

Timothy Wood, Ph.D
Associate Professor
Department of Computer Science
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Education

Ph.D. in Computer Science - September 2011
University of Massachusetts, Amherst, MA
Thesis: *Improving Data Center Resource Management, Deployment, and Availability with Virtualization*

M.S. in Computer Science - February 2009
University of Massachusetts, Amherst, MA

B.S. in Electrical & Computer Engineering, Highest Honors - May 2005
Rutgers University, Piscataway, NJ

Experience

Associate Professor, The George Washington University, Fall 2011-Present
Co-Director of GW Cloud Systems Lab

Research Assistant, UMass Amherst, Fall 2005-Summer 2011
Advisor: Prashant Shenoy

Research Intern, AT&T Research, Florham Park, NJ, Winter 2008 and Summer 2010
Mentors: Kobus Van der Merwe and K.K. Ramakrishnan

Research Intern, HP Labs, Palo Alto, CA, Summer 2007 - Fall 2008
Mentor: Lucy Cherkasova

Research and Teaching Summary

Focus Areas: Distributed Systems, Cloud Computing, Virtualization, NFV, and SDN

3 Best Paper Awards Google Scholar Citations: 4000+ H-index: 22

Research funded by NSF CAREER, NSF CNS, NSF SaTC, Google, and Comcast. GW Total: \$1,074,252

Graduated 1 PhD student, now at IBM Research, TJ Watson. 6 current Ph.D. students (1 is co-advised)

Advised 11 undergraduate, 2 MS, and 3 high school students in research; 3 are now at top PhD programs

3 Teaching Awards 14 courses taught in 5 years Avg. Instructor Rating: 4.6/5

Refereed Conferences and Workshops

In my area of computer science, selective peer-reviewed conferences and workshops, typically run by ACM, USENIX, and IEEE, are the preferred venue for impactful publications. Acceptance rates are listed where known, and for top venues are typically in the 15-30% range. See "Evaluating Computer Scientists for Promotion and Tenure," from the Computing Research Association for more information. Student authors are typically listed first.

1. NFVnice: Dynamic Backpressure and Scheduling for NFV Service Chains.

Sameer Kulkarni, Wei Zhang, Jinho Hwang, Shriram Rajagopalan, K.K. Ramakrishnan, Timothy Wood, Mayutan Arumaithurai, and Xiaoming Fu. *ACM SIGCOMM*, August 2017. (14% acceptance)

2. Design Challenges for High Performance, Scalable NFV Interconnects.

Guyue Liu, K.K. Ramakrishnan, Mike Schlansker, Jean Tourrilhes, and Timothy Wood. *ACM SIGCOMM Workshop on Kernel-Bypass Networks (KBNets 17)*, August 2017. (40% acceptance)

- 3. Flurries: Countless Fine-Grained NFs for Flexible Per-Flow Customization.**
Wei Zhang, Jinho Hwang, Shriram Rajagopalan, K.K. Ramakrishnan, and Timothy Wood. *ACM Co-NEXT*, December 2016. (18% acceptance)
- 4. SDNFV: Flexible and Dynamic Software Defined Control of an Application- and Flow-Aware Data Plane.** Wei Zhang, Guyue Liu, Timothy Wood, K.K. Ramakrishnan, Jinho Hwang. *ACM/USENIX Middleware*, December 2016. (19% acceptance)
- 5. Netalytics: Cloud-Scale Application Performance Monitoring with SDN and NFV.** Guyue Liu, Michael Trotter, Yuxin Ren, and Timothy Wood. *ACM/USENIX Middleware 2016*. (19% acceptance).
- 6. OpenNetVM: A Platform for High Performance Network Service Chains.**
Wei Zhang, Guyue Liu, Wenhui Zhang, Neel Shah, Phillip Lopreiato, Gregoire Todeschi, K.K. Ramakrishnan, and Timothy Wood. *ACM SIGCOMM Workshop on Hot Topics in Middleboxes and Network Function Virtualization (HotMiddlebox 16)*, August 2016. (34% acceptance)
- 7. NetKV: Scalable, Self-Managing, Load Balancing as a Network Function.**
Wei Zhang, Timothy Wood, and Jinho Hwang. *IEEE International Conference on Autonomic Computing (ICAC 16)*, July 2016. (27% acceptance rate, winner of the Karsten Schwan Best Paper Award)
- 8. Toward Online Virtual Network Function Placement in Software Defined Networks.**
Bowu Zhang, Jinho Hwang, Timothy Wood. *IEEE/ACM International Symposium on Quality of Service (IWQoS)*, June 2016. (short paper)
- 9. Scalable Cloud Security via Asynchronous Virtual Machine Introspection.**
Sundaresan Rajasekaran, Zhen Ni, Harpreet Singh Chawla, Neel Shah, Timothy Wood, Emery Berger. *USENIX Workshop on Hot Topics in Cloud Computing (HotCloud 16)*, June 2016. (30% acceptance)
- 10. Performance Management Challenges for Virtual Network Functions.**
Wei Zhang, Timothy Wood, Jinho Hwang, Shriram Rajagopalan, and K.K. Ramakrishnan. *IEEE Conference on Network Softwarization (NetSoft 16)*, June 2016. (short paper)
- 11. Teaching Design Thinking, Writing, and Oral Presentation: Lessons Learned from the Computer Science Senior Design Course at GW.** Gabriel Parmer, Rahul Simha, Chris Toombs, Poorvi Vora, and Timothy Wood. *ASEE Middle Atlantic Section Spring 2016 Conference*, April 2016.
- 12. Multi-Cache: Dynamic, Efficient Partitioning for Multi-Tier Caches in Consolidated VM Environments.** Sundaresan Rajasekaran, Shaohua Duan, Wei Zhang, and Timothy Wood. *IEEE International Conference on Cloud Engineering (IC2E)*, April 2016. (23% acceptance)
- 13. IOchestra: Supporting High-performance Data-intensive Applications in the Cloud via Collaborative Virtualization.** Ron C. Chiang, H. Howie Huang, Timothy Wood, Changbin Liu, Oliver Spatscheck. *International Conference for High Performance Computing, Networking, Storage and Analysis (SC 15)*, November 2015. (22% acceptance)
- 14. Protocols to support autonomy and control for NFV in software defined networks.**
A. Mohammadkhan, Guyue Liu, Wei Zhang, K.K. Ramakrishnan, T. Wood. *IEEE Conference on Network Function Virtualization and Software Defined Network (NFV-SDN)*, November 2015.
- 15. Towards Security-Aware Virtual Server Migration Optimization to the Cloud.**
Bowu Zhang, Jinho Hwang, Liran Ma, Timothy Wood. *IEEE International Conference on Autonomic Computing (ICAC 15)*, July 2015. (27% acceptance)
- 16. Virtual Function Placement and Traffic Steering in Flexible and Dynamic SDNs.**
Ali Mohammadkhan, Sheida Ghapani, Guyue Liu, Wei Zhang, K. K. Ramakrishnan, Timothy Wood. *IEEE International Workshop on Local and Metropolitan Area Networks (LANMAN 15)*, April 2015.
- 17. Cloud-Scale Application Performance Monitoring with SDN and NFV.**
Guyue Liu, Timothy Wood. *IEEE International Workshop on Cloud Analytics (IWCA15)*, March 2015.

- 18. SmartSwitch: Blurring the Line Between Network Infrastructure & Cloud Applications.**
Wei Zhang, Timothy Wood, K.K. Ramakrishnan, Jinho Hwang. *Usenix Workshop on Hot Topics in Cloud Computing (HotCloud)*, June 2014. (30% acceptance)
- 19. Load Balancing of Heterogeneous Workloads in Memcached Clusters.**
Wei Zhang, Timothy Wood, H. Howie Huang, Jinho Hwang, K.K. Ramakrishnan. *Usenix International Workshop on Feedback Computing*, June 2014.
- 20. Matrix: Achieving Predictable Virtual Machine Performance in the Clouds.**
Ron C. Chiang, Jinho Hwang, Howie Huang, Timothy Wood. *USENIX International Conference on Autonomic Computing (ICAC 2014)*, June 2014. (22% acceptance)
- 21. UniCache: Hypervisor Managed Data Storage in RAM and Flash.**
Jinho Hwang, Wei Zhang, Ron C. Chiang, Timothy Wood, Howie Huang. *IEEE International Conference on Cloud Computing (CLOUD)*, June 2014. (20% acceptance)
- 22. MIMP: Deadline and Interference Aware Scheduling of Hadoop Virtual Machines.**
Wei Zhang, Sundaresan Rajasekaran, Timothy Wood, and Mingfa Zhu, *IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, May 2014. (19% acceptance)
- 23. NetVM: High Performance and Flexible Networking using Virtualization on Commodity Platforms.** Jinho Hwang, K.K. Ramakrishnan, and Timothy Wood, *USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, April 2014. (18% acceptance)
- 24. Topology Discovery & Service Classification for Distributed-Aware Clouds.**
Jinho Hwang, Guyue Liu, Sai Zeng, Frederick y Wu, Timothy Wood, *IEEE International Workshop on Cloud Analytics (IWCA)*, March 2014.
- 25. Mortar: Filling the Gaps in Data Center Memory.**
Jinho Hwang, Ashen Uppal, Timothy Wood, Howie Huang, *ACM International Conference on Virtual Execution Environments (VEE)*, March 2014. (36% acceptance)
- 26. HybridMR: A Hierarchical MapReduce Scheduler for Hybrid Data Centers.**
Bikash Sharma, Timothy Wood, and Chita R. Das, *IEEE International Conference on Distributed Computing Systems (ICDCS 2013)*, July 2013. (13% acceptance)
- 27. Firewall Performance Optimization using Data Mining Techniques.**
Umniya Mustafa, Mohammad M. Masud, Zouheir Travelsi, Timothy Wood, and Zainab Al Harthi, *IEEE International Wireless Communications and Mobile Computing Conference - Security, Trust and Privacy Symposium (IWCMC'13)*, July 2013.
- 28. Big Data in the Background: Maximizing Productivity while Minimizing VM Interference.**
Wei Zhang, Sundaresan Rajasekaran, Timothy Wood, *Workshop on Architectures and Systems for Big Data (co-located with ISCA 2013)*, June 2013.
- 29. Adaptive Performance-Aware Distributed Memory Caching.**
Jinho Hwang and Timothy Wood, *USENIX International Conference on Autonomic Computing (ICAC 2013)*, June 2013. (22% acceptance)
- 30. A Component Based Performance Comparison of Four Hypervisors.**
Jinho Hwang, Sai Zeng, Frederick y Wu, Timothy Wood, *IFIP/IEEE Integrated Network Management Symposium (IM 2013)*, May 2013. (27% acceptance)
- 31. Benefits and Challenges of Managing Heterogeneous Data Centers.**
Jinho Hwang, Sai Zeng, Frederick y Wu, Timothy Wood, *IFIP/IEEE Integrated Network Management Symposium - Experience Sessions (IM 2013)*, May 2013.
- 32. An Empirical Study of Memory Sharing in Virtual Machines.**
Sean Barker, Timothy Wood, Prashant Shenoy, and Ramesh Sitaraman. *USENIX Annual Technical Conference*, June 2012. (14% acceptance)

33. Seagull: Intelligent Cloud Bursting for Enterprise Applications.

Tian Guo, Upendra Sharma, Timothy Wood, Sambit Sahu, and Prashant Shenoy. *USENIX Annual Technical Conference (short paper)*, June 2012.

34. Adaptive Dynamic Priority Scheduling for Virtual Desktop Infrastructures.

Jinho Hwang, and Timothy Wood, *IEEE International Workshop on Quality of Service (IWQoS)*, June 2012. (22% acceptance, Best Student Paper Award)

35. PipeCloud: Using Causality to Overcome Speed-of-Light Delays in Cloud-Based Disaster Recovery.

Timothy Wood, Andres Lagar-Cavilla, K. K. Ramakrishnan, Prashant Shenoy, and Jacobus Van der Merwe. *ACM Symposium on Cloud Computing (SOCC)*, October 2011. (17% acceptance)

36. BenchLab: An Open Testbed for Realistic Benchmarking of Web Applications.

Emmanuel Cecchet, Veena Udayabhanu, Timothy Wood, and Prashant Shenoy. *USENIX Conference on Web Application Development (WebApps)*, June 2011.

37. ZZ and the Art of Practical BFT Execution.

Timothy Wood, Rahul Singh, Arun Venkataramani, Prashant Shenoy, and Emmanuel Cecchet. *The European Systems Conference (EuroSys)*, April 2011. (15% acceptance)

38. CloudNet: Dynamic Pooling of Cloud Resources by Live WAN Migration of Virtual Machines.

Timothy Wood, K.K. Ramakrishnan, Jacobus van der Merwe, and Prashant Shenoy. *ACM International Conference on Virtual Execution Environments (VEE)*, March 2011. (29% acceptance)

39. Disaster Recovery as a Cloud Service: Economic Benefits & Deployment Challenges.

Timothy Wood, Emmanuel Cecchet, K.K. Ramakrishnan, Prashant Shenoy, Jacobus van der Merwe, and Arun Venkataramani. *Workshop on Hot Topics in Cloud Computing (HotCloud)*, June 2010. (24% acceptance)

40. The Case for Enterprise Ready Virtual Private Clouds.

Timothy Wood, Alexandre Gerber, K.K. Ramakrishnan, Jacobus van der Merwe, and Prashant Shenoy. *Workshop on Hot Topics in Cloud Computing (HotCloud)*, June 2009. (32% acceptance)

41. Memory Buddies: Exploiting Page Sharing for Smart Colocation in Virtualized Data Centers.

Timothy Wood, Gabriel Tarasuk-Levin, Prashant Shenoy, Peter Desnoyers, Emmanuel Cecchet, and Mark Corner. *International Conference on Virtual Execution Environments (VEE)*, March 2009. (35% acceptance. Best Paper Award)

42. Profiling and Modeling Resource Usage of Virtualized Applications.

Timothy Wood, Ludmila Cherkasova, Kivanc Ozonat, and Prashant Shenoy. *ACM International Middleware Conference*, December 2008. (17% acceptance)

43. Black-box and Gray-box Strategies for Virtual Machine Migration.

Timothy Wood, Prashant Shenoy, Arun Venkataramani, and Mazin Yousif. *Usenix Symposium on Networked Systems Design and Implementation (NSDI)*, April 2007. (24% acceptance)

44. Efficient Data Migration in Self-managing Storage Systems.

Vijay Sundaram, Timothy Wood, and Prashant Shenoy. *Third International Conference on Autonomic Computing, Dublin (ICAC)*, June 2006. (short paper)

45. The Feasibility of Launching and Detecting Jamming Attacks in Wireless Networks.

Wenyuan Xu, Wade Trappe, Yanyong Zhang, and Timothy Wood. *ACM MobiHoc*, May 2005. (14% acceptance)

46. Channel Surfing and Spatial Retreats: Defenses Against Wireless Denial of Service.

Wenyuan Xu, Timothy Wood, Wade Trappe, and Yanyong Zhang. *Workshop on Wireless Security*, 2004.

Journal Articles

- 1. Towards a Software-Based Network: Integrating Software Defined Networking and Network Function Virtualization.** Timothy Wood, K.K. Ramakrishnan, Jinho Hwang, Guyue Liu, Wei Zhang. *IEEE Network*, June 2015.
- 2. NetVM: High Performance and Flexible Networking Using Virtualization on Commodity Platforms.** Jinho Hwang, K.K. Ramakrishnan, Timothy Wood. *IEEE Transactions on Network and Service Management (TNSM)*, March 2015.
- 3. CloudNet: Dynamic Pooling of Cloud Resources by Live WAN Migration of Virtual Machines.** Timothy Wood, K.K. Ramakrishnan, Prashant Shenoy, Jacobus van der Merwe, Jinho Hwang, Guyue Liu, and Lucas Chaufourmier. *ACM/IEEE Transactions on Networking*, October 2015.
- 4. Minimizing Interference and Maximizing Progress for Hadoop Virtual Machines.** Wei Zhang, Sundaresan Rajasekaran, Shaohua Duan, Timothy Wood, Mingfa Zhu. *ACM SIGMETRICS Performance Evaluation Review*, March 2015.
- 5. Cost-aware Cloud Bursting for Enterprise Applications.** Tian Guo, Upendra Sharma, Prashant Shenoy, Timothy Wood, and Sambit Sahu. *ACM Transactions on Internet Technology*, May, 2014.
- 6. Enterprise-Ready Virtual Cloud Pools: Vision, Opportunities, and Challenges.** Timothy Wood, K. K. Ramakrishnan, Prashant Shenoy, and Jacobus Van der Merwe, *Oxford Computer Journal*, June, 2012.
- 7. Modellus: Automated Modeling of Complex Data Center Applications.** Peter Desnoyers, Timothy Wood, Prashant Shenoy, Rahul Singh, Sangameshwar Patil, and Harrick Vin. *ACM Transactions on the Web*, May, 2012.
- 8. Sandpiper: Black-box and Gray-box Resource Management for Virtual Machines.** Timothy Wood, Prashant Shenoy, Arun Venkataramani, and Mazin Yousif. *Elsevier Computer Networks: Special Issue on Resource Management in Virtualized Data Centers (53)*, 2009.
- 9. Memory Buddies: Exploiting Page Sharing for Smart Colocation in Virtualized Data Centers.** Timothy Wood, Gabriel Tarasuk-Levin, Prashant Shenoy, Peter Desnoyers, Emmaneul Cecchet, and Mark Corner. *ACM SIGOPS Operating Systems Review (43)*, July 2009.
- 10. Agile Dynamic Provisioning of Multi-tier Internet Applications.** Bhuvan Uргаonkar, Prashant J. Shenoy, Abhishek Chandra, Pawan Goyal, and Timothy Wood. *ACM Transactions on Autonomous and Adaptive Systems (3)*, 2008.

Patents

Pipelined data replication for disaster recovery

Kadangode K. Ramakrishnan, Horacio Andres Lagar-Cavilla, Prashant Shenoy, Jacobus Van Der Merwe, and Timothy Wood, US Patent Application, 2013

Methods and apparatus to migrate virtual machines between distributive computing networks across a wide area network

Kadangode K. Ramakrishnan, Jacobus Van Der Merwe, Prashant Shenoy, and Timothy Wood, US Patent #8,473,557. Issued June 25, 2013

Optimizing a prediction of resource usage of multiple applications in a virtual environment

Timothy Wood and Ludmila Cherkasova, US Patent #8,180,604. Issued May 15, 2012

Optimizing a prediction of resource usage of an application in a virtual environment

Ludmila Cherkasova and Timothy Wood, US Patent #8,145,456. Issued March 27, 2012

Predicting resource usage of an application in a virtual environment

Ludmila Cherkasova and Timothy Wood, US Patent #8,145,455. Issued March 27, 2012

Accuracy in a prediction of resource usage of an application in a virtual environment

Timothy Wood and Ludmila Cherkasova, US Patent #8,131,519. Issued March 6, 2012

Detecting an error in a prediction of resource usage of an application in a virtual environment

Timothy Wood and Ludmila Cherkasova, US Patent #7,818,145. Issued Oct 19, 2010

Invited Talks

“OpenNetVM NFV Platform Tutorial” - Keynote talk at CleanSky ITN Conference, August 2016

“Finding the Right Abstractions for Cloud and Network Virtualization” - Cloud Control Workshop, 2016

“Puncturing Abstractions in Server and Network Function Virtualization” - Keynote talk at Virtualization Technologies Workshop, December 2015

“Building Flexible, Dynamic Networks with Software Defined Network Function Virtualization” - IBM Research T.J. Watson, August 2015

“Is the Cloud your Network, your Data Center, or Both?” - Dagstuhl Seminar on Distributed Cloud Computing, February 2015

“Building Flexible, Dynamic Networks with Software Defined Network Function Virtualization” - William and Mary, September 2014

“Panel: The Convergence of the Cloud, Big Data, and Mobile” - IEEE IWCA, March 2014

“Cloud Computing: A Million Computers in the Sky?” - Loyola University Spring Science Seminar, 2013

“Using Platform Diversity to Lower Cost and Improve Performance in the Cloud” - Virginia Tech, September 2012

Honors and Awards

GW SEAS Outstanding Junior Researcher Award, 2017

GW SEAS Faculty Recognition Award, 2016

Karsten Schwan Best Paper Award, IEEE International Conference on Autonomic Computing, 2016

Runner-up, GW SEAS Faculty Recognition Award, 2015

GW ACM Professor of the Year Award, 2015

GW SEAS Outstanding Teacher Award for an Assistant Professor, 2014

NSF CAREER Award, 2013

GW Excellence in Safety & Security Award, 2013

GW Engineer’s Council CS Professor of the Year, 2013

Best Student Paper Award, IEEE International Workshop on Quality of Service, 2012

Outstanding Dissertation Award, University of Massachusetts Amherst CS Department, 2011

Ph.D Thesis nominated for the ACM's Doctoral Dissertation Award, 2011

Best Paper Award, ACM Virtual Execution Environments Conference, 2009

Passed Ph.D Candidacy Exam with Distinction, 2008 (one of two per year in U.Mass CS)

Funding

(Funding amounts for NSF grants are GW portion, including REU supplements)

NSF SaTC: EVADE: Evidence Assisted Detection and Elimination of Security Vulnerabilities,

PI: Timothy Wood (GW), PI: Emery Berger (UMass Amherst) (\$266,000 - Aug 2015-2017).

Comcast Technology Research and Development Fund: Automated Management of Flexible Resource Pools in Cloud Data Centers, PI: Howie Huang, Co-PI: Timothy Wood (\$40,000 - Fall 2015)

GW-KU: International Big Data Collaboration, PI: Hanseok Ko (Korea University), Co-PI: Timothy Wood, Co-PI: Claire Monteleoni, Co-PI: Murray Loew (\$20,000 - Summer 2015)

NSF NeTS: SDNFV - Flexible, High Performance Network and Data Center Virtualization, PI: Timothy Wood (GW), PI: KK Ramakrishnan (UC Riverside) (\$295,899 - October 2014-2017).

Google Research Award, PI: Haris Gavranovic (Univ. of Sarajevo), Co-PI: Timothy Wood (\$48,000 - February 2014-2015)

Yahoo! Servers To Academic Researchers (STAR), PI: Timothy Wood (Donation of 30 servers, valued at \$13,950 - 2013)

DC I-Corps: Cloud Advisor, PI: Howie Huang, Co-PI: Timothy Wood (\$5,000 - October 2013)

NSF CAREER: Application-agnostic, Distributed-Aware Cloud Platforms, PI: Timothy Wood (\$426,487 - June 2013-May 2018).

GW UFF: Maximizing the Performance and Energy Efficiency of Many-Core Servers in Cloud Data Centers, PI: Timothy Wood (\$20,316 - July 2013-June 2014)

Amazon AWS in Education Coursework Grant, PI: Timothy Wood (\$7,600 in AWS credits - 2012-2014)

Professional Service

Member of ACM, IEEE, and USENIX professional associations.

PC, USENIX Network Systems Design and Implementation (NSDI 2017)

PC, ACM Asia-Pacific Workshop on Systems (APSys 2017)

Student Activities Chair, ACM/IFIP/USENIX Middleware Conference (2017)

PC, USENIX Annual Technical Conference (USENIX ATC 2017)

PC, International Teletraffic Congress (ITC 2017)

TPC Co-Chair, International Symposium On Local And Metropolitan Area Networks (LANMAN 2017)

Local Arrangements Chair, Privacy-Aware Computing Conference (PAC 2017)

Proceedings Chair, IEEE International Conference on Autonomic Computing (ICAC 2017)

Co-chair, ACM Cloud-Assisted Networking Workshop, co-located with CoNEXT (CAN 2016)

PC, IEEE International Conference on Network Protocols (ICNP 2016)

PC, IEEE International Conference on Cloud Computing (CLOUD 2016)

PC, ACM/IFIP/USENIX Middleware Conference (Middleware 2014, 2015, 2016)

PC, IEE Workshop on Local and Metropolitan Area Networks (LANMAN 2015, 2016)

PC, IEEE International Conference on Parallel Processing (ICPP 2016)

PC, IEEE Workshop on Container Technologies and Container Clouds (WoC 2016)

PC, IEEE International Conference on Distributed Computing Systems (ICDCS 2015, 2016)

Publicity Co-Chair, IEEE International Conference on Performance Engineering (ICPE 2016)

PC, IEEE International Conference on Cloud Engineering (IC2E 2016)

PC, Student Workshop co-located with ACM CoNEXT 2015

PC, IEEE International Conference on Cloud and Autonomic Computing (CAC 2015)

PC, IEEE Conf. on Network Function Virtualization and Software Defined Networks (NFV-SDN 2015)

Poster Session PC, ACM/IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC 2015)

PC, IEEE International Conference on Computer Communications and Networks (ICCN 2015)

Co-Chair, IEEE International Workshop on Cloud Analytics (IWCA 2015)

PC, International Conference on Autonomic Computing (ICAC 2014, 2015)

PC, ACM International Conference on Virtual Execution Environments (VEE 2015)
 PC, ACM/IEEE Symposium on Cluster, Cloud, and Grid Computing (CCGrid 2013, 2014, 2015)
 PC, Distributed Storage Systems and Coding for Big Data (2014)
 PC, Distributed Cloud Computing Workshop at SIGCOMM (DCC 2014)
 PC, IEEE GLOBECOM SAC Cloud Networks track (2014)
 PC, IEEE International Conference on Networking, Architecture, and Storage (NAS 2014)
Publicity Chair, ACM/IFIP/USENIX Middleware (2014)
 PC, IEEE International Workshop on Cloud Analytics (IWCA 2014)
 PC, IEEE International Conference on Big Data (BigData 2013)
 PC, IEEE International Conference on Cloud Networking (CLOUDNET 2013)
Poster Session Chair, ACM/IEEE International Symposium on Quality of Service (IWQoS 2013)
 PC, ACM/IEEE International Conference on Utility and Cloud Computing (UCC 2010, 2011, 2012, 2013)
 PC, International Workshop on Analytics Services on the Cloud (ASC 2012)
 PC, Symposium on Computer Architecture & High Performance Computing (SBAC-PAD 2012, 2013)
 PC, IEEE International Conference on Cloud and Green Computing (CGC 2011, 2012)
Grant Panelist: NSF NeTS, NSF CSR, NSF SaTC, NSF CAREER

Teaching and Mentoring

Courses Taught

Semester	Course	* denotes co-taught courses	Students	Rating
Spring 2016	CSci 4244: Capstone Senior Design Projects II*		26	4.1
Fall 2015	CSci 4243: Capstone Senior Design Projects I*		28	4.1
Fall 2015	CSci: 6421: Distributed Systems		42	4.7
Spring 2015	CSci 6907: Advanced Systems Network Programming		12	5
Spring 2015	CSci 4244: Capstone Senior Design Projects II		11	5
Fall 2014	CSci 4243: Capstone Senior Design Projects I		11	5
Spring 2014	CSci 4244: Capstone Senior Design Projects II*		18	4.3
Fall 2013	CSci 4243: Capstone Senior Design Projects I*		18	4.3
Fall 2013	CSci 2113: Software Engineering		37	4.2
Spring 2013	CSci 3907/6907.83: Advanced Operating and Distributed Systems*		22	4.8
Fall 2012	CSci 2113: Software Engineering		34	4.7
Fall 2012	CSci 3411: Operating Systems*		32	4.6
Spring 2012	CSci 3907/6907.83 Cloud Computing & Data Centers Seminar		25	4.6
Fall 2011	CSci 2113: Software Engineering		27	4.5

Graduated Research Advisees (1 PhD, 2 MS, and 2 Undergraduate)

Jinho Hwang, Ph.D. advisor. *Defended Ph.D. Thesis, "Improving and Repurposing Data Center Resource Usage with Virtualization" in November 2013, joined IBM Research, TJ Watson.*

Shaohua Duan, M.S. research advisor. *Graduated 2015, joined Rutgers Ph.D. program.*

Chenghu He, M.S. research advisor. *Graduated 2015, joined EMC Cloud Storage group.*

Lucas Chaufourmier, undergraduate research advisor. *Graduated 2015, joined UMass Amherst Ph.D.*

Rian Shambaugh, undergraduate research advisor. *Graduated 2015, joined UMass Amherst Ph.D.*

Current Ph.D. (6) and M.S. (1) Research Students

Sundaresan Rajasekaran, Ph.D. Advisor. *Passed Preliminary Exam in 2013.*

Guyue Liu, Ph.D. Advisor. *Entered program in 2013.*

Zhen Ni, Ph.D. Advisor. *Entered program in 2013.*

Yuxin Ren, Ph.D. Co-Advisor with Gabe Parmer. *Entered program in 2013.*

Wei Zhang, Ph.D. Advisor. *Entered program in 2015. Visiting Scholar, 2012-2014.*

Harpreet Singh Chawla, M.S. Research Advisor. *Entered program in 2015.*

Michael Trotter, Ph.D. Advisor. *Entered program in 2016.*

Undergraduate (16), High School (3), and Visiting (3) Research Students

Vlad Nitu. Visitor from INP ENSEEIHT, France. OS Support for NFV. Summer 2017

Riley Kennedy. NetVM Platform Development. Spring-Summer 2017

Pat Cody. NetVM Platform Development. Spring-Summer 2017

Mykola Yurchenko. NetVM Platform Development. Spring 2017

Aaron Coplan. NetVM Platform Development. Spring 2017

Chris Quion. NetVM Platform Development. Spring 2017

Zoe Chen. High school student. NetVM Platform Development. Summer 2016

Adam Shimi. Visitor from INP ENSEEIHT, France. NFV Management. Summer 2016

Neel Shah. NetVM Platform Development, Summer 2014 - Spring 2016

Philip Lopreiato. NetVM Platform Development, Fall 2014 - Spring 2016

Gregoire Todeschi. Visitor from INP ENSEEIHT, France. NetVM Platform Development. Summer 2015

Abhishek Mishra. High school student. Storage Backup Systems. Summer 2015

Ashley Nobi. High school student. NetVM Platform Development. Summer 2015

Warren Smith. NetVM Platform Development. Summer 2015

Abigail Shriver. Scheduling Jobs in Data Center Clusters, Summer 2014

Eli Katz. Measuring VM I/O Overheads, Summer 2014

Lucas Chaufourmier. Automating Linux Server Management and Security, Spring 2013 - Spring 2015

Ben Carleton. Network Management for a Cloud Computing Testbed, Spring 2014

Rian Shambaugh. Blog-based Web Server Benchmarking, Summer 2013 - Spring 2014

Saurabh Singh and Aaron Pollon. Characterizing Video Game Server Workloads, Spring 2013

Anthony Korzan. Building and Optimizing a Cloud Computing Testbed, Spring-Summer 2012