Austin, Texas.
4. Lydia Miller, *Security of the Grid Routing Protocol*, December 2003, Currently at IBM in Austin, Texas.
5. Dhiraj Bhagchandka, *Classification of Firewalls and Proxies*, August 2003; Currently Ph.D. student at Stanford University.
6. Muqtadar Ahmed, *Specification and Analysis of the Anonymity Ring*, December 2002; Currently in Austin, Texas.
7. Mohammad A. Alam, *Secure Passwords in the Internet*, December 2002; Currently a Master student at University of Texas at Austin.
8. Lok-Man (Raymond) Leung, *The Secure Password Protocol*, December 2002; Currently a Master student at Cornell University.
9. Chun He, *Analysis of Packet-Marking Protocols*, May 2002; Currently at IBM in Austin, Texas.
10. Delwin Lee, *Specification and Verification of Digital Cash Protocols*, May 2002; Currently at Microsoft, Redmond, Washington.
11. Pericles Leng Cheng, *Scheduling and Security for the Hypertext Transfer Protocol*, May 2001; Received a Master's degree from the University of Texas at Austin and returned to Cyprus.
12. Eric Li, *Anti-Replay Window Protocols for Secure IP*, December 1999; currently working for Windows Operating Systems Division in Microsoft, Redmond, Washington.
13. Lok Yan Leung, *Specification and Verification of the MicroMint Protocol*, December 1998; currently working for IBM Research, Austin, Texas.
14. Ali Lakhia, *Specification and Verification of the Payword Protocols*, August 1998; currently a Ph.D student in University of California at Berkeley.

Publications

Books

1. *Convergence of Computing Systems*, in progress 2012.

2. (with C.-T. Huang) *Hop Integrity in the Internet*, Advances in Information Security Series, Springer, 2006.
3. (with T. M. McGuire) *The Austin Protocol Compiler*, Advances in Information Security Series, Springer, 2005.
4. *Elements of Network Protocol Design*, John Wiley and Sons, 1998.

Book Chapters

1. (with M. Demirbas and A. Arora) “Chapter 9: Pursuer-evader Tracking in Sensor Networks,” in *Sensor Network Operations* (eds. S. Phoha, T. La Porta, and C. Griffin), Wiley-Interscience, 2006.
2. (with Y. Choi) “A State-based Model of Sensor Protocols,” in *Principles of Distributed Systems, Lecture Notes in Computer Science*, Springer-Verlag, 2006.
3. (with E. Jung) “Self-stabilizing Certificate Dispersal,” in *Self-Stabilizing Systems* (eds. T. Herman and S. Tixeuil), *Lecture Notes in Computer Science 3764*, pp. 140-152, Springer-Verlag, 2005.
4. (with Y. Choi and A. Arora) “Sentries and Sleepers in Sensor Networks,” in *Principles of Distributed Systems* (ed. T. Higashino), *Lecture Notes in Computer Science 3544*, pp. 384-399, Springer-Verlag, 2005.
5. (with A. Liu, H. Ma and A. Ngu) “Firewall Queries,” in *Principles of Distributed Systems* (ed. T. Higashino), *Lecture Notes in Computer Science 3544*, pp. 197-212, Springer-Verlag, 2005.
6. (with Y.-R. Choi and A. Arora) “Antireplay Protocols for Sensor Networks,” in *Handbook on Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless, and Peer-to-Peer Networks*, (ed. Jie Wu), CRC , 2005.
7. (with E. Jung and A. X. Liu) “A Key Bundles and Parcels: Secure Communication in Many Groups,” in *Lecture Notes in Computer Science 2816*, Springer, September 2003.
8. (with M. Demirbas and A. Arora) “A Pursuer-Evader Game for Sensor Networks”, in *Self-Stabilizing Systems*, (eds. S.-T. Huang and T. Herman), *Lecture Notes in Computer Science 2704*, pp. 1-16, Springer-Verlag, 2003.
9. (with J. A. Cobb and R. Musunuri) “A Stabilizing Solution to the Stable Path Problem”, in *Self-Stabilizing Systems*, (eds. S.-T. Huang and T. Herman), *Notes in Computer Science 2704*, pp. 169-183, Springer-Verlag, 2003.
10. (with J. A. Cobb) “Stabilization of Routing in Directed Networks,” in *Self-Stabilizing Systems*, (eds. A. Datta and T. Herman), *Lecture Notes in Computer Science 2194*, Springer-Verlag, pp. 51–66, 2001.

11. “The Theory of Weak Stabilization,” in *Self-Stabilizing Systems*, (eds. A. Datta and T. Herman), *Lecture Notes in Computer Science 2194*, Springer-Verlag, pp. 114–123, 2001.
12. (with C.-T. Huang and A. Arora) “On the Security and Vulnerability of PING,” in *Self-Stabilizing Systems*, (eds. A. Datta and T. Herman), *Lecture Notes in Computer Science 2194*, Springer-Verlag, pp. 124–135, 2001.
13. (with F. Haddix) “The Linear Alternator,” *Self-Stabilizing Systems*, (eds. S. Ghosh and T. Herman), Carleton University Press, pp. 31–47, 1997.
14. (with A. Arora) “Delay-Insensitive Stabilization,” *Self-Stabilizing Systems*, (eds. S. Ghosh and T. Herman), Carleton University Press, pp. 95–109, 1997.
15. “The Triumph and Tribulation of System Stabilization,” *Distributed Algorithms*, (eds. J. M. Helary and M. Raynal) *Lecture Notes in Computer Science 972*, Springer-Verlag, pp. 1–18, 1995.
16. “Stabilizing Client-Server Protocols without the Tears,” *Formal Description Techniques*, (ed. G. Bochmann), Chapman and Hall Publishers, 1995.
17. (with A. Arora and G. Vargahese) “Constraint Satisfaction as a Basis for Non-Masking Fault-Tolerance,” *Specification of Parallel Algorithms*, (eds. G. E. Blelloch, K. M. Chandy, and S. Jagannathan), DIMACS Series on Discrete Mathematics and Theoretical Computer Science, Vol. 18, American Mathematical Society, pp. 341–356, 1994.
18. “Serializable Programs, Parallelizable Assertions: A Basis for Interleaving,” *Beauty is our Business: A Birthday Salute to Edsger W. Dijkstra*, (eds. W. J. H. Feijen, A. J. M. van Gasteren, D. Gries, and J. Misra), Springer-Verlag, pp. 135–140, 1990.

Journal Articles

1. (with H. B. Acharya, T. Choi, R. A. Bazzi) “The K-Observer Problem in Computer Networks,” *Networking Science*, Vol. 1, No. 1, 2012.
2. (with A. X. Liu and J. M. Kovacs) “A Secure Cookie Scheme,” *Computer Networks*, Vol. 56, No. 6, pages 1723–1730, 2012.
3. (with Y. R. Choi) “A State-Based Model of Sensor Protocols,” *Theoretical Computer Science*, Vol. 458, pages 61–75, 2012.
4. (with T. Choi and H. B. Acharya) “Is That You? Authentication in a Network without Identities,” *International Journal of Security and Networks*, Vol. 6, No. 4, pages 181–190, 2011.
5. (with H. B. Acharya) “Nash Equilibria in Stabilizing Systems,” *Theoretical Computer Science*, Vol. 412, No. 33, pages 4325–4335, 2011.

6. (with J. A. Cobb) “Stabilization of Max-Min Fair Networks,” *Theoretical Computer Science*, Vol. 412, No. 40, pages 5562–5579, 2011.
7. (with M. Eltoweissy, D. Du, M. Gerla, S. Giordano, H. Schulzrinne, M. Youssef, and D. Towsley) “Guest Editorial,” *IEEE Journal on Selected Areas in Communications*, Vol. 28, No. 5, pages 625–629, 2010.
8. (with A. X. Liu) “Complete Redundancy Removal for Packet Classifiers in TCAMS,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 21, No. 4, pages 424–437, 2010.
9. (with Y. R. Choi and C. T. Huang) “Stabilization of Flood Sequencing Protocols in Sensor Networks,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 21, No. 7, pages 1042–1055, 2010.
10. (with R. Bazzi and Y. R. Choi) “Hop Chains: Secure Routing and the Establishment of Distinct Identities,” *Theoretical Computer Science*, Vol. 410, No. 6–7, pages 467–480, 2009.
11. (with A. X. Liu) “Firewall Policy Queries,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 20, No. 6, pages 766–777, 2009.
12. (with A. X. Liu) “Diverse Firewall Design,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 19, No. 9, pages 1237–1251, 2008.
13. (with E. S. Elmallah and S. S. Kulkarni) “Logarithmic Keying,” *ACM Transactions on Autonomous and Adaptive Systems*, Vol. 3, No. 4, 2008.
14. (with A. X. Liu) “Formal Specification and Verification of a Secure Micropayment Protocol,” *International Journal of Network Security*, Vol. 7, No. 1, pages 81–87, 2008.
15. (with M. H. Karaata) “A Stabilizing Deactivation/Reactivation Protocol,” *IEEE Transactions on Computers*, Vol. 56, No. 7, pages 881–888, 2007.
16. (with A. X. Liu, L. M. Leung, and M. A. Alam) “SPP: An Anti-phishing Single Password Protocol,” *Computer Networks*, Vol. 51, No. 13, pages 3715–3726, 2007.
17. (with F. F. Haddix) “The Alternator,” *Distributed Computing*, Vol. 20, No. 1, pages 21–28, 2007.
18. (with H. Zhang, Y. Choi, and A. Arora) “Reliable Bursty Convergecast in Wireless Sensor Network,” *Computer Communications*, Vol. 30, pages 2560–2576, 2007.
19. (with A. X. Liu) “Structured Firewall Design,” *Computer Networks*, Vol. 51, pp. 1106–1120, 2007.
20. (with E. Jung and E. S. Elmallah) “Optimal Dispersal of Certificate Chains,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 18, No. 4, pp. 474–484, April 2007.

21. (with E. Jung) “Stabilizing Certificate Dispersal,” *AIAA Journal of Aerospace Computing, Information, and Communication*, 2006.
22. (with E. Jung and E. S. Elmallah) “Optimal Dispersal of Certificate Chains,” *IEEE Transactions on Parallel and Distributed Systems*, 2006.
23. (with E. Jung and A. X. Liu) “Key Bundles and Parcels: Secure Communication in Many Groups,” *Computer Networks* Vol. 50, No. 11, 2006.
24. (with C.-T. Huang and E. N. Elnozahy) “Convergence of IPsec in Presence of Resets,” *Journal of High Speed Networks*, Vol. 15, No. 2, Pages 173–183, 2006.
25. (with Y. Choi, H. Zhang, and A. Arora) “Stabilization of Grid Routing in Sensor Networks,” *AIAA Journal of Aerospace Computing, Information, and Communication*, 2006.
26. “Guest Editorial: Self-Stabilizing Systems, Part 1,” *Special Issue of Journal of High Speed Networks on Self-Stabilizing Systems*, Part 1, Guest Editors: C. Johnen and M. G. Gouda, Vol. 14, No. 1, 2005.
27. “Guest Editorial: Self-Stabilizing Systems, Part 2,” *Special Issue of Journal of High Speed Networks on Self-Stabilizing Systems*, Part 2, Guest Editors: C. Johnen and M. G. Gouda, Vol. 14, No. 2, 2005.
28. (with S. Kulkarni, and A. Arora) “Secret Instantiation in Ad Hoc Networks,” *Special Issue of Elsevier Journal of Computer Communications on Dependable Wireless Sensor Networks*, 2005.
29. (with A. Arora, P. Dutta, S. Bapat, V. Kulathumani, H. Zhang, V. Naik, V. Mittal, H. Cao, M. Demirbas, Y.-R. Choi, T. Herman, S. Kulkarni, U. Arumugam, M. Nesterenko, A. Vora, and M. Miyashita) “A Line in the Sand: A Wireless Sensor Network for Target Detection, Classification, and Tracking,” *Computer Networks*, December 2004.
30. (with M. Schneider) “Maximizable Routing Metrics,” *IEEE/ACM Transactions on Networking*, Vol. 11, No. 4, pp. 663–675, August 2003.
31. (with C.-T. Huang) “A Secure Address Resolution Protocol,” *Computer Networks*, Vol. 41, No. 1, pp. 57–71, January 2003.
32. (with E. N. Elnozahy, C.-T. Huang, and T. M. McGuire) “Hop Integrity in Computer Networks,” *IEEE/ACM Transactions on Networking*, Vol. 10, No. 3, pp. 308–319, June 2002.
33. (with J. A. Cobb) “Stabilization of General Loop-Free Routing,” *Journal of Parallel and Distributed Computing*, Vol. 62, pp. 922–944, 2002.
34. “Multiphase Stabilization,” *IEEE Transactions on Software Engineering*, Vol. 28, No. 2, pp. 201–208, February 2002.

35. "Elements of Security: Closure, Convergence, and Protection," *Information Processing Letters*, Vol. 77, pp. 109–114, 2001.
36. (with T. M. McGuire) "Alert Communication Primitives above TCP," *Journal of High Speed Networks*, Vol. 9, No. 2, pp. 139–150, 2000.
37. (with C. K. Wong and S. S. Lam) "Secure Group Communications Using Key Graphs," *IEEE/ACM Transactions on Networking*, Vol. 8, No. 1, pp. 16–30, February 2000.
38. (with S. Dolev and M. Schneider) "Memory Requirements for Silent Stabilization," *Acta Informatica*, Vol. 36, pp. 447–462, 1999.
39. (with J. A. Cobb and A. Elnahas) "Time-Shift Scheduling: Fair Scheduling of Flows in High-Speed Networks," *IEEE/ACM Transactions on Networking*, Vol. 6, No. 3, pp. 274–285, June 1998.
40. (with J. A. Cobb) "Flow Theory," *IEEE/ACM Transactions on Networking*, Vol. 5, No. 5, pp. 661–674, October 1997.
41. (with D. H. Steves and C. Edmondson-Yurkanan) "Properties of Secure Transaction Protocols," *Computer Networks and ISDN*, Vol. 29, pp. 1809–1821, October 1997.
42. (with J. A. Cobb) "The Request-Reply Family of Group Routing Protocols," *IEEE Transactions on Computers*, Vol. 46, No. 6, pp. 659–672, June 1997.
43. "Network Protocols between Exact Specifications and Pragmatic Implementations," *ACM Computing Surveys*, Vol. 28A, No. 4, December 1996.
44. (with A. Arora and G. Vargahese) "Self-Stabilization by Tree Correction," *Chicago Journal of Theoretical Computer Science*, 1996.
45. (with A. Arora and G. Vargahese) "Constraint Satisfaction as a Basis for Designing Non-Masking Fault-Tolerance," *Journal of High-Speed Networks*, Vol. 5, No. 3, pp. 293–306, 1996.
46. (with F. Haddix) "The Stabilizing Token Ring in Three Bits," *Journal of Parallel and Distributed Computing*, Vol. 35, No. 1, pp. 43–48, May 1996.
47. (with H. M. Wahab) "Systems of Recall Broadcast," *Information Sciences*, Vol. 90, No. 1-4, pp. 1–18, 1996.
48. (with S. E. Chodrow) "Implementation of the Sentry System," *Software-Practice and Experience*, Vol. 25, No. 4, pp. 373–387, April 1995.
49. (with A. N. Netravali and K. Sabnani) "A Periodic State Exchange Protocol and its Verification," *IEEE Transactions on Communications*, Vol. 43, No. 9, pp. 2475–2484, September 1995.
50. "Stabilizing Observers," *Information Processing Letters*, Vol. 57, pp. 99–103, 1994.

51. (with A. Arora) "Distributed Reset," *IEEE Transactions on Computers*, Vol. 43, No. 9, pp. 1026–1038, September 1994.
52. (with A. K. Singh) "Rankers: A Classification of Synchronization Problems," *Science of Computing Programming*, 1994.
53. (with J. H. Anderson and A. K. Singh) "The Elusive Atomic Register," *JACM*, Vol. 41, No. 2, pp. 311–339, March 1994.
54. "Protocol Veification Made Simple," *Computer Networks and ISDN Systems*, Vol. 25, pp. 969–980, 1993.
55. (with A. Arora) "Closure and Convergence: A Foundation for Fault-Tolerant Computing," *IEEE Transactions on Software Engineering*, Special Issue on Software Reliability, Vol. 19, No. 3, pp. 1015–1027, November 1993.
56. (with J. E. Burns and R. E. Miller) "Stabilization and Pseudostabilization," *Distributed Computing*, Special Issue on Self-Stabilization, Vol. 7, No. 1, pp. 35–42, November 1993.
57. (with A. Arora, P. Attie, and M. Evangelist) "Convergence of Iteration Systems," *Distributed Computing*, Special Issue on Self-Stabilization, Vol. 7, No. 1, pp. 43–53, November 1993.
58. (with J. Anderson) "A Criterion for Atomicity," *Formal Aspects of Computing: The International Journal of Formal Methods*, Vol. 4, No. 3, pp. 273–298, May 1992.
59. (with A. Arora and S. Dolev) "Maintaining Digital Clocks in Step," *Parallel Processing Letters*, Vol. 1, No. 1, pp. 11–18, September 1991.
60. (with T. Herman) "Adaptive Programming," *IEEE Transactions on Software Engineering*, Vol. 17, No. 9, pp. 911–921, September 1991.
61. (with N. Multari) "Stabilizing Communication Protocols," *IEEE Transactions on Computers*, Special Issue on Protocol Engineering, Vol. 40, No. 4, pp. 448–458, April 1991.
62. (with G. M. Brown and R. E. Miller) "Block Acknowledgement: Redesigning the Window Protocol," *IEEE Transactions on Communications*, Vol. 39, No. 4, pp. 524–532, April 1991.
63. (with J. H. Anderson) "A New Explanation of the Glitch Phenomenon," *Acta Informatica*, Vol. 28, pp. 297–309, 1991.
64. (with C. K. Chang) "On the Minimum Requirements for Independent Recovery in Distributed Systems," *Information Processing Letters*, Vol. 37, pp. 1–7, 1991.
65. (with R. R. Howell and L. E. Rosier) "The Instability of Self-Stabilization," *Acta Informatica*, Vol. 27, pp. 697–724, 1990.

66. (with J. C. Browne, A. Emerson, D. Miranker, A. Mok, and L. Rosier) "Bounded-Time Fault-Tolerant Rule-Based Systems," *Telematics and Informatics*, Vol. 7, Nos. 3–4, pp. 441–454, 1990.
67. (with T. Herman) "Stabilizing Unision," *Information Processing Letters*, Vol. 35, pp. 171–175, 1990.
68. (with G. M. Brown and C. L. Wu) "Token Systems that Self-Stabilize," *IEEE Transactions on Computers*, Vol. 38, No. 6, pp. 845–852, June 1989.
69. (with J. H. Anderson) "Atomic Semantics of Non-atomic Programs," *Information Processing Letters*, Vol. 28, pp. 99–103, 1988.
70. (with E. M. Gurari, T. H. Lai, and L. E. Rosier) "On Deadlock Detection in Systems of Communicating Finite State Machines," *Computers and Artificial Intelligence*, Vol. 6, No. 3, pp. 209–228, 1987.
71. (with C. K. Chang) "Proving Liveness for Networks of Communicating Finite State Machines," *ACM Transactions on Programming Languages and Systems*, pp. 154–182, January 1986.
72. (with C. H. Chow and S. S. Lam) "A Discipline for Constructing Multiphase Communication Protocols," *ACM Transactions on Computing Systems*, pp. 315–343, November 1985.
73. (with H. S. Lee) "Proving Liveness and Termination of Systolic Arrays Using Communicating Finite State Machines," *IEEE Transactions on Software Engineering*, Vol. SE-11, No. 10, pp. 1240–1251, October 1985.
74. (with L. E. Rosier) "Priority Networks of Communicating Finite State Machines," *SIAM Journal on Computing*, Vol. 14, No. 3, pp. 569–584, August 1985.
75. (with J. Y. Han) "Protocol Validation by Fair Progress State Exploration," *Computer Networks*, Vol. 9, No. 5, pp. 353–362, May 1985.
76. "On a Simple Protocol Whose Proof Is Not: The State Machine Approach," *IEEE Transactions on Communication*, Vol. COM-33, No. 4, pp. 380–382, April 1985.
77. (with E. G. Manning and Y. T. Yu) "On the Progress of Communication between Two Finite State Machines," *Informations and Control*, Vol. 63, No. 3, December 1984.
78. "Closed Covers: To Verify Progress for Communicating Finite State Machines," *IEEE Transactions on Software Engineering*, Vol. SE-10, No. 6, pp. 846–855, November 1984.
79. (with Y. T. Yu) "Synthesis of Communicating Finite State Machines with Guaranteed Progress," *IEEE Transactions on Communications*, Vol. COM-32, No. 7, pp. 779–788, July 1984.

80. (with Y. T. Yu) "Protocol Validation by Maximal Progress State Exploration," *IEEE Transactions on Communications*, Vol. COM-32, No. 1, pp. 94–97, January 1984.
81. (with Y. T. Yu) "Unboundedness Detection for a Class of Communicating Finite Machines," *Information Processing Letters*, Vol. 17, pp. 235–240, December 1983.
82. (with Y. T. Yu) "Deadlock Detection for a Class of Communicating Finite State Machines," *IEEE Transactions on Communications*, Vol. COM-30, No. 12, pp. 2514–2518, December 1982.

Conference Papers

1. (With T. Choi and H. B. Acharya) “Is That You? Authentication in a Network without Identities,” in *Proceedings of the 54-th IEEE Global Communications Conference (GLOBECOM-11)*, 2011.
2. (With T. Choi and H. B. Acharya) “TPP: The Two-Way Password Protocol,” in *Proceedings of the 20-th International Conference on Computer Communications and Networks Conference (ICCCN-11)*, 2011.
3. (With T. Choi) “HTTPI: An HTTP with Integrity,” in *Proceedings of the 1-st Workshop on Privacy, Security, and Trust in Mobile and Wireless Systems (MobiPST-11)*, 2011.
4. (With H. B. Acharya) “On the Hardness of Topology Inference,” in *Proceedings of the 12-th International Conference on Distributed Computing and Networking (ICDCN-11)*, 2011.
5. (With H. B. Acharya) “Firewall Verification and Redundancy Checking Are Equivalent,” in *Proceedings of the 30-th IEEE International Conference on Computer Communications (INFOCOM-11)*, 2011.
6. (With H. B. Acharya) “Brief Announcement: RedRem: A Parallel Redundancy Removal,” in *Proceedings of the 23-rd ACM Symposium on Parallelism in Algorithms and Architectures (SPAA-11)*, 2011.
7. (With H. B. Acharya, T. Choi, and R. A. Bazzi) “The K-Observer Problem in Computer Networks,” in *Proceedings of the 13-th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-11)*, 2011.
8. (With H. B. Acharya and A. K. Katti) “Brief Announcement: A Conjecture on Traceability, and a New Class of Traceable Networks,” in *Proceedings of the 13-th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-11)*, 2011.
9. (With H. B. Acharya and T. Choi) “The Best Keying Protocol for Sensor Networks,” in *Proceedings of the 2-nd IEEE International Workshop on Data Security and Privacy in Wireless Networks (D-SPAN-11)*, 2011.
10. (With H. B. Acharya) “The Weak Network Tracing Problem,” in *Proceedings of the 11-th International Conference on Distributed Computing and Networking (ICDCN-10)*, 2010.
11. (With H. B. Acharya) “Projection and Division: Linear Space Verification of Firewalls,” in *Proceedings of the 30-th International Conference on Distributed Computing Systems (ICDCS-10)*, 2010.
12. (With H. B. Acharya and A. Joshi) “Firewall Modules and Modular Firewalls,” in *Proceedings of the 18-th IEEE International Conference on Network Protocols (ICNP-10)*, 2010.

13. (With Y. Li) "IP Fast Reroute in Networks with Shared Risk Links," in *Proceedings of the 9-th International IFIP TC 6 Networking Conference (NETWORKING-10)*, 2010.
14. (With H. B. Acharya) "Brief Announcement: On the Hardness of Topology Inference," in *Proceedings of the 12-th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-10)*, 2010.
15. (With H. B. Acharya) "On the Power of Non-Spoofing Adversaries," in *Proceedings of the 24-th International Symposium on Distributed Computing Stabilization, Safety, and Security of Distributed Systems (DISC-10)*, 2010.
16. (With Y. Li) "Balanced Peer Lists: Towards Collusion-Free BGP," in *Proceedings of the 18-th International Conference on Computer Communications and Networks Conference (ICCCN-09)*, 2009.
17. (With H. B. Acharya) "Linear Time Verification of Firewalls," in *Proceedings of the 17-th IEEE International Conference on Network Protocols (ICNP-09)*, 2009.
18. (With H. B. Acharya and E. S. Elmallah) "Consistent Fixed Points and Negative Gain," in *Proceedings of the 10-th International Conference on Parallel and Distributed Computing, Applications, and Technologies Network Protocols (PDCAT-09)*, 2009.
19. (With H. B. Acharya) "Brief Announcemenet: The Thoery of Network Tracing," in *Proceedings of the 28-th ACM Symposium on Principles of Distributed Computing (PODC-09)*, 2009.
20. (With Y. Li) "The Blocking Option in Routing Protocols," in *Proceedings of the 28-th International Symposium on Reliable Distributed Systems (SRDS-09)*, 2009.
21. (With H. B. Acharya) "A Theory of Network Tracing," in *Proceedings of the 11-th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-09)*, 2009.
22. (With H. B. Acharya) "Nash Equilibria in Stabilizing Systems," in *Proceedings of the 11-th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-109)*, 2009.
23. (With H. B. Acharya and E. S. Elmallah) "Brief Announcemenet: Consistent Fixed Points and Negative Gain," in *Proceedings of the 11-th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-09)*, 2009.
24. (With A. X. Liu and M. Jafry) "Verifification of Distributed Firewalls," in *Proceedings of the 51-th IEEE Global Communications Conference (GLOBECOM-08)*, 2008.
25. (With Y. Li) "Sources and Monitors: A Trust Model for Peer-to-Peer Networks," in *Proceedings of the 17th IEEE International Conference on Computer Communicati ons and Networks (ICCCN-08)*, 2008.

26. (With A. Dalton, W. McCartney, K. GhoshDastidar, J. Hallstrom, N. Sridhar, T. Herman, W. Leal, and A. Arora) “DESALa: An Implementation of the Dynamic Embedded Sensor-Actuator Language,” in *Proceedings of the 17th IEEE International Conference on Computer Communications and Networks (ICCCN-08)*, 2008.
27. (With A. Liu, and M. Jaffrey) “Verification of Distributed Firewalls”, in *Proceedings of the IEEE Globalcom-08, Computer and Communications Network Security Symposium*, 2008.
28. (With T. Choi, S. Son, and J. Cobb) “Pharewell to Phishing,” in *10th International Symposium on Stabilization, Safety, and Security of Distributed Systems(SSS 2008)*, 2008.
29. (With J. A. Cobb) “Stabilization of Max-Min Fair Networks without Per-Flow State,” in *10th International Symposium on Stabilization, Safety, and Security of Distributed Systems(SSS 2008)*, 2008.
30. (With Y. R. Choi) “Stabilization of Flood Sequencing Protocols in Sensor Networks,” in *9th International Symposium on Stabilization, Safety, and Security of Distributed Systems(SSS 2007)*, 2007.
31. (With Y. Li) “The Truth System: Can a System of Lying Processes Stabilize?,” in *9th International Symposium on Stabilization, Safety, and Security of Distributed Systems(SSS 2007)*, 2007.
32. (With E. Wong, P. Balasubramanian, L. Alvisi, and V. Shmatikov) “Truth in advertising: Lightweight verification of route integrity,” in *Proceedings of the 26th ACM Annual Symposium on the Principles of Distributed Computing (PODC 2007)*, 2007.
33. (With A. Arora, J. Hallstrom, T. Herman, W. Leal, and N. Sridhar) “A State-Based Language for Sensor-Actuator Networks,” in *Proceedings of the International Workshop on Wireless Sensor Network Architecture (WWSNA-07)*, 2007.
34. (With R. Bazzi and Y. Choi) “Hop Chains: Secure Routing and the Establishment of Distinct Identities,” in *Proceedings of the 10th International Conference on Principles of Distributed Systems (OPODIS-06)*, 2006.
35. (With E. Jung) “Rating Certificates,” in *Proceedings of the 15th IEEE International Conference on Computer Communications and Networks (ICCCN-06)*, 2006.
36. (With S. Kulkarni and E. Elmallah) “Logarithmic Keying of Communication Networks,” in *Proceedings of the 8th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-06)*, 2006.
37. (With J. Cobb and C. Huang) “Fault Masking in Tri-redundant Systems,” in *Proceedings of the 8th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS-06)*, 2006.

38. (With A. Aiyer and L. Alvisi) “Key Grids: A Protocol Family for Assigning Symmetric Keys,” in *Proceedings of the 14th IEEE International Conference on Network Protocols (ICNP-06)*, 2006.
39. (With Y. Choi) “A State-based Model of Sensor Protocols,” in *Proceedings of the 9th International Conference on Principles of Distributed Systems (OPODIS-05)*, 2005.
40. (With E. Jung) “Self-stabilizing Certificate Dispersal,” in *Proceedings of the 7th Symposium on Self Stabilizing Systems (SSS-05)*, 2005.
41. (With A. Liu, J. Kovacs, and C.-T. Haung) “A Secure Cookie Protocol,” in *Proceedings of the 14th IEEE International Conference on Computer Communications and Networks (ICCCN-05)*, 2005.
42. (With A. Arora et al.) “ExScal: Elements of an Extrem Scale Wireless Sensor Network,” in *Proceedings of 1th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA 2005)*, 2005.
43. (With A. Liu) “Complete Redundancy Detection in Firewalls”, in *Proceedings of 19th Annual IFIP WG 11.3 Working Conference on Data and Applications Security*, 2005.
44. (With A. Liu) “Single Password, Multiple Accounts”, in *Proceedings of the 3rd Applied Cryptography and Network Security Conference (industry track)*, 2005
45. (With B. Kuipers, A. Liu, and A. Gautam) “Zmail: Zero-Sum Free Market Control of Spam”, in *Proceedings of the 4th International Workshop on Assurance in Distributed Systems and Networks (ADSN-05)*, 2005.
46. (With A. Liu) “A Model of Stateful Firewalls and its Properties”, in *Proceedings of the IEEE International Conference on Dependable Systems and Networks (DSN-05)*, 2005.
47. (With H. Zhang, A. Arora, and Y. Choi) “Reliable Bursty Convergecast in Wireless Sensor Networks”, in *Proceedings of the 6th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc 2005)*, 2005.
48. (With A. Liu, H. Ma, and A. Ngu) “Firewall Queries”, in *Proceedings of the 8th International Conference on Principles of Distributed Systems (OPODIS 2004)*, 2004.
49. (With Y. Choi and A. Arora) “Sentries and Sleepers in Sensor Networks”, in *Proceedings of the 8th International Conference on Principles of Distributed Systems (OPODIS 2004)*, 2004.
50. (With E. Jung and E. Elmallah) “Optimal Dispersal of Special Certificate Graphs”, in *Proceedings of the IEEE Global Telecommunications Conference (Globecom 04)*, 2004.
51. (With E. Jung and E. Elmallah) “Optimal Dispersal of Certificate Chains”, in *Proceedings of the 18th International Symposium on Distributed Computing (DISC 04)*, 2004.

52. (With A. X. Liu) “Formal Specification and Verification of a Micropayment Protocol”, in *Proceedings of the 13th IEEE International Conference on Computer Communications and Networks (ICCCN-04)*, 2004.
53. (With A. X. Liu) “Diverse Firewall Design”, in *Proceedings of the IEEE International Conference on Dependable Systems and Networks (DSN-04)*, 2004.
54. (With S. Kulkarni and A. Arora) “Security Instantiation for Mobile Networks”, in *Proceedings of the Workshop on Dependability Issues in Wireless Ad Hoc Networks and Sensor Networks (DIWANS)*, 2004.
55. (With A. X. Liu) “Firewall Design: Consistency, Completeness and Compactness”, in *Proceedings of the 24th IEEE International Conference on Distributed Computing Systems (ICDCS-04)*, 2004.
56. (With E. Jung) “Certificate Dispersal in Ad-Hoc Networks”, in *Proceedings of the 24th IEEE International Conference on Distributed Computing Systems (ICDCS-04)*, 2004.
57. (with M. Demirbas and A. Arora) “A Pursuer-Evader Game for Sensor Networks”, in *Proceedings of the International Symposium on Self-Stabilizing Systems*, 2003. Also published as *Lecture Notes in Computer Science 2704*, Shing-Tsuan Huang and Ted Herman (Eds.), pp. 1-16, Springer-Verlag, Berlin Heidelberg, 2003.
58. (with J. A. Cobb and R. Musunuri) “A Stabilizing Solution to the Stable Path Problem”, in *Proceedings of the International Symposium on Self-Stabilizing Systems*, 2003. Also published as *Lecture Notes in Computer Science 2704*, Shing-Tsuan Huang and Ted Herman (Eds.), pp. 169-183, Springer-Verlag, Berlin Heidelberg, 2003.
59. (with Y.-R. Choi, M. C. Kim and A. Arora) “The Mote Connectivity Protocol”, in *Proceedings of the International Conference on Computer Communication and Networks (ICCCN-03)*, 2003.
60. (with E. Jung and X.-Y. Alex Liu), “Key Bundles and Parcels: Secure Communication in Many Groups”, in *Proceedings of the International Workshop on Networked Group Communications (NGC-03)*, 2003.
61. (with V. Naik, A. Arora and S. Bapat) “Whisper: A Local Secret Maintenance Protocol”, in *Proceedings of the Workshop on Principles of Dependable Systems (PoDSy-03)*, 2003.
62. (with C.-T. Huang and E. N. Elnozahy) “Convergence of IPsec in Presence of Resets”, in *Proceedings of the 2nd International Workshop on Assurance in Distributed Systems and Networks*, Providence, Rhode Island, May 2003.
63. (with C.-T. Huang and E. N. Elnozahy) “Key Trees and the Security of Interval Multicast,” *Proceedings of the IEEE International Conference on Distributed Computing Systems*, 2002.

64. (with C.-T. Huang) "An Anti-Replay Window Protocol with Controlled Shift," *Proceedings of the IEEE International Conference on Computer Communications and Networks*, 2001.
65. "The Theory of Weak Stabilization," *Proceedings of the Workshop on Self-Stabilizing Systems*, Springer-Verlag Lecture Notes in Computer Science, 2001.
66. (with J. A. Cobb) "Stabilization of Routing in Directed Networks," *Proceedings of the Workshop on Self-Stabilizing Systems*, Springer-Verlag Lecture Notes in Computer Science, 2001.
67. (with C.-T. Huang and A. Arora) "On the Security and Vulnerability of PING," *Proceedings of the Workshop on Self-Stabilizing Systems*, Springer-Verlag Lecture Notes in Computer Science, 2001.
68. (with X. Li, Y. Yang, and S. Lam) "Batch Rekeying for Secure Group Communications," *Proceedings of Tenth International World Wide Web Conference*, 2001.
69. (with E. N. Elnozahy, C.-T. Huang, and T. M. McGuire) "Hop Integrity in Computer Networks," *Proceedings of the IEEE International Conference on Network Protocols*, 2000.
70. (with C.-T. Huang and E. Li) "Anti-Replay Window Protocols for Secure IP," *Proceedings of the IEEE International Conference on Computer Communications and Networks*, 2000.
71. (with F. Haddix) "The Alternator," *Proceedings of the Workshop on Self-Stabilizing Systems*, IEEE Computer Society, 1999.
72. (with M. Schneider) "Stabilization of Maximal Metric Trees," in *Proceedings of the Workshop on Self-Stabilizing Systems*, IEEE Computer Society, 1999.
73. (with M. Schneider) "Maximizable Routing Metrics," *Proceedings of the IEEE International Conference on Network Protocols*, 1998.
74. (with T. M. McGuire) "Accelerated Heartbeat Protocols," *Proceedings of the IEEE International Conference on Distributed Computing Systems*, 1998.
75. (with C. K. Wong and S. S. Lam) "Secure Group Communications Using Key Graphs," *Proceedings of the ACM SIGCOMM Conference*, 1998.
76. (with M. Schneider) "Maximizable Routing Metrics," *Proceedings of the IEEE International Conference on Network Protocols*, 1998.
77. (with D. H. Steves and C. Edmondson-Yurkanan) "Properties of Secure Transaction Protocols," *Proceedings of the Joint European Networking Conference*, 1997.
78. (with S. Dolev and M. Schneider) "Memory Requirements for Silent Stabilization," *Proceedings of the ACM Symposium on Principles of Distributed Computing*, 1996.

79. (with J. A. Cobb) "Group Routing without Group Routing Tables," *Proceedings of the IEEE International Conference on Distributed Computing Systems*, pp. 344–351, 1996.
80. (with S. Chodrow) "Sentries for the Execution of Concurrent Programs," *Proceedings of the IEEE International Conference on Distributed Computing Systems*, pp. 11–18, 1996.
81. (with D. H. Steves and C. Edmondson-Yurkanan) "A Protocol for Secure Transactions," *Proceedings of the USENIX Workshop on Electronic Commerce*, 1996.
82. (with J. A. Cobb) "Ordered Delivery over One Way Virtual Circuits," *Proceedings of the IEEE Symposium on Advances in Computers and Communications*, 1995.
83. (with M. Schneider) "Maximum Flow Routing," *Proceedings of the Workshop on Self-Stabilizing Systems*, 1995.
84. (with A. Arora and G. Vargahese) "Self-Stabilization by Tree Correction," *Proceedings of the Workshop on Self-Stabilizing Systems*, 1995.
85. (with J. A. Cobb and A. Elnahas) "Flow Timestamps," *Proceedings of the Joint Conference on Information Sciences*, 1995.
86. (with J. A. Cobb and P. Agrawal) "Protocol Synchronization with Sparse Timestamps," *Proceedings of the IFIP Symposium on Protocol Specification, Testing, and Verification*, Chapman and Hall, pp. 169–184, 1994.
87. (with H. Abdel-Wahab) "Recall Broadcast," *Proceedings of the IEEE Global Data Networks*, 1993.
88. (with J. A. Cobb) "Flow Theory: Verification of Rate-Reservation Protocols," *Proceedings of the IEEE International Conference on Network Protocols*, 1993.
89. "The Two Dimensional Window Protocol," *Proceedings of the IFIP Symposium on Protocol Specification, Testing, and Verification XII*, published as IFIP Transactions, North-Holland, pp. 365–379, 1992.
90. (with A. Arora) "Closure and Convergence: A Formulation of Fault-Tolerant Computing," *Proceedings of the 22nd International Symposium on Fault-Tolerant Computing Systems*, pp. 396–403, 1992.
91. (with M. Abadir) "The Stabilizing Computer," *Proceedings of the International Conference on Parallel and Distributed Systems*, Taiwan, pp. 90–96, 1992.
92. (with J. Anderson and J. Yang) "The Granularity of Waiting," *Proceedings of the Sixth International Workshop on Distributed Algorithms*, published as Lecture Notes on Computer Science, Springer-Verlag, 1992.
93. (with J. Couvreur and N. Francez) "Asynchronous Unison," *Proceedings of the 12th International Conference on Distributed Computing Systems*, Tokyo, pp. 486–493, 1992.

94. (with S. Chodrow) "The Sentry System," *Proceedings of the 11th Symposium on Reliable Distributed Systems*, pp. 230-237, 1992.
95. (with A. Arora and S. Dolev) "Maintaining Digital Clocks in Step," *Proceedings of the Fifth International Workshop on Distributed Algorithms*, published as Lecture Notes on Computer Science, Springer-Verlag, 1991.
96. (with A. Arora and T. Herman) "Composite Routing Protocols," *Proceedings of the Second IEEE Symposium on Parallel and Distributed Processing*, December 1990.
97. (with M. Evangelist) "Convergence/Response Tradeoffs in Concurrent Systems," *Proceedings of the Second IEEE Symposium on Parallel and Distributed Processing*, December 1990.
98. (with A. Arora) "Distributed Reset," *Proceedings of the Tenth Conference on Foundations of Software Technology and Theoretical Computer Science*, LNCS 472, Springer-Verlag, December 1990.
99. (with A. Arora, P. Attie, and M. Evangelist) "Convergence of Iteration Systems," *Proceedings of Concur '90: Theories of Concurrency*, LNCS 458, Springer-Verlag, August 1990.
100. (with G. M. Brown and R. E. Miller) "Block Acknowledgment: Redesigning the Window Protocol," *Proceedings of the ACM SIGCOMM Symposium*, 1989.
101. (with R. Howell and L. E. Rosier) "System Simulation and the Sensitivity of Self-Stabilization," *Proceedings of the International Symposium on Mathematical Foundations of Computer Science*, 1989.
102. "Inevitable Properties of Programs," *Proceedings of the First Workshop on Automatic Verification Methods for Finite State Systems*, Grenoble, France, 1989.
103. (with N. Maxemchuck, U. Mukherji, and K. Sabani) "Delivery and Discrimination: The Seine Protocol," *Proceedings of the ACM SIGCOMM Symposium*, 1988.
104. (with J. H. Anderson and A. K. Singh) "The Elusive Atomic Register Revisited," *Proceedings of the Sixth ACM Symposium on Principles of Distributed Computing*, August 1987.
105. (with A. R. K. Sastry) "Broadcasting Finite State Machines," *Proceedings of the IEEE INFOCOM Conference*, 1986.
106. (with L. E. Rosier, H. C. Yen) "A Theory of Closed Covers: To Decide Progress of Communicating Finite State Machines," *Proceedings of the Twenty-Third Annual Allerton Conference on Communication, Control, and Computing*, 1985.
107. (with K. S. The) "Modeling Physical Layer Protocols Using Communicating Finite State Machines," *Proceedings of the Ninth Data Communications Symposium*, September 1985.

108. (with M. Molloy) "Modeling and Analysis of LAN Protocols Using Labeled Petrinets," *Proceedings of the Sixth Workshop on Applications and Theory of Petrinets*, Springer-Verlag, LCNS, 1985.
109. (with C. K. Chang and L. E. Rosier) "Deciding Liveness for Special Classes of Communicating Finite State Machines," *Proceedings of the Twenty Second Annual Allerton Conference*, September 1984.
110. (with C. K. Chang) "A Technique for Proving Liveness of Communicating Finite State Machines," *Proceedings of the Third ACM Symposium on Principles of Distributed Computing*, August 1984.
111. (with L. E. Rosier) "Communicating Finite State Machines with Priority Channels," *Proceedings of the Eleventh International Colloquium on Automata, Languages, and Programming (ICALP)*, July 1984.
112. (with C. H. Chow and S. S. Lam) "On Constructing Multiphase Communication Protocols," *Proceedings of the Fourth IFIP Workshop on Protocol Specification, Testing, and Verification*, North-Holland, 1984.
113. (with C. H. Chow and S. S. Lam) "On the undecidability of detecting Livelocks in Networks of Communicating Finite State Machines," *Proceedings of the Fourth IFIP Workshop on Protocol Specification Testing and Verification*, pp. 47–56, North-Holland, 1984.
114. (with C. H. Chow and S. S. Lam) "An Exercise in Constructing Multiphase Communication Protocols," *Proceedings of the ACM SIGCOMM Symposium*, pp. 42–47, June 1984.
115. (with H. Y. Hwang and U. Dayal) "Using Semiouterjoins to Process Queries in Multi-database Systems," *Proceedings of the Symposium on Principles of Database Systems*, pp. 153–162, April 1984.
116. (with L. E. Rosier) "Deciding Progress for a Class of Communicating Finite State Machines," *Proceedings of the Eighteenth Annual Conference on Information Sciences and Systems*, Princeton University, pp. 663–667, March 1984.
117. "An Example for Constructing Communicating Machines by Step-Wise Refinement," *Proceedings of the Third IFIP Workshop on Protocol Specification Testing and Verification*, pp. 63–76, North-Holland, 1983.
118. (with Y. T. Yu) "Maximal Progress State Exploration," *Proceedings of the ACM SIGCOMM Symposium*, pp. 68–75, March 1983.
119. (with Y. T. Yu) "Deadlock Detection for a Class of Communicating Finite State Machines," *Proceedings of the Second IFIP Workshop on Protocol Specification Testing and Verification*, p. 319, North-Holland, 1982.

120. (with U. Dayal) “Optimal Semijoin Schedules for Query Processing in Local Distributed Database Systems,” *Proceedings of the ACM SIGMOD Conference*, May 1981.
121. (with Y. T. Yu) “A Methodology for Designing Deadlock-Free and Bounded Protocols,” *Proceedings of the First IFIP Workshop on Protocol Specification Testing and Verification*, 1981.
122. “Analysis of Realtime Control Systems by the Model of Packet Nets,” *Proceedings of the National Computer Conference*, pp. 469–479, 1979.