

Sonia Fahmy
Professor of Computer Science, Purdue University
305 N. University St., West Lafayette, IN 47907-2107, USA
fahmy -AT- purdue.edu, (765) 494-6183

(a) Professional Preparation

- The American University in Cairo, Egypt, Computer Science, B.Sc., 1992
- The Ohio State University, Columbus, OH, Computer and Information Science, M.S., 1996
- The Ohio State University, Columbus, OH, Computer and Information Science, Ph.D., 1999

(b) Appointments

- Professor, Department of Computer Science, Purdue University, 2011–present
- Associate Head, Department of Computer Science, Purdue University, 2015–2019, 2020–present
- University Faculty Scholar, Purdue University, 2015–2020
- Visiting Scientist, Hewlett-Packard Laboratories, Palo Alto, CA, November 2012–July 2013 and February–April 2006
- Associate Professor, Computer Science, Purdue University, 2005–2011
- Assistant Professor, Computer Science, Purdue University, 1999–2005
- Presidential Fellow, The Ohio State University, 1998–1999
- Research Associate, Computer and Info. Science, The Ohio State University, 1996–1998
- Teaching Associate, Computer and Info. Science, The Ohio State University, 1994–1996
- Software Engineer, DigitalTest/PSD, 1992–1994

(c) Selected Publications

1. Mijanur R. Palash, Voicu Popescu, Amit Sheoran, Sonia Fahmy, “Robust 360° Video Streaming via Non-Linear Sampling,” In Proceedings of IEEE INFOCOM (the conference on computer communications), 10 pp., May 2021.
2. Parvin Taheri, Danushka Menikkumbura, Erico Vanini, Sonia Fahmy, Patrick Eugster, Tom Edsall, “RoCC: Robust Congestion Control for RDMA,” In Proceedings of the 16th International Conference on emerging Networking EXperiments and Technologies (CoNEXT '20), December 2020.
3. Amit Sheoran, Sonia Fahmy, Matthew Osinski, Chunyi Peng, Bruno Ribeiro, Jia Wang, “Experience: Towards Automated Customer Issue Resolution in Cellular Networks,” In Proceedings of ACM MO-BICOM, pp. 610-622, September 2020.
4. Jianfei Gao, Mohamed Zahran, Amit Sheoran, Sonia Fahmy, Bruno Ribeiro, “Infinity Learning: Learning Markov Chains from Aggregate Steady-State Observations,” In Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20), 8 pp. + 11 pp. supplementary material, February 2020.
5. Amit Sheoran, Sonia Fahmy, Chunyi Peng, Navin Modi, “NASCENT: Tackling caller-ID spoofing in 4G networks via efficient network-assisted validation,” In Proceedings of IEEE INFOCOM (the conference on computer communications), 9 pp., April 2019.
6. Lianjie Cao, Sonia Fahmy, Puneet Sharma, Shandian Zhe, “Data-driven Resource Flexing for Network Functions Virtualization,” In Proc. of the ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS), 14 pp., July 2018.
7. Ming Shi, Xiaojun Lin, Sonia Fahmy, Dong-Hoon Shin, “Competitive Online Convex Optimization with Switching Costs and Ramp Constraints,” In Proceedings of IEEE INFOCOM (the conference on computer communications), 9 pp., April 2018.

8. Amit Sheoran, Puneet Sharma, Sonia Fahmy, Vinay Saxena, "Contain-ed: An NFV Micro-Service System for Containing e2e Latency," *ACM SIGCOMM Computer Communications Review (CCR)*, 47(5), 7 pp., October 2017.
9. Samuel Jero, Xiangyu Bu, Cristina Nita-Rotaru, Hamed Okhravi, Richard Skowrya, Sonia Fahmy, "BEADS: A Framework for Attack Discovery in OpenFlow-based SDN Systems," In *Proceedings of the 20th International Symposium on Research in Attacks, Intrusions and Defenses (RAID 2017)*, 22 pp., September 2017.
10. Wei-Min Yao, Sonia Fahmy. Flow-based Partitioning of Network Testbed Experiments. *Computer Networks*, 58(1):141-157, 15 January 2014.
11. Sriharsha Gangam, Puneet Sharma, Sonia Fahmy. Pegasus: Precision Hunting for Icebergs and Anomalies in Network Flows. In *Proceedings of IEEE INFOCOM (the conference on computer communications)*, 9 pp., April 2013.
12. Ethan Blanton, Sonia Fahmy, Greg N. Frederickson, Sriharsha Gangam. On the Cost of Network Inference Mechanisms. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 22(4):662-672, April 2011.
13. Roman Chertov and Sonia Fahmy. Forwarding Devices: From Measurements to Simulations. *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, 21(2), pp. 12:1-12:23, February 2011.
14. Yan Wu, Zhoujia Mao, Sonia Fahmy, Ness B. Shroff. Constructing Maximum-Lifetime Data Gathering Forests in Sensor Networks. *IEEE/ACM Transactions on Networking*, 18(5):1571-1584, October 2010.
15. Jelena Mirkovic, Alefiya Hussain, Sonia Fahmy, Peter Reiher, Roshan K. Thomas. Accurately measuring denial of service in simulation and testbed experiments. *IEEE Transactions on Dependable and Secure Computing (TDSC)*, 6(2):81-95, Apr/June 2009.
16. Yan Wu, Sonia Fahmy, Ness B. Shroff. Optimal Sleep/Wake Scheduling for Time-Synchronized Sensor Networks with QoS Guarantees. *IEEE/ACM Transactions on Networking*, 17(5):1508-1521, October 2009.
17. Roman Chertov, Sonia Fahmy, and Ness B. Shroff. Fidelity of Network Simulation and Emulation: A Case Study of TCP-Targeted Denial of Service Attacks. *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, 19:1:4:1-4:29, December 2008.
18. Sonia Fahmy, Minseok Kwon. Characterizing Overlay Multicast Networks and their Costs. *IEEE/ACM Transactions on Networking*, 15(2):373-386, April 2007.
19. O. Younis, S. Fahmy. On Efficient On-line Grouping of Flows with Shared Bottlenecks at Loaded Servers. *IEEE/ACM Transactions on Networking*, 13(2):288-301, April 2005.
20. Ossama Younis, Sonia Fahmy. HEED: A Hybrid, Energy-Efficient, Distributed Clustering Approach for Ad-hoc Sensor Networks. *IEEE Transactions on Mobile Computing*, 3(4):366-379, Oct-Dec 2004.
21. S. Kamara, S. Fahmy, E. Schultz, F. Kerschbaum, M. Frantzen. Analysis of Vulnerabilities in Internet Firewalls. *Computers and Security*, 22(3):214-232, April 2003.

(d) Synergistic Activities

- Steering committee member of the IEEE International Conference on Network Protocols (ICNP), 2008-present
- Technical program committee (TPC) chair of IEEE INFOCOM 2015 (with B. Li and J. Lui)
- TPC member (or TPC area chair) of ACM SIGMETRICS 2010, 2023-2025; ACM MOBICOM 2016, 2021-2023, 2025; ACM CoNEXT 2012, 2015, 2023; ACM SOSR 2017, 2020-2022; ACM SIGCOMM 2013; IEEE INFOCOM 2001, 2003-2006, 2008-2014, 2016-2019, 2021-2025; IEEE ICNP 2001, 2005-2007, 2009-2012, 2016-2024; IEEE ICDCS 2000, 2004, 2005, 2007, 2009; IEEE IWQoS 2004-2007, 2009
- Associate Editor, *IEEE Transactions on Mobile Computing*, February 2016-2019
- Associate Editor, *IEEE/ACM Transactions on Networking*, February 2011-2015