CURRICULUM VITAE FOR DR. FARNAM JAHANIAN

President
Henry L. Hillman President's Chair
Carnegie Mellon University
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EDUCATION

UNIVERSITY OF TEXAS AT AUSTIN
Doctor of Philosophy degree in Computer Science, 1989.
Master of Science in Computer Science, Minor in Electrical Engineering, 1987.

UNIVERSITY OF TEXAS AT SAN ANTONIO
Bachelor of Science in Mathematics, Computer Science, and System Design (Summa cum Laude),1982.

EMPLOYMENT

CARNEGIE MELLON UNIVERSITY
President (March 2018 - present)
Interim President (July 2017 - February 2018)
Provost and Chief Academic Officer (May 2015 - June 2017)
Vice President for Research (August 2014 - April 2015)
Professor - School of Computer Science, College of Engineering, H. John Heinz III College of Information Systems and Public Policy (2014 - present)

NATIONAL SCIENCE FOUNDATION
Assistant Director for Computer and Information Science and Engineering (2011 - 2014)

UNIVERSITY OF MICHIGAN
Edward S. Davidson Collegiate Professor of EECS (2001- 2014)
Chair, Computer Science and Engineering (2007 - 2011)
Director, Software Systems Research Lab (1997 - 2000)
Associate Professor, EECS Department (1995 - 2001)
Assistant Professor, EECS Department (1993 - 1995)

ARBOR NETWORKS
Chairman of the Board (2004 - 2010)
President and Chief Scientist (2000 - 2004, on leave from University of Michigan)

IBM T.J. WATSON RESEARCH CENTER
Senior Manager, Research Division (1991 - 1993)
Research Staff Member (1989 - 1991)

PROFESSIONAL AFFILIATIONS

Active Appointments: Board Memberships and Advisory Committees

- Alfred P. Sloan Foundation, Board of Trustees, 2025 - present.
- Association of American Universities, Board of Directors, 2024 - present.
- World Economic Forum, Global University Leaders Forum (Vice-Chair) and Council on the Connected World, 2019 - present.
- Highmark Health, Board of Directors, 2021 - present.
- Southwestern Pennsylvania New Economy Collaborative, 2021 - present.
- U.S. Council on Competitiveness, Executive Committee, 2017 - present.
- Dietrich Foundation, Board of Trustees, 2017 - present.
- Pittsburgh Symphony Orchestra, Board of Directors, 2017 - present.
- Allegheny Conference on Community Development, Board of Directors, 2017 - present.
- Qatar Computing Research Institute, Scientific Advisory Committee, 2014 - present.

Select Past Appointments: Board Memberships and Advisory Committees

- Homeland Security Academic Partnership Council, U.S. Dept of Homeland Security, 2023 - 2024.
- President's Export Council, U.S. Dept of Commerce International Trade Association, 2022 - 2024.
- National Center for Women and Information Technology, Board of Directors, 2014 - 2024.
- National Research Council Computer Science and Telecommunications Board (Chair), 2015 - 2021.
- Advanced Robotics for Manufacturing Institute, Board of Directors, 2016 - 2018.
- Computing Research Association, Board of Directors, 2015 - 2018.
- University of Texas Computer Science Advisory Council, 2015 - 2017.
- Acrobatiq Inc, Board of Directors, 2015 - 2017.
- Ben Franklin Technology Development Authority, Board of Directors, 2015 - 2017.
- National Governors Association's Cybersecurity Advisory Council, 2012 - 2014.
- National Science and Technology Council Committee on Technology, Networking and Information Technology R&D Subcommittee, 2011 - 2014.

PROFESSIONAL ASSOCIATION / SOCIETY MEMBERSHIPS

- Fellow of the Association for Computing Machinery (ACM).
- Fellow of the Institute of Electrical and Electronics Engineers (IEEE).
- Fellow of the American Association for the Advancement of Science (AAAS).

AWARDS AND HONORS

- National Academy of Engineering, Elected Member, 2026
- GEM Consortium Academic Leadership Award, 2021
- Association for Computing Machinery SIGCOMM Test of Time Award, 2021.
- Carnegie Corporation of New York "Great Immigrants: The Pride of America" Campaign Honoree, 2016.
- Computing Research Association Distinguished Service Award, 2015.
- New Enterprise Forum Entrepreneur of the Year, 2010.
- Edward S. Davidson Collegiate Professor of EECS, 2009.
- Distinguished University Innovator Award, University of Michigan, 2009.
- Association for Computing Machinery SIGCOMM Test of Time Award, 2008.
- Governor's University Award for Commercialization Excellence (U-ACE), 2005.

- First Chair of EECS at the University of Michigan, 2008-2011.
- EECS Outstanding Faculty Achievement Award, University of Michigan, 2005.
- Ernst & Young Entrepreneur of the Year Finalist, 2003.
- Amoco Faculty Teaching Award, University of Michigan, 2000.
- IBM Faculty Development Award, 2000.
- DARPA Innovation Award, Fault-Tolerant Networking Program, 2000.
- College of Engineering Teaching Excellence Award, University of Michigan, 1998.
- *ComputerWorld* Smithsonian Innovation Awards: UARC project, 1998.
- IBM University Partnership Program Research Award, 1998.
- EECS Department Teaching Excellence Award, University of Michigan, 1996. · National Science Foundation CAREER Award, 1995.
- Eta Kappa Nu Honor Society EECS Professor of the Year, 1995.
- IEEE Service Award, 1993.
- IBM Research Division Award, 1992.
- IBM Outstanding Technical Innovation Group Award, 1992.
- Elected to Eta Kappa Nu, Phi Kappa Phi and Alpha Chi honor societies.
- More than 25 company and innovation awards earned by Arbor Networks from 2000-2010 from leading industry publications and organizations including Techworld Award for Security Product of The Year, Information Security Product Award, and Inc 500 Award.

SELECT KEYNOTES, PLENARIES AND TESTIMONIES (2014-Present)

- "Open science for global challenges." Opening Plenary Panel, Frontiers House, World Economic Forum, January 2026.
- "Technology and Innovation: A View from Academia." Panel, National Security and Technology Summit, September 2025.
- "The AI Race and How to Win It." Panel Moderator, Inaugural Pennsylvania Energy and Innovation Summit, July 2025.
- "Limitless Possibilities: How Universities and Industry Collaborate in the Age of AI." World Economic Forum Panel, January 2025.
- "From Perpetual Change to Perpetual Adaptability: New Strategies for the Future," CEO Roundtable, World Economic Forum, January 2025.
- "Forging the Future of AI and Robotics," International Aviation and Robotics Summit, May 2024.
- "A Breathtaking Moment In The Evolution Of AI," AI Horizons Summit and panel, October 2024.
- "Revitalizing American Industry Place-Based Innovation For Economic Development," The Brookings Institution, April 2024.
- "Creating Global Solutions Through AI" Doha Retreat, December 2023.
- "AI Challenges: Risks, Policy, and Governance" Doha Retreat, December 2023
- "The Evolving Role of Universities in the American Innovation Ecosystem." Duke University Innovation Policy Conference Panel, March 2022.
- "Back to Basic Research: An R&D Investment Plan to Enhance US Competitiveness." The Conference Board Panel, November 2021.
- "From Student to Startup," Invited Talk, TechCrunch City Spotlight: Pittsburgh. June 2021.
- Congressional Testimony on "Reimagining our Innovation Future," U.S. House Representative Committee on Science, Space and Technology, Washington, DC, April 2021.
- "The Future of Human-Robot Interaction," World Economic Forum Annual Meeting, Davos, Switzerland, January 2020.
- "Higher Education in the Age of Disruption," Inaugural Address, Initiative for Technology, Culture, and Society, Technology Innovation Lecture Series, Rice University, November 2019.

- New York Times Inaugural DealBook DC Strategy Forum, Task Force on “Student Debt,” Washington, DC, September 2019.
- “Higher Education in the Age of Disruption,” Keynote Address, Celebrating the MIT Stephen A. Schwarzman College of Computing, Cambridge, MA, February 2019.
- “Tackling the Cyber Capability Gap to Secure our Digital Future,” Panel Moderator, World Economic Forum Annual Meeting, Davos, Switzerland, January 2019,
- “Growth Beyond Bottom Line: The U.S. Innovation Ecosystem,” SELECT USA Investment Summit, Panel Chair, Washington, DC, June 2018.
- “Our Accelerating Digital Future: Trends, Disruptions, and Market Opportunities,” Plenary Talk, Computing Research: Addressing National Priorities and Societal Needs, Computing Research Association’s Computing Community Consortium (CCC), Washington, D.C., October 2017.
- "Capturing the Next Economy: Pittsburgh's Rise as a Global Innovation City," Panel hosted by Brookings Institution, Pittsburgh, PA, September 2017.
- “The Cybersecurity Imperative,” Keynote Address, DSN 2017: The 47th IEEE/IFIP International Conference on Dependable Systems and Networks, Denver, CO, June 2017.
- “Innovation and Impact in Cyber Security,” Keynote Address, National Science Foundation’s 2017 Secure and Trustworthy Cyberspace (SaTC) Principal Investigators’ Meeting, Arlington, VA, January 2017.
- “Research Funding Overview,” Invited Talk, Computing Research Association’s 2016 Career Mentoring Workshop, Arlington, VA, February 2016.
- “Academic Perspectives Panel on Smart Cities,” White House Smart Cities Forum, Washington, D.C., September 2015.
- “Accelerating Innovation in a Connected and Data-Rich World: Technology Trends, Disruptive Forces and Market Opportunities,” Keynote, 25th Anniversary Conference, Carnegie-Bosch Institute, September 2015.
- “Unleashing the Discovery and Innovation Ecosystem,” CSTB Continuing Innovation in Information Technology Forum, National Research Council, Washington, D.C., March 2015.
- “Unleashing the Discovery and Innovation Ecosystem,” Keynote and Panel, National Security Agency Cyber Security Forum, Baltimore, MD, October 2014.
- “The Imperative for a Cyber Secure Society,” Keynote Address, Information Trust Institute 10-Year Anniversary, University of Illinois, September 2014.
- “Computation and Data in Networked World,” Keynote Address, ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), Philadelphia, PA, August 2014.
- “The Transformative Impact of Computation and Communication in a Data-Driven World,” Keynote Address, Extreme Science and Engineering Discovery Environment (XSEDE) Annual Conference, Atlanta, GA, July 2014.
- “Innovating for Society: The Transformative Impact of Computing in a Data-Driven World,” Invited talk, Committee on the Status of Women in Computing Research (CRA-W), Grad Cohort Workshop, Santa Clara, CA, April 2014.
- “The Policy Infrastructure for Big Data: From Data to Knowledge to Action,” Invited talk and panel, Big Data Future Conference, Ohio State University, March 2014.
- “Accelerating Innovation in Big Data: From Data to Knowledge to Action,” Keynote Address, Big Data Summit, Washington, DC, March 2014.

EXPERTISE

Farnam Jahanian's engineering expertise is in the areas of distributed computing, network security, and network protocols and architectures, with a strong emphasis on Internet security, resilience, and large-scale measurement. He led several large-scale research projects that studied the growth and scalability of the Internet infrastructure, which ultimately transformed how cyber threats are addressed by Internet Service Providers. Working across industry, academia and government partnerships, Jahanian's work throughout his research career has helped improve the robustness, stability, and trustworthiness of global networks. Other areas of interest include the transformation of higher education in the digital age, especially the need to embrace more personalized, interdisciplinary and technology-enhanced approaches. He is also an active advocate for how research can be central to an innovation ecosystem that drives global competitiveness and addresses national priorities. Beyond his research activities, Jahanian successfully launched the network security software firm Arbor Networks, steering the company through its eventual acquisition. He subsequently returned to government and academia, first as the National Science Foundation's Assistant Director for Computer and Information Science and Engineering (2011 - 2014), and then through a series of academic leadership roles at Carnegie Mellon University, where he now serves as president.

ADDENDUM: PATENTS, PUBLICATIONS AND RESEARCH PROJECTS

Patents

- *Network service for the detection, analysis and quarantine of malicious and unwanted files.* Inventors: Jon Oberheide, Evan Cooke, Farnam Jahanian. University of Michigan System. (2013)

- *Method and system for profiling network flows at a measurement point within a computer network.* Inventors: Gerald Malan, Farnam Jahanian. University of Michigan System. (2005)

- *Method and system for detecting, tracking and blocking denial of service attacks over a computer network.* Inventors: Gerald Malan, Farnam Jahanian. University of Michigan System. (2002)

Select Refereed Publications

F. Jahanian, "The Policy Infrastructure for Big Data: From Data to Knowledge to Action," Journal of Law and Policy for Information Society, vol. 10, no. 3, Winter 2015.

Y. Xu, M. Bailey, B. Noble and F. Jahanian, "Small is Better: Avoiding Latency Traps in Virtualized Data Centers," Proceedings of the 2013 ACM Symposium on Cloud Computing (SoCC'13) Santa Clara, CA, USA, Oct. 2013.

J. Zhang, R. Berthier, W. Rhee, M. Bailey, P. Pal, F. Jahanian, and W. Sanders, "Learning from Early Attempts to Measure Information Security Performance," Proceeding of the 5th Workshop on Cyber Security Experimentation and Test (CSET '12), Bellevue, Washington, Aug. 2012.

J. Zhang, R. Berthier, W. Rhee, M. Bailey, P. Pal, F. Jahanian, and W. Sanders, "Safeguarding Academic Accounts and Resources with the University Credential Abuse Auditing System," Proceedings of the 42nd Annual IEEE International Conference on Dependable Systems and Networks (DSN '12), Boston, MA, June 2012.

Y. Xu, M. Bailey, F. Jahanian, K. Joshi, M.Hiltunen, and R. Schlichting, "An Exploration of L2 Cache Covert Channels in Virtualized Environments," Proceedings of the 3rd ACM Cloud Computing Security Workshop (CCSW '11), Chicago, Illinois, Oct. 2011.

K. Nyalkalkar, S. Sinha, M. Bailey, and F. Jahanian, "A Comparative Study of Two Network-based Anomaly Detection Methods," In (mini-conference) the 30th IEEE International Conference on Computer Communications (INFOCOM '11), Shanghai, China, Apr. 2011.

E. Wustrow, M. Karir, M. Bailey, F. Jahanian, and G. Houston, "Internet Background Radiation Revisited," ACM/USENIX Internet Measurement Conference, Melbourne, Australia, Nov. 2010.

C. Labovitz, S. Ikle-Johnson, D. McPherson, J. Oberheide and F. Jahanian, "Internet Inter-Domain Traffic," Proceedings of ACM SIGCOMM, August 2010.

Y. Xu, M. Bailey and F. Jahanian, "CANVuS: Context-Aware Network Vulnerability Scanning,"13th International Symposium on Recent Advances in Intrusion Detection (RAID), Ottawa, CA, Sept. 2010.

S. Sinha, M. Bailey, and F. Jahanian, "Improving SPAM Blacklisting through Dynamic Thresholding and Speculative Aggregation," 17th Annual Network & Distributed System Security Symposium (NDSS'10), San Diego, CA, Mar. 2010.

J. Oberheide and F. Jahanian, "When Mobile is Harder Than Fixed: Demystifying Security Challenges in Mobile Environments," Eleventh Workshop on Mobile Computing Systems and Applications (HotMobile), Annapolis, MD, Feb. 2010.

J. Oberheide, M. Bailey, and F. Jahanian. "PolyPack: An Automated Online Packing Service for Optimal Antivirus Evasion," 3rd USENIX Workshop on Offensive Technologies (WOOT '09), Montreal, Canada, Aug. 2009.

J. Oberheide, E. Cooke, and F. Jahanian, "If It Ain't Broke, Don't Fix It: Challenges and New Directions for Inferring the Impact of Software Patches," Workshop on Hot Topics in Operating Systems (HotOS XII), May 2009.

S. Sinha, M. Bailey, and F. Jahanian, "One Size Does Not Fit All: 10 Years of Applying Context Aware Security," Proceedings of the 2009 IEEE International Conference on Technologies for Homeland Security (HST '09), Waltham, MA, May 2009.

M. Bailey, E. Cooke, F. Jahanian, Y. Xu, and M.h Karir. "A Survey of Botnet Technology and Defenses," Proceedings of the Cybersecurity Applications & Technology Conference For Homeland Security (CATCH '09), Washington, DC, Mar. 2009.

J. Oberheide, E. Cooke, and F. Jahanian, "CloudAV: N-Version Antivirus in the Network Cloud," Proceedings of the 17th USENIX Security Symposium, July 2008.

J. Oberheide, K.Veeraraghavan, E. Cooke, J. Flinn, and F. Jahanian, "Virtualized In-Cloud Security Services for Mobile Devices," Workshop on Virtualization in Mobile Computing (MobiVirt'08), June 2008.

S. Sinha, M. Bailey, and F. Jahanian. "Shades of Grey: On the Effectiveness of Reputation-based blacklists," Proceedings of the 3rd International Conference on Malicious and Unwanted Software (MALWARE '08), pages 57-64, Fairfax, Virginia, USA, Oct. 2008.

J. Oberheide, E. Cooke, and F. Jahanian, "Exploiting Live Virtual Machine Migration," Black Hat DC, Washington DC, Feb. 2008.

M. Bailey, J. Oberheide, J. Andersen, Z. M. Mao, F. Jahanian, and J. Nazario, "Automated Classification and Analysis of Internet Malware," 10th International Symposium Recent Advances in Intrusion Detection (RAID), Queensland, Australia, Sept. 2007.

J. Oberheide, E. Cooke, and F. Jahanian, "Rethinking Antivirus: Executable Analysis in the Network Cloud," 2nd USENIX Workshop on Hot Topics in Security (HotSec), Boston, MA, Aug. 2007.

J. Oberheide, M. Karir, Z. M. Mao and F. Jahanian, "Characterizing Dark DNS Behavior," Proceedings of the 4th International Conference on Detection of Intrusions and Malware, and Vulnerability Assessment (DIMVA'07)," Switzerland, July 2007.

S. Sinha, M. Bailey, and F. Jahanian, "Shedding Light on the Configuration of Dark Addresses," Network and Distributed System Security Symposium (NDSS), San Diego, California, Feb. 28-Mar. 2, 2007.

E. Cooke, A. Myrick, D. Rusek, and F. Jahanian, "Resource-Aware Multi-Format Network Security Data Storage," Proceedings of the SIGCOMM Workshop on Large Scale Attack Defense (LSAD'06), Sept. 2006.

S. Sinha, F. Jahanian, and J. Patel, "WIND: Workload-aware Intrusion Detection," 9th International Symposium on Recent Advances in Intrusion Detection (RAID), Hamburg, Germany, Sept. 2006.

E. Cooke, Z. M. Mao, and F. Jahanian, "Hotspots: The Root Causes of Non-Uniformity in Self-Propagating Malware," International Conference on Dependable Systems and Networks (DSN 2006), Philadelphia, PA, pp. 179-188, June 2006.

J. Han, D. Watson, F. Jahanian, "An Experimental Study of Internet Path Diversity," IEEE Transactions on Dependable and Secure Computing, vol. 3, no. 4, pp. 273-288, Oct-Dec, 2006.

E. Cooke, M. Bailey, F. Jahanian, and R. Mortier, "The Dark Oracle: Perspective-Aware Unused and Unreachable Address Discovery," 3rd Symposium on Networked Systems Design and Implementation (NSDI06), San Jose, CA, May 2006.

M. Bailey, E. Cooke, F. Jahanian, A. Myrick, and S. Sinha, "Practical Darknet Measurement," Proceedings of the 40th Annual Conference on Information Sciences and Systems (CISS '06), pages 1496-1501, Princeton, New Jersey, Mar. 2006.

M. Bailey, E. Cooke, F. Jahanian, N. Provos, K. Rosaen, and D. Watson, "Data Reduction for the Scalable Automated Analysis of Distributed Darknet Traffic," Internet Measurement Conference (IMC 2005), Oct. 2005.

M. Bailey, E. Cooke, F. Jahanian, J. Nazario, and D. Watson, "The Blaster Worm: Then and Now," IEEE Security & Privacy Magazine, volume 3, issue 4, pp. 26- 31, July-Aug. 2005.

E. Cooke, F. Jahanian, and D.McPherson, "The Zombie Roundup: Understanding, Detecting, and Disrupting Botnets," Usenix Workshop on Steps to Reducing Unwanted Traffic on the Internet (SRUTI 2005), pp. 39-44, Cambridge, MA, July 2005.

J. Han, D. Watson, and F. Jahanian, "Topology Aware Overlay Networks," IEEE Infocom, Miami, FL, Mar. 2005.

M. Bailey, E. Cooke, F. Jahanian, J. Nazario, and D. Watson, "The Internet Motion Sensor: A Distributed Blackhole Monitoring System," Proceedings of the 12th Annual Network and Distributed System Security Symposium (NDSS), San Diego, CA, Feb. 2005.

E. Cooke, M. Bailey, Z. M. Mao, D. Watson, F. Jahanian, and D. McPherson, "Toward Understanding Distributed Blackhole Placement," WORM'04, Washington, DC, pp. 56-64, Oct. 2004.

J. Han and F. Jahanian, "Impact of Path Diversity on Multi-homed and Overlay Networks," IEEE International Conference on Dependable Systems and Networks (DSN-2004), Florence, Italy, pp. 22-31, June 2004.

D. Watson, M. Smart, G. R. Malan, and F. Jahanian, "Protocol Scrubbing: Network Security through Transparent Flow Modification," IEEE/ACM Transactions on Networking, vol. 12, no. 2, pp. 261-73, April 2004.

D. Watson, G. R. Malan, and F. Jahanian, "An extensible probe architecture for network protocol performance measurement," vol. 34, Software Practice & Experience, 2004.

M. Bailey, F. Jahanian, G. R. Malan, J. Nazario, D. Song, and R. Stone, "Measuring, Characterizing, and Tracking Internet Threat Dynamics," Proceedings of the OpenSig 2003 Workshop (OpenSig '03), New York, NY, Oct. 2003.

D. Watson, F. Jahanian, and C. Labovitz, "Experiences with Monitoring OSPF on a Regional Service Provider Network," 23rd IEEE International Conference on Distributed Computing Systems (ICDCS), pp. 204-213, May 2003.

J. Han, G. Robert Malan, and F. Jahanian, "Fault-tolerant virtual private networks within an autonomous system," Proceedings of 21st IEEE Symposium on Reliable Distributed Systems, pp. 13-16, Oct. 2002.

C. Labovitz, A. Ahuja, A. Bose, and F. Jahanian, "Delayed internet routing convergence," IEEE/ACM Transactions on Networking, vol. 9, no. 3, pp. 293-306, June 2001.

D. Stuart, M. Brockmeyer, F. Jahanian, and A.K. Mok, "Simulation and Verification: Biting at the State Explosion Problem," vol. 27, no. 7, pp. 599-617, IEEE Transactions on Software Engineering, July 2001.

D. Watson, M. Smart, G.R. Malan, and F. Jahanian, "Protocol scrubbing: network security through transparent flow modification," Proceedings of DISCEX'01: DARPA Information Survivability Conference & Exposition II, Vol. 2, pp. 108-118, June 2001.

M. Brockmeyer, F. Jahanlan, C. Heitmeyer, and E. Winner, "A flexible, extensible simulation environment for testing real-time specifications," IEEE Transactions on Computers, Vol. 49, no. 11, pp. 1184-2001, Nov. 2000.

S. Johnson, F. Jahanian, A. Miyoshi, D. de Niz, R. Rajkumar, "Constructing real-time group communication middleware using the Resource Kernel," 21st IEEE Real-Time Systems Symposium, pp. 3-12, Nov. 2000.

C. Labovitz, A. Ahuja, A. Bose, and F. Jahanian, "An Experimental Study of BGP Convergence," Proceedings of ACM SIGCOMM 2000, Stockholm, Sweden, pp. 175-87, Aug. 2000.

M.C. Smart, R.G. Malan, and F. Jahanian, "Defeating TCP/IP Stack Fingerprinting," 9th USENIX Security Symposium, Denver, CO, pp. 229-39, August 2000.

S. Johnson, F. Jahanian, S. Ghosh, B. VanVoorst, and N. Weininger, "Experiences with Group Communication Middleware," Practical Experience Report, Int. Conference on Dependable Systems and Networks (DSN-2000), New York, NY, pp. 37-42, June 2000.

R. Malan, D. Watson, F. Jahanian, and P. Howell, "Transport and Application Protocol Scrubbing," Proceeding of INFOCOM2000, Israel, Vol. 3, pp. 1381-90, Mar. 2000.

H. Zou, N. Soparkar, F. Jahanian, "Probabilistic Data Consistency for Wide-Area Applications," Abstract in 16th International Conference on Data Engineering, pp. 85, Feb.-Mar. 2000.

S. Subramanian, G.R. Malan, H.S. Shim, J.H. Lee, P. Knoop, T. Weymouth, F. Jahanian, A. Prakash, and J. Hardin, "The UARC Web-Based Collaboratory: Software Architecture and Experiences," Chapter 1 in Handbook of Internet Computing, 2000.

G. Olson, D. Atkins, B. Clauer, T. Weymouth, A. Prakash, T. Finholt, F. Jahanian, and C. Rassmussen, "The Upper Atmospheric Research Collaboratory (UARC)," in Coordination Theory and Collaboration Technology, ed. by T. Malone, and J. Smith, Lawrence Erlbaum Associates, 2000.

H. Zou and F. Jahanian, "Real-Time Primary-Backup Replication with Temporal Consistency Guarantees," IEEE Transactions on Parallel & Distributed Systems, vol. 10, no. 6, pp. 533-48, June 1999.

S. Subramanian, G.R. Malan, H.S. Shim, P. Knoop, T. Weymouth, F. Jahanian, and A. Prakash, "Software Architecture for the UARC Web-based Collaboratory," IEEE Internet Computing, vol. 3, no. 2, pp. 46-54, Mar.-Apr. 1999.

S. Johnson and F. Jahanian, and J. Shah, "The Inter-Group Router Approach to Scalable Group Composition," Proceedings of 19th International Conference on Distributed Computing Systems, ICDCS-99, Austin, TX, pp. 4-14, June 1999.

C. Labovitz, A. Ahuja, and F. Jahanian, "Experimental Study of Internet Stability and Wide-Area Backbone Failures," Proceedings of FTCS-29, the 29th International Symposium on Fault-Tolerant Computing Madison, Wisconsin, pp. 278-285, June 1999.

T. Abdelzaher, S. Dawson, W.C. Feng, F. Jahanian, S. Johnson, A. Mehra, T. Mitton, A. Shaikh, K. Shin, Z. Wang, and H. Zou, "ARMADA Middleware and Communication Services," Real-Time Systems Journal, vol. 16, no. 2-3, pp. 127-53, May 1999.

C. Labovitz, G.R. Malan, and F. Jahanian, "Origins of Internet Routing Instability," Proceedings of INFOCOM99, New York, NY, vol. 1, pp. 218-26, Mar. 1999.

Craig Labovitz, G.Robert Malan, and Farnam Jahanian, "Internet Routing Instability," ACM/IEEE Trans. on Networking, vol. 6, no. 5, pp. 515-528, Oct. 1998.

H. Zou and F. Jahanian, "Optimization of a Real-Time Primary-Backup Replication Service," Proceedings of the IEEE Symposium on Reliable Distributed Systems, Oct. 1998.

G. Robert Malan and Farnam Jahanian, "An Extensible Probe Architecture for Network Protocol Performance Measurement," Proceedings of the ACM SIGCOMM '98 Conference, Vancouver, British Columbia, Sept. 1998.

Hengmin Zou and Farnam Jahanian, "Real-Time Primary-Backup Replication with Temporal Consistency Guarantees," Proceedings of the IEEE International Conference on Distributed Computing Systems, Amsterdam, The Netherlands, June 1998.

G. R. Malan, F. Jahanian, and S. Subramanian, "Attribute-Based Data Dissemination for Internet Applications," Journal of High-Speed Networking Special Issue Multimedia Networking, Vol. 7, Number 3-4, pp. 319-337, 1998.

G. Olson, D. Atkins, R. Clauer, T. Finholt, F. Jahanian, T. Killeen, A. Prakash, and T. Weymouth, "The Upper Atmospheric Research Collaboratory," ACM Interactions Magazine, v. 3, pp. 48-55, May-June 1998.

S. Dawson, F. Jahanian, and T. Mitton, "Experiments on Six Commercial TCP Implementations Using a Software Fault Injection Tool," Software Practice and Experience, vol. 27, no. 12, pp. 1385-1410, Dec. 1997.

G. Robert Malan, Farnam Jahanian, and Sushila Subramanian, "Salamander: A Push-based Distribution Substrate for Internet Applications," Proceedings of the USENIX Symposium on Internet Technologies and Systems, Monterey, California, Dec. 1997.

C. Labovitz, G.R. Malan, and F. Jahanian, "Internet Routing Instability," Proceedings of ACM SIGCOMM, Best Student Paper Award, Sept. 1997. (Extended version in ACM/IEEE Transaction on Networking, Oct. 1998.)

A. Mehra, J. Rexford, and F. Jahanian, "Design and Evaluation of a Window-Consistent Replication Service," IEEE Transactions on Computer, vol. 46, no. 9, Sept. 1997.

H. S. Shim, R. Hall, A. Prakash, and F. Jahanian, "Providing Flexible Services for Managing Shared State in Collaborative Systems," Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 97), Lancaster, UK, Sept. 1997.

W. Feng, F. Jahanian, and S. Sechrest, "An Optimal Bandwidth Allocation Algorithm for the Delivery of Compressed Video," ACM/Springer Verlag Multimedia Systems Journal, pp. 297-309, Sept. 1997.

M. Brockmeyer, F. Jahanian, C. Heitmeyer, B. Labaw, "A Flexible, Extensible Simulation Environment for Testing Real-Time Specifications," Proceedings of IEEE Real-Time Technology & Applications Symposium, Montreal, pp. 125-35, June 1997.

G. Robert Malan, Farnam Jahanian, and Peter Knoop, "Comparison of Two Middleware Data Dissemination Services in a Wide-Area Distributed System," Proceedings of the 17th IEEE International Conference on Distributed Computing Systems, Baltimore, MD, pp. 411-419, May 1997.

K.-J. Lin and F. Jahanian, "Requirements and Issues of Real-Time Database Systems," in Real-Time Database Systems: Issues and Applications, ed. by Sang Son, Kluwer Academic Publishers, 1997.

R. W. Hall, A. G. Mathur, F. Jahanian, A. Prakash, and C. Rasmussen, "Corona: A Communication Service for Scalable, Reliable Group Collaboration Systems," Proceedings of the ACM Conf. on Computer Supported Cooperative Work (CSCW '96), 1996.

S. Dawson, F. Jahanian, and T. Mitton, "ORCHESTRA: a probing and fault injection environment for testing protocol implementations," Proceedings of IEEE International Computer Performance and Dependability Symposium, Sept. 1996.

W. Feng, F. Jahanian, S. Sechrest, "Providing VCR Functionality in a Constant Quality Video-On-Demand Transportation Service," IEEE Multimedia Computing Systems, Hiroshima, Japan, pp. 127-135, June 1996.

T. Abdelzaher, A. Shaikh, F. Jahanian, and K. Shin, "RTCAST: Lightweight Multicast for Real-Time Process Groups," (Best Student Paper Award) IEEE Real-Time Technology and Applications Symposium, pp. 250-259, June 1996.

S. Dawson, F. Jahanian, T. Mitton, and T.-L. Tung, "Testing of Fault-Tolerant and Real-Time Distributed Systems via Protocol Fault Injection," Int. Symposium on Fault Tolerant Computing (FTCS-26), pp.404-414, June 1996.

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- *“Mission Assurance in Tomorrow's IP-based Networks,”* Boeing Corporation, Farnam Jahanian (PI), Michael Bailey, 2010-2013.
- *“Virtual Center for Network and Security Data,”* Department of Homeland Security, Farnam Jahanian (PI), Michael Bailey, (UM); Paul Barford (U. Wisconsin); Nick Feamster (Georgia Tech); Manish Karir (Merit Network), 2005-2014.
- *“Botnet Attribution and Removal: from Axioms to Theories to Practice,”* ONR MURI Award, Wenke Lee (PI), Nick Feamster, David Dagon (Georgia Tech); Kang Shin, Farnam Jahanian, Mike Bailey (UM); Christopher Kruegel, Giovanni Vigna (UCSB); John Mitchell (Stanford), 2009-2014.
- *“In-Cloud Security for Mobile Devices,”* Google, Farnam Jahanian (PI), 2009.
- *“Topology-Aware Internet Threat Detection Using Pervasive Darknets,”* National Science Foundation, Farnam Jahanian (PI) and Jignesh Patel, 2006-2010.
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- *“New Frameworks for Detecting and Minimizing Information Leakage in Anonymized Network Data,”* Department of Homeland Security, Fabian Monrose (PI) Johns Hopkins University; Farnam Jahanian and Michael Bailey (UM); Mike Reiter (CMU), 2008-2010.
- *“Collaborative Research: Enabling Security and Network Management Research for Future Networks,”* National Science Foundation, Morley Mao (PI), Farnam Jahanian (UM); Wenke Lee and Nick Feamster (Georgia Tech); Manish Karir (Merit Network); Southern Crossroads, 2008-2011.
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