Sugih Jamin

Vitae

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Education

University of Southern California, Ph.D. ('96)
University of California, Berkeley, B.A. ('89)

Professional Experience

University of Michigan, Ann Arbor
Department of Electrical Engineering and Computer Science
Associate Professor (2002 to Present)
Assistant Professor (1996 to 2002)
Taught at **UM-Shanghai Jiaotong University Joint Institute, China** (summers 2009, 2011)

Surya Pedagogy and Education College, Jakarta, Indonesia
Visiting Professor (Nov. 2010 to Jan. 2012)

Zattoo Inc.
Co-founder and Chairman (2005 to 2008)
Chief Technology Office (2005 to 2007)

University of Tokyo, Japan
Department of Electrical Engineering, Aoyama-Morikawa Laboratory
Visiting Associate Professor (Feb. 2003 to Aug. 2003)

University of Cambridge, United Kingdom
Computer Laboratory, Systems Research Group
Visiting Scholar (Jul. 2002 to Jan. 2003)

Xerox Palo Alto Research Center
Computer Science Laboratory (1992 to 1996)

Awards

- University of Tokyo Foreign Research Fellow 2003
- United Kingdom Engineering and Physical Sciences Research Council (EPSRC) Fellowship 2002
- Alfred P. Sloan Research Fellowship 2001
- University of Michigan, College of Engineering 1938E Award 2001
- US-Israel Binational Science Foundation Research Grant 2001
- NASA Technology Transfer Program Award YA-C1 2001
- Presidential Early Career Award for Scientists and Engineers (PECASE) 1998

- NSF CAREER Award ANI-9734145
- ACM SIGCOMM 1995 Best Student Paper Award
- Office of the Naval Research Laboratory Graduate Student Award
- Uniforum Graduate Student Research Grant (1992 – 1994)

Publications

Book:

Jin, C., Jamin, S., Raz, D., and Shavitt, Y., *Building Scalable Network Services: Theory and Practice*, Kluwer Academic Publishers, 2004.

Journal Papers:

Pi, Y., Jamin S., Danzig, P.B., and Shaha, J., "AP-atoms: A High-Accuracy Data-Driven Client Aggregation for Global Load Balancing," *IEEE/ACM Transactions on Networking*, 26(6):2748–2761, Dec. 2018.

Hu, B., Fan, F., Yeung, K., Jamin. S., "Highest Rank First: A New Class of Single-iteration Scheduling Algorithms for Input-queued Switches," *IEEE Access*, 6:11046-11062, Jan. 2018.

Wang, W., Chang, H., Goodman, A., Wucherer, E., Jamin, S., "Managing Digital Rights for P2P Live Broadcast and Recording on the Internet," *IEEE Trans. on Multimedia* 14(6):1538–1545, Dec. 2012.

Cassagnes, C., Magoni, D., Chang, H., Wang, W., Jamin, S., "Scalability and Efficiency of Push-Driven P2PTV Systems," *Journal of Communications Software and Systems*, 7(3):93–103, 2011.

Chang, H., Jamin, S., and Wang, W., "Live Streaming with Receiver-based Peer-division Multiplexing," *ACM/IEEE Transactions on Networking*, 19(1):55–68, 2011.

Dolev, D., Jamin, S., Mokryn, O., Shavitt, Y., "Internet Resiliency to Attacks and Failures Under BGP Policy Routing," *Computer Networks Journal*, 50(16):3183–3196, November 2006.

Zhang, B., Wang, W., Jamin, S., Massey, D., Zhang, L., "Universal IP Multicast Delivery," *Computer Networks Journal* 50(6):781–806, April 2006.

Cronin, E., Filstrup, B., Kurc, A.R., Jamin, S., "An Efficient Synchronization Mechanism for Mirrored Game Architectures (Extended Version)," *Kluwer Multimedia Tools and Applications Journal*, 23 (1): 7-30, May 2004.

Chang, H., Govindan, R., Jamin, S., Shenker, S., Willinger, W., "Towards Capturing Representative AS-Level Internet Topologies," *Computer Networks Journal*, 44 (6): 737-755, Apr. 2004.

Cronin, E., Jamin, S., Jin, C., Kurc, A., Raz, D., Shavitt, Y., "Constrained Mirror Placement on the Internet," *IEEE Journal on Selected Areas in Communications*, Sep. 2002.

Francis, P., Jamin, S., Jin, C., Jin, Y., Kurc, A., Raz, D., Shavitt, Y., and Zhang, L., "IDMaps: A Global Host Distance Estimation Service," *IEEE/ACM Transactions on Networking*, 10(4):525-540, October 2001.

Willinger, W., Govindan, R., Jamin, S., Paxson, V., Shenker, S., "Scaling Phenomena in the Internet: Cricially Examining Criticality," *Proceedings of the National Academy of Sciences: Self-organized Complexity in the Physical, Biological, and Social Sciences*, March 23–24, 2001.

Jamin, S., Danzig, P.B., Shenker, S.J., and Zhang, L., "A Measurement-based Admission Control Algorithm for Integrated Services Packet Networks (Extended Version)," *IEEE/ACM Transactions on Networking*, Feb. 1997, pp. 56-70.

Danzig, P.B., Jamin, S., Cáceres, R., and Mitzel, D.J., "An Empirical Workload Model for Driving Wide-Area TCP/IP Network Simulations," *Journal of Internetworking: Research and Experience*, 3(1):1-26, 1992.

Conference Papers:

Pi, Y., Jamin, S., Danzig, P.B., and Qian, F., "Latency Imbalance Among Internet Load-Balanced Paths: An Internet-Scale Measurement Study," *ACM SIGMETRICS*, 48:65-66, 2020.

Xiao, J., Yeung, K.L., and Jamin, S., "ILP Formulation for Designing Rings in Routerless Network-on-Chip," *Proc. of IEEE Int'l Conf. on Communications (ICC)*, 2019.

Xiao, J., Yeung, K.L., and Jamin, S., "CLF: An Online Coflow-Aware Packet Scheduling Algorithm," *Proc. of IEEE 43rd Conf. on Local Computer Networks (LCN)*, 2019.

Xiao, J., Yeung, K.L., and Jamin, S., "A New Scheduling Algorithm for Input-Queued Switches with Mixed Unicast and Multicast Traffic," *Proc. of IEEE 19th Int'l Conf. on High Performance Switching and Routing (HPSR)*, 2018.

Xiao, J., Yeung, K.L., and Jamin, S., "Scheduling Mixed Unicast and Multicast Traffic with Variable-Size Packets in Input-Queued Switches," *Proc. of IEEE 19th Int'l Conf. on High Performance Switching and Routing (HPSR)*, 2018.

Boberg, A., Cai, W., Carr, K., Bailey, C., Giri, S., Henry, R., Jamin, S., Jun, HN., Lopez, D., Sattler, E., and Yeh, E., "A Personalized Interactive Guide to an Exhibition," *Proc. of Digital Cultural Heritage International Conference*, Berlin, Germany, Aug 2017.

Xiao, J., Yeung K., Jamin S., "Pipelined Scheduler for Unicast and Multicast Traffic in Input-Queued Switches," *Proc. of IEEE Globecom*, 2016.

McIsaac, P., Jamin, S., Ibanez, I., Singer, O., and Bray, B. "Die geowissenschaftliche Analyse von großen Mengen historischer Texte: Die Visualisierung geographischer Verhältnisse in deutschen Familienzeitschriften," *Proc. of Digital Humanities im deutschsprachigen raum (DHd) 2016 Conference*, March 7-10, 2016, University of Leipzig, Germany.

Zhang, X., Jamin, S., and Yeung, K.L., "Overlay Topology as Random-walk Cache," *IEEE Int'l Conf. on Network Protocols 2015*, Nov., 2015.

He, C., Yeung, K.L., and Jamin, S., "Packet-based Load-balancing in Fat-tree Based Data Center Networks," *IEEE Int'l Conf. on Communications 2014 - Selected Areas in Communications Symposium*, June, 2014.

Wang, W., Chang, H., Goodman, A., Wucherer, E., Jamin, S., "Meeting the Digital Rights Requirements of Live Broadcast in a Peer-to-Peer Network," *Int'l Conf. on Distributed Computer Systems*, 2011.

Cassagnes, C., Magoni, D., Chang, H., Wang, W., and Jamin, S., "On the Scalability of P2P-Based Push-Driven Live Streaming Systems," *IEEE Int'l Conf. on Communications*, May, 2010.

Chang, H., Jamin, S., Wang, W., "Live Streaming Performance of the Zattoo Network," *Proc. of the Internet Measurement Conference*, Nov. 2009, Chicago, USA.

Wang, W., Xiong, Y., Zhang, Q., and Jamin, S., "Ripple-Stream: Safeguarding P2P Streaming Against DoS Attacks," *International Conference on Multimedia and Expo (ICME)*, July 2006, Toronto, Canada.

Chang, H., Jamin, S., Willinger, W., "To Peer or not to Peer: Modeling the Evolution of the Internet's AS-level Topology," *Proc. of IEEE Infocom 2006*, Barcelona, Spain.

Chang, H., Jamin, S., Mao, Z.M., Willinger, W., "An Empirical Approach to Modeling Inter-AS Traffic Matrices," *Proc. of Internet Measurement Conference*, Oct. 2005.

Wang, Z., Jin, C., Jamin, S., "Network Maps Beyond Connectivity," *Proc. of IEEE Globecom 2005*.

Upatkoon, K., Wang, W., Jamin, S., "WebBee: An Architecture for Web Accessibility for Mobile Devices", *Proc. of the 10th IFIP Int'l. Conf. on Personal Wireless Communications*, August 2005, Colmar, France.

Wang, W., Jin, C., Jamin, S., "Network Overlay Construction under Limited End-to-End Addressability," *Proc. of IEEE Infocom 2005*, March 2005, Miami, USA.

Wang, W., Chang, H., Zeitoun, A., Jamin, S., "Characterizing Guarded Hosts in Peer-to-Peer File Sharing Systems," *Proc. of IEEE Globecom 2004–Global Internet and Next Generation Networks*, November 2004, Dallas, USA.

Zeitoun, A. and Jamin, S., "Rapid Exploration of Internet Live Address Space Using Optimal Discovery Path," *Proc. of IEEE Globecom 2003–Next Generation Networks and Internet*, December 2003.

Cronin, E., Jamin, S., Mankin, T., and McDaniel, P., "On the Performance, Feasibility, and Use of Forward-Secure Signatures," *Proc. of ACM CCS'03*, October 2003.

Jin, Y., Zhuang, B., Pappas, V., Zhang, L., and Jamin, S., "DIP: distance information protocol for IDMaps," Proc. of 8th IEEE Int'l. Symp. on Computers and Communication, 2003.

Tangmunarunkit, H., Govindan, R., Jamin, S., Shenker, S., Willinger, W., "Network Topology Generators: Degree-based vs. Structural," *Proc. of ACM SIGCOMM 2002*, August 2002.

Chen, Q., Chang, H., Govindan, R., Jamin, S., Shenker, S., Willinger, W., "The Origin of Power-Laws in Internet Topologies Revisited," *Proc. of IEEE Infocom 2002*, June 2002.

Zhang, B., Jamin, S., and Zhang, L., "Host Multicast: A Framework Delivering Multicast To End Users," *Proc. of IEEE Infocom 2002*, June 2002.

Chang, H., Jamin, S., and Willinger, W., "Inferring AS-level Internet Topology from Router-Level Path Tracers," *Proc. of SPIE ITCom 2001*, Denver, CO, 19-24 August 2001.

Jamin, S., Jin, C., Kurc, A., Raz, D., Shavitt, Y., "Constrained Mirror Placement on the Internet," *Proc. of IEEE Infocom 2001*, April 2001.

Breslau, L., Jamin, S., and Shenker, S., "Comments on the Performance of Measurement-Based Admission Control Algorithms," *Proc. of IEEE Infocom 2000*, March 2000.

Jamin, S., Jin, C., Jin, Y., Raz, D., Shavitt, Y., Zhang, L., "On the Placement of Internet Instrumentations," *Proc. of IEEE Infocom 2000*, March 2000.

Li, K. and Jamin, S., "Measurement-based Admission-Controlled Web Server," *Proc. of IEEE Infocom 2000*, March 2000.

McDaniel, P. and Jamin, S., "Windowed Key Revocation in Public Key Infrastructure," *Proc. of IEEE Infocom 2000*, March 2000.

Eggleston, J.E., Jamin, S., Kelly, T.P., MacKie-Mason, J.K., Walsh, W.E, and Wellman, M., "Survivability through Market-Based Adaptivity: The MARX Project," DARPA Information Survivability Conference & Exposition (DISCEX'00), Jan. 2000.

Chan, Y-M., Womer, J.P., Jamin, S., and MacKie-Mason, J. K., "A case for market-based pushed caching," *Proc. of the 2nd Int'l Conf. on Telecommunicatons and Electronic Commerce (ICTEC)*, 1999.

Francis, P., Jamin, S., Paxson, V., Zhang, L., Gryniewicz, D., and Jin, Y., "An Architecture for a Global Internet Host Distance Estimation Service," *Proc. of IEEE Infocom 1999*, March 1999.

Jamin, S., Shenker S.J. and Danzig, P.B., "Comparison of Measurement-based Admission Control Algorithms for Controlled-Load Service," *Proc. of the IEEE Infocom 1997*.

Jamin, S., Danzig, P.B., Shenker, S.J., and Zhang, L., "A Measurement-based Admission Control Algorithm for Integrated Services Packet Networks," *Proc. of the ACM SIGCOMM 1995*.

Danzig, P.B., Jamin, S., Cáceres, R., Mitzel, D.J., and Estrin, D., "An Empirical Workload Model for Driving Wide-Area TCP/IP Network Simulations," *Proc. of the ACM SIGCOMM 1991*.

Workshop Papers:

Cassagnes, C., Magoni, D., Chang, H., and Jamin, S., "Etude du passage à l'échelle d'un système pair-à-pair de diffusion télévisuelle," *11es Journées Doctorales en Informatique et Réseaux*, Mar. 2010.

Shami, K., Magoni, D., Chang, H., Wang, W., and Jamin, S., "Impacts of Peer Characteristics on P2PTV Networks Scalability," *IEEE Infocom 2009 Mini-Conference*, April 2009.

Wang, Z., Banerjee, S., and Jamin, S., "Media-Friendliness of a Slowly-Responsive Congestion Control Protocol," *Proc. of the 14th ACM Int'l Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV'04)*, June 2004.

Wang, Z., Banerjee, S., and Jamin, S., "Studying Streaming Video Quality: from an Application Point of View," *Proc. of ACM Multimedia Conference* (poster), November 2003.

Zeitoun, A., Wang, Z., and Jamin, S., "RTTometer: Measuring Path Minimum RTT with Confidence," *Proc. of IEEE Workshop on IP Operations and Management 2003*, October 2003.

Chang, H., Jamin, S., and Willinger, W., "Internet Connectivity at the AS-level: an Optimization-Driven Modeling Approach," *Proc. of ACM Models, Methods, and Tools of Reproducible Networking Research '03*, August 2003.

Wang, Z., Zeitoun, A., and Jamin, S., "Challenges and Lessons Learned in Measuring Path RTT for Proximity-based Applications," *Proc. of Passive and Active Measurement Workshop 2003*, Apr. 6-8 2003.

Cronin, E., Filstrup, B., and Jamin, S., "Cheat-Proofing Dead Reckoned Multiplayer Games," *Proc. of Application and Development of Computer Games 2003*, Hong Kong, Jan. 2003.

Wang, W., Helder, D., and Jamin, S., "Overlay Optimizations for End-host Multicast," *Proc. of Network Group Communication 2002*, Boston, Oct. 2002.

Zhang, B., Jamin, S., and Zhang, L., "Universal IP Multicast Delivery," *Proc. of Network Group Communication 2002*, Boston, Oct. 2002.

Chang, H., Govindan, R., Jamin, S., Shenker, S., and Willinger, W., "Towards Capturing Representative AS-Level Internet Topologies (Extended Abstract)," *Proc. of ACM SIGMETRICS 2002*, June 2002.

Helder, D. and Jamin, S., "End-host Multicast Communication Using Switch-trees Protocols," *Proc. of Global and Peer-to-Peer Computing on Large Scale Distributed Systems*, May 21-24, 2002.

Lee, H., Lenker, S., Kozlowski, E., and Jamin, S., "Multiplayer Game Cheating Prevention with Pipelined Lockstep Protocol," *Int'l Workshop on Entertainment Computing*, May 14-17, 2002.

Cronin, E., Filstrup, B., Jamin, S., "An Efficient Synchronization Mechanism for Mirrored Game Architectures," *Proc. of First Workshop on Network and System Support for Games (NetGames)*, April 16-17, 2002.

Lee, H., Lenker, S., Kozlowski, E., and Jamin, S., "Synchronization and Cheat-Proofing Protocol for Multiplayer Games," *Playing with the Future: Development and Directions in Computer Gaming*, April 5-7, 2002.

Eggleston, J. and Jamin, S., "Differentiated Services with Lottery Queueing," *Proc. of Ninth Int'l Workshop on Quality of Service 2001*, June 2001.

Kelly, T.P., Jamin, S., and MacKie-Mason, J.K., "Variable QoS from Shared Web Caches: User-centered Design and Value-sensitive Replacement," Workshop on Internet Service Quality Economics, Dec. 2-3, 1999, MIT.

Breslau L., Jamin, S., and Shenker, S., "Measurement-Based Admission Control: What is the Research Agenda?" *Proc. Int'l Workshop on Quality of Service '99*, May 31 - June 4, 1999, London, UK.

Chan, Y-M., Womer, J.P., MacKie-Mason, J. K., and Jamin, S., "One size doesn't fit all: Improving network QoS through preference-driven Web caching," *2nd Berlin Internet Economics Workshop*, Berlin, Germany May 28-29 1999.

Kelly, T.P., Chan, Y-M., Jamin, S., and MacKie-Mason, J. K., "Biased Replacement Policies for Web Caches: Differential Quality-of-Service and Aggregate User Value," *Proc. of the 4th Int'l Web Caching Workshop*, San Diego, California, 31 March - 2 April 1999.

Jin, C. and Jamin, S., "Design, Implementation, and End-to-end Evaluation of a Measurement-based Admission Control Algorithm for Controlled-Load Service," *Proc. of the 8th Int'l Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 98)*.

Jamin, S., Shenker, S.J., Zhang, L., and Clark, D.D., "A Measurement-based Admission Control Algorithm for Integrated Services Packet Networks," *Proceedings of the 3rd Int'l Workshop on Network and Operating Systems Support for Digital Audio and Video*, 1992.

Internet Drafts and Requests for Comments:

Braden, R. (ed.) et al., *Resource ReSerVation Protocol (RSVP)*, IETF RFC 2205, Sep. 1997.

Jamin, S. and Breslau, L., *A Measurement Based Admission Control Algorithm for Controlled-Load Service,* April 1997.

Magazine Articles:

Jamin, S., et al., "WebBee: A Platform for Secure Mobile Coordination and Communication in Crisis Scenarios," *CrossTalk: The Journal of Defense Software Engineering*, 21:10, pp. 15-19, Oct. 2008.

Tangmunarunkit, H., Govindan, R., Jamin, S., Shenker, S., and Willinger, W., "Does AS Size Determine Degree in AS Topology?" *ACM SIGCOMM Computer Communication Review*, October 2001.

Technical Reports and Software Packages:

Winick, J. and Jamin, S., *Inet-3.0: Internet Topology Generator*, UM Tech. Report, CSE-TR-456-02.
Jin, C., Chen, Q., and Jamin, S., *Inet: Internet Topology Generator*, UM Tech. Report, CSE-TR-433-00.
Software package available at http://topology.eecs.umich.edu/inet/.

Jamin, S. and Danzig, P.B., *tcplib: A Library of tcp Internetwork Traffic Characteristics*, USC Tech. Report, USC-CS-91-495. Software package available at http://netweb.usc.edu/jamin/tcplib/.