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Education

Ph.D. Computer Science, University of Wisconsin-Madison, 2015

M.S. Computer Science, University of Wisconsin-Madison, 2012

B.E. Computer Science and Technology, Beihang University, 2010

B.S. Mathematics, Beihang University, 2010.

Employments

Assistant Professor, Institute for Interdisciplinary Information Sciences, **Tsinghua University**, Dean: Andrew Chi-Chih Yao, 2017.4 - now.

Visiting Scholar, Network Platform Team, **PRO Unlimited @ Facebook Singapore**, Manager: Eric Sung, Supervisor: Ying Zhang, 2018.6 - 2018.9

Post-doctoral Researcher, Networking Systems Research Group, **Hewlett Packard Labs**, Manager: Sujata Banerjee, Mentor: Ying Zhang, 2016.1 - 2017.4.

Research Assistant, Computer Sciences Department, **University of Wisconsin-Madison**, Adviser: Aditya Akella, 2010.9 - 2015.12.

Research Intern, Small Cell Group, **Bell Labs, Alcatel-Lucent**, Mentor: Li Erran Li, 2014.5 - 2014.8.

Engineer Intern, Networking and Security Group, **VMWare, Palo Alto**, 2013.6 - 2013.8.

Research Intern, System Networking Group, **IBM Research, T. J. Watson**, Manager: Anees Shaikh, Mentor: Guohui Wang, 2012.5 - 2012.8.

Research Intern, Networking Group, **Hewlett-Packard Laboratories, Palo Alto**, Manager: Sujata Banerjee, Mentor: Yoshio Turner, 2011.6 - 2011.9.

Research Intern, Wireless and Networking Group, **Microsoft Research Asia**, Mentor: Chuanxiong Guo, 2009.6 - 2010.6.

Research Assistant, National Key Lab of Software Development Environment, **Beihang University**, 2008 - 2010.

Awards

Microsoft Collaborative Research Award. Microsoft Research Asia, 2018

Best Student Paper. Symposium of Cloud Computing (SoCC), Santa Clara, USA, 2013.

Landweber NCR Graduate Fellowship. Computer Sciences Department, UW-Madison, 2013 - 2014.

New Graduate Student Scholarship. Computer Sciences Department, UW-Madison, 2010.

Microsoft Young Scholar. Microsoft Research Asia, 2009.

National Scholarship. Chinese Ministry of Education, 2008.

Top-grade Prize (top 1) in Chinese Undergraduate Mathematical Contest in Modeling. China Society for Industrial and Applied Mathematics, 2008.

Publications

Conference Papers

- [1] Y. Jiang, Y. Cui, W. Wu, Z. Xu, J. Gu, K. K. Ramakrishnan, Y. He, and X. Qian, “**Speedybox: Low-latency nfv service chains with cross-nf runtime consolidation**,” in *Proceedings of the 16th USENIX Symposium on Networked Systems Design and Implementation*, ser. ICDCS ’19, 2019.
- [2] Q.-A. Fu and W. Wu, “**Tus: A transactional update service for sdn applications**,” in *Proceedings of the 9th ACM SIGOPS Asia-Pacific Workshop on Systems*, ser. APSys ’18, 2018.
- [3] Q. Ren, Y. Cui, W. Wu, C. Chen, Y. Chen, J. Liu, and H. Huang, “**Improving quality of experience for mobile broadcasters in personalized live video streaming**,” in *2018 IEEE/ACM 26th International Symposium on Quality of Service*, ser. IWQoS ’18, 2018.
- [4] Y. Yu, Y. Zhang, W. Wu, and C. Qian, “**Netcp: Consistent, non-interruptive and efficient checkpointing and rollback of sdn**,” in *2018 IEEE/ACM 26th International Symposium on Quality of Service*, ser. IWQoS ’18, 2018.
- [5] A. Abhashkumar, J.-M. Kang, S. Banerjee, A. Akella, Y. Zhang, and W. Wu, “**Supporting diverse dynamic intent-based policies using janus**,” in *Proceedings of the 13th ACM International on Conference on emerging Networking Experiments and Technologies*, ser. CoNEXT ’17, 2017.
- [6] A. Abhashkumar, J. Lee, J. Tourrilhes, S. Banerjee, W. Wu, J.-M. Kang, and A. Akella, “**P5: Policy-driven optimization of p4 pipeline**,” in *Proceedings of the 2017 Symposium on SDN Research*, ser. SOSR ’17, 2017.
- [7] K. He, W. Qin, Q. Zhang, W. Wu, J. Yang, T. Pan, C. Hu, J. Zhang, B. Stephens, A. Akella, and Y. Zhang, “**Low latency software rate limiters for cloud networks**,” in *Proceedings of the 2017 Asia-Pacific Workshop on Networking*, ser. APNet ’17, 2017.
- [8] Y. Zhang, W. Wu, S. Banerjee, J.-M. Kang, and M. A. Sanchez, “**Sla-verifier: Stateful and quantitative verification for service chaining**,” in *Proceedings of the 2017 IEEE Conference on Computer Communications*, ser. INFOCOM ’17, 2017.
- [9] L. Song, H. Huang, W. Zhou, W. Wu, and Y. Zhang, “**Learning from big malwares**,” in *Proceedings of the 7th ACM SIGOPS Asia-Pacific Workshop on Systems*, ser. APSys ’16, 2016.
- [10] W. Wu, Y. Zhang, and S. Banerjee, “**Automatic synthesis of nf models by program analysis**,” in *Proceedings of the 15th ACM Workshop on Hot Topics in Networks*, ser. HotNets ’16, 2016.
- [11] A. Gember-Jacobson, W. Wu, X. Li, A. Akella, and R. Mahajan, “**Management plane analytics**,” in *Proceedings of the 2015 ACM Conference on Internet Measurement Conference*, ser. IMC ’15, 2015.
- [12] W. Wu, K. He, and A. Akella, “**Perfsight: Performance diagnosis for software dataplanes**,” in *Proceedings of the 2015 ACM Conference on Internet Measurement Conference*, ser. IMC ’15, 2015.
- [13] M. Moradi, W. Wu, L. E. Li, and Z. M. Mao, “**Softmow: Recursive and reconfigurable cellular wan architecture**,” in *Proceedings of the 10th ACM International on Conference on emerging Networking Experiments and Technologies*, ser. CoNEXT ’14, 2014.

- [14] W. Wu, L. E. Li, A. Panda, and S. Shenker, “**Pran: Programmable radio access networks**,” in *Proceedings of the 13th ACM Workshop on Hot Topics in Networks*, ser. HotNets ’14, 2014.
- [15] W. Wu, Y. Chen, R. Durairajan, D. Kim, A. Anand, and A. Akella, “**Adaptive data transmission in the cloud**,” in *2013 IEEE/ACM 21st International Symposium on Quality of Service*, ser. IWQoS ’13, 2013.
- [16] W. Wu, G. Wang, A. Akella, and A. Shaikh, “**Virtual network diagnosis as a service**,” in *Proceedings of the 4th annual Symposium on Cloud Computing*, ser. SoCC ’13, 2013.
- [17] D. Han, A. Anand, F. Dogar, B. Li, H. Lim, M. Machado, A. Mukundan, W. Wu, A. Akella, D. G. Andersen, J. W. Byers, S. Seshan, and P. Steenkiste, “**Xia: Efficient support for evolvable internetworking**,” in *Proceedings of the 9th USENIX Symposium on Networked Systems Design and Implementation*, ser. NSDI ’12, 2012.
- [18] A. Anand, F. Dogar, D. Han, B. Li, H. Lim, M. Machado, W. Wu, A. Akella, D. G. Andersen, J. W. Byers, et al., “**Xia: An architecture for an evolvable and trustworthy internet**,” in *Proceedings of the 10th ACM Workshop on Hot Topics in Networks*, ser. HotNets ’11, 2011.
- [19] K. Chen, C. Guo, H. Wu, J. Yuan, Z. Feng, Y. Chen, S. Lu, and W. Wu, “**Generic and automatic address configuration for data center networks**,” in *Proceedings of the ACM SIGCOMM 2010 Conference*, ser. SIGCOMM ’10, 2010.
- [20] C. Guo, G. Lu, H. J. Wang, S. Yang, C. Kong, P. Sun, W. Wu, and Y. Zhang, “**Secondnet: A data center network virtualization architecture with bandwidth guarantees**,” in *Proceedings of the 6th International Conference on emerging Networking EXperiments and Technologies (CoNEXT)*, ser. CoNEXT ’10, 2010.

Journal Papers

- [1] W. Wu and Y. Zhang, “**Network function modeling and its applications**,” *IEEE Internet Computing*, 2017.
- [2] K. Chen, C. Guo, H. Wu, J. Yuan, Z. Feng, Y. Chen, S. Lu, and W. Wu, “**Dac: Generic and automatic address configuration for data center networks**,” *IEEE/ACM Transactions on Networking*, 2012.

Patents

- [1] J. M. Kang, A. Abhashkumar, S. Banerjee, Y. Zhang, and W. Wu, *Generating composite network policy*, US Patent Application US20180316576A1, Nov. 2018.
- [2] W. Wu, Y. Zhang, and S. Banerjee, *Middlebox modeling*, US Patent Application US20180131621A1, May 2018.
- [3] Y. Zhang, W. Wu, and S. Banerjee, *Selectively monitoring a network of network function chains based on probability of service level agreement violation*, US Patent Application US20180123930A1, May 2018.

Posters

- [1] B. Deng and W. Wu, “**Redundant logic elimination for network functions**,” in *Proceedings of the ACM SIGCOMM 2018 Conference*, ser. SIGCOMM Poster ’18, 2018.
- [2] K. He, W. Qin, Q. Zhang, W. Wu, J. Yang, T. Pan, C. Hu, J. Zhang, A. Akella, and Y. Zhang, “**Improving latency and burst-tolerance for software rate limiters**,” in *Presented in the 14th USENIX Symposium on Networked Systems Design and Implementation*, ser. NSDI Poster ’17, 2017.

- [3] C. Liu, Y. Cui, W. Wu, and J. Wu, “**Protecting privacy of nf states in nfv management systems with trusted execution environment**,” in *Proceedings of the 2017 Asia-Pacific Workshop on Networking*, ser. APNet Poster '17, 2017.
- [4] W. Wu and Y. Zhang, “**Lancet: Extracting forwarding models from nf programs**,” in *Proceedings of the 2017 IEEE Conference on Computer Communications*, ser. INFOCOM Poster '17, 2017.
- [5] W. Wu, G. Wang, A. Akella, and A. Shaikh, “**Virtual network diagnosis as a service**,” in *Proceedings of 2014 Open Networking Summit*, ser. ONS Poster '14, 2014.
- [6] W. Wu, Y. Turner, and M. Schlansker, “**Routing optimization for ensemble routing**,” in *Proceedings of the 2011 ACM/IEEE Seventh Symposium on Architectures for Networking and Communications Systems*, ser. ANCS Poster '11, 2011.

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