

Hui Lu

CONTACT INFORMATION	Department of Computer Science Binghamton University PO Box 6000 Binghamton, NY 13902-6000 http://www.cs.binghamton.edu/~huilu/	<i>Phone:</i> (765) 602-9423 <i>Email:</i> huilu@binghamton.edu
RESEARCH INTERESTS	Serverless Computing, System Virtualization, Cloud Computing, Cloud Storage Systems, Operating Systems	
EDUCATION	Purdue University Ph.D. in Computer Science <i>Advisors: Professor Dongyan Xu</i>	August 2012 - August 2017 West Lafayette, IN
	Shanghai Jiao Tong University M.E. in Electronic Engineering <i>Advisor: Professor Hongkai Xiong</i>	September 2006 - March 2009 Shanghai, China
	Shanghai Jiao Tong University B.E. in Electronic Engineering	September 2002 - July 2006 Shanghai, China
PROFESSIONAL EXPERIENCE	Assistant Professor SUNY Binghamton University Intel Asia-Pacific R&D Center	August 2017 - Now New York, USA
	Performance Engineer Software and Solution Group Intel Asia-Pacific R&D Center	March 2009 - July 2012 Shanghai, China
PUBLICATIONS	<ol style="list-style-type: none">1. Jiaxin Lei, Kun Suo, Hui Lu, Jia Rao, “Tackling Parallelization Challenges of Kernel Network Stack for Container Overlay Networks”, <i>In Proceedings of 11th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud’19)</i>, Renton, WA, July 2019.2. Gourav Rattihalli, Madhusudhan Govindaraju, Hui Lu, Devesh Tiwari, “Exploring Potential for Non-Disruptive Vertical Auto Scaling and Resource Estimation in Kubernetes”, <i>In Proceedings of IEEE International Conference for Cloud Computing (Cloud 2019, Invited Track)</i>, Milan, Italy, July 2019.3. Hui Lu, Abhinav Srivastava, Yu Sun, “ShadeNF: Testing Online Network Functions”, <i>In Proceedings of IEEE International Conference on Cloud Engineering (IC2E 2019)</i>, Prague, Czech Republic, June, 2019.4. Spoorti Doddamani, Piush Sinha, Hui Lu, Kevin Cheng, Hardik Bagdi, and Kartik Gopalan, “Fast and Live Hypervisor Replacement”, <i>In Proceedings of the 15th ACM SIGPLAN/SIGOPS international conference on Virtual Execution Environments VEE 2019</i>, Providence, Rhode Island, April 2019.5. Piush Kumar Sinha, Spoorti Doddamani, Hui Lu, Kartik Gopalan, “mWarp: Accelerating Intra-Host Live Container Migration via Memory Warping”, <i>In 2019 IEEE INFOCOM Workshops: DCPPerf 2019: Big Data and Cloud Performance Workshop (DCPerf</i>	

2019 @ INFOCOM Workshops), Paris, France, April, 2019.

6. Yu Sun, **H. Lu**, A. Srivastava, and C. Xu, “ShadeNF: A Platform for Online Network Function Verification”, In Proceedings of the ACM Symposium on Cloud Computing (SoCC '18 posster), Carlsbad, CA, October, 2018.
7. **H. Lu**, “Rethinking Cloud Storage System Software under Multi-Tenancy”, Ph.D. Dissertation in *Purdue University Theses and Dissertations*, 2017.
8. **H. Lu**, B. Saltaformaggio, C. Xu, U. Bellur, D. Xu, “BASS: Improving I/O Performance for Cloud Block Storage via Byte-Addressable Storage Stack”, In *ACM Symposium on Cloud Computing (SOCC '16)*, 2016. Acceptance rate: 25%.
9. **H. Lu**, A. Srivastava, B. Saltaformaggio, D. Xu, “StorM: Enabling Tenant-Defined Cloud Storage Middle-Box Services”, In *IEEE/IFIP International Conference on Dependable Systems and Networks (DSN '16)*, 2016. Acceptance rate: 22.3%.
10. **H. Lu**, B. Saltaformaggio, R. Kompella, D. Xu, “vFair: Latency-Aware Fair Storage Scheduling via Per-IO Cost-Based Differentiation”, In *ACM Symposium on Cloud Computing (SOCC '15)*, 2015. Acceptance rate: 21.6%.
11. **H. Lu**, C. Xu, C. Cheng, R. Kompella, D. Xu, “vHaul: Towards Optimal Scheduling of Live Multi-VM Migration for Multi-tier Applications”, In *IEEE International Conference on Cloud Computing (CLOUD '15, Applications Track)*, 2015. Acceptance rate: 14%.
12. **H. Lu**, N. Arora, H. Zhang, C. Lumezanu, J. Rhee, G. Jiang, “Hybnet: Network Manager for a Hybrid Network Infrastructure”, In *ACM/IFIP/USENIX International Middleware Conference (Middleware '13, Industry Track)*, 2013. Acceptance rate: 22.7%.
13. C. Xu, S. Gamage, **H. Lu**, R. Kompella, D. Xu, “vTurbo: Accelerating Virtual Machine I/O Processing Using Designated Turbo-Sliced Core”, In *USENIX Annual Technical Conference (USENIX ATC '13)*, 2013. Acceptance rate: 14.2%.
14. **H. Lu**, Y. Dong, J. Duan, K. Tian, “Virtualization Challenges: a View from Server Consolidation Perspective”, In *ACM SIGPLAN/SIGOPS conference on Virtual Execution Environments (VEE '12)*, 2012. Acceptance rate: 37.7%.
15. **H. Lu**, X. Zheng, Z. Huang, J. Duan, “Tackling the Challenges of Server Consolidation on Multi-Core Systems”, In *IEEE International Symposium on Workload Characterization (IISWC '10)*, 2010. Acceptance rate: 37.5%.
16. H. Xiong, **H. Lu**, Y. Zhang, L. Song, Z. He, T. Chen, “Subgraphs Matching-Based Side Information Generation for Distributed Multiview Video Coding”, In *EURASIP Journal on Advances in Signal Processing*, 2010.
17. X. Zhen, J. Duan, S. F. Akhter, Z. Yu, and **H. Lu**, “A Consolidation Workload Characterization Study on Modern Platform”, In *International Computer Measurement Group (CMG) Conference*, 2009.
18. **H. Lu**, H. Xiong, L. Song, Z. He, T. Chen, “Graph Matching Based Side Information Generation for Distributed Multi-View Video Coding”, In *IEEE International Conference on Communications (ICC '09)*, 2009.
19. **H. Lu**, “Side Information Generation for Distributed Multi-view Video Coding”,

Master Thesis in *Shanghai Jiao Tong University Theses and Dissertations*, 2009.

20. **H. Lu**, H. Xiong, Y. Zhang, Z. He, “Side Information Generation with Constrained Relaxation for Distributed Multi-View Video Coding”, In *IEEE International Symposium on Circuits and System (ISCAS '08)*, 2008.

21. Y. Zhang, H. Xiong, S. Yu, **H. Lu**, “A Source-Driven Error Recovery Scheme using Wyner-Ziv Coding”, In *IEEE International Conference Multimedia and Expo (ICME '07)*, 2007.

RESEARCH
EXPERIENCE

Assistant Professor August 2017 - Now
SUNY Binghamton University Binghamton, NY, USA

Research Assistant August 2012 - August 2017
Lab For Research In Emerging Networked and West Lafayette, IN, USA
Distributed Systems (FRIENDS), Purdue University

Research Intern June 2016 - September 2016
Microsoft Research Redmond, WA, USA

Research Intern May 2014 - August 2014
AT&T Research Lab Bedminster, NJ, USA

Research Intern May 2013- Aug 2013
NEC Laboratories America, Inc. Princeton, NJ, USA

Performance Engineer March 2009 - July 2012
Software and Solution Group Shanghai, China
Intel Asia-Pacific R&D Center

Research Assistant September 2006 - March 2009
Image, Video and Multimedia Communications Lab Shanghai, China
Shanghai Jiao Tong University

TEACHING

Teaching Experience
Instructor Fall 2019
Computer Science 350: Operating Systems
Binghamton University, Binghamton, NY
Enrolled students (38 undergraduate students)

Instructor Spring 2019
Computer Science 550: Operating Systems
Binghamton University, Binghamton, NY
Enrolled students (30 graduate students)

Instructor Fall 2018
Computer Science 580K/480K: Adv. Topics in Cloud Computing
Binghamton University, Binghamton, NY
Enrolled students (8 undergraduate students plus 30 graduate students)

Instructor Spring 2018

Computer Science 550: Operating Systems
Binghamton University, Binghamton, NY
Enrolled students (28 graduate students)

Instructor Fall 2017
Computer Science 580K/480K: Adv. Topics in Cloud Computing
Binghamton University, Binghamton, NY
Enrolled students (3 undergraduate students plus 34 graduate students)

GRANT
PROPOSALS

Awarded:

1. AFRL: “Enabling a Secure Embedded Cloud Infrastructure via seL4” (Feb. ~ Jul., 2019).
2. NSF: “CNS Core: Small: Collaborative: Salvaging Commodity Operating Systems to Support Emerging Networking Technologies” (2019 ~ 2022).
3. AFRL: Visiting Faculty Research Program (VFRP-EG) (Jun. ~ Aug., 2019).
4. AFRL: Visiting Faculty Research Program (VFRP-EG) Extension Grant (Sep. ~ Nov., 2019).

PATENT

Nipun Arora, Hui Zhang, Cristian Lumezanu, Junghwan Rhee, Guofei Jiang, Hui Lu,
“Hybrid Network Management”, US Patent Application, 14/453,054.

SERVICE

Panel

Serving on the NSF Proposal Review Panel, 2019.
Serving on the NSF Proposal Review Panel, 2018.

PC Member

The Eleventh International Conference on Cloud Computing, GRIDs, and Virtualization
(CLOUD COMPUTING) 2020
IEEE International Conference on Cloud Computing (IEEE Cloud) 2018, 2019
International Conference on Networking, Architecture, and Storage (NAS) 2018
The 5th International Conference on Big Data Computing and Communications (BIG-
COM 2019) 2019
International Conference on Computer Communications and Networks (ICCCN) 2018,
2019

Journal Reviewer

IEEE Transactions on Cloud Computing 2018, 2019
IEEE Transactions on Computers 2018, 2019
IEEE Access 2019
IEEE Transactions on Parallel and Distributed Systems 2018
IEEE Transactions on Dependable and Secure Computing 2016
IEEE Internet Computing 2015
ACM Transactions on Autonomous and Adaptive Systems 2015

External Reviewer

IEEE International Conference on Cloud Engineering (IC2E) 2017
Network and Distributed System Security Symposium (NDSS) 2017

ACM Conference on Computer and Communications Security (CCS)	2016
International Symposium on Research in Attacks, Intrusions, and Defenses (RAID)	2016
ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC)	2013, 2015, 2016
IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)	2016
International Conference on Parallel Processing (ICPP)	2016
IEEE International Conference on Autonomic Computing (ICAC)	2016
International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD)	2015
Workshop on Hot Topics in Cloud Computing (HotCloud)	2013, 2014
ACM Symposium on Cloud Computing (SOCC)	2014
The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC)	2013
Annual International Conference on Virtual Execution (VEE)	2013