

Guyue (Grace) Liu

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RESEARCH INTERESTS	Computer Networks (NFV, SDN), Distributed Systems, Cloud Computing and Big Data	
EDUCATION	George Washington University	Sept 2013 - May 2019 (Expected)
	Ph.D., Computer Science Advisor: Timothy Wood Thesis: <i>Designing customizable abstractions for high performance network functions</i>	
	Stony Brook University	Aug 2012 - Aug 2013
	Ph.D., Computer Engineering	
	Beijing University of Posts and Telecommunications	Sept 2008 - July 2012
	B.S., Electrical Engineering, Rank: 4 / 145 Thesis: <i>Optimizing live migration of virtual machines</i>	
PROFESSIONAL EXPERIENCE	Research Intern, Microsoft Research	Jun 2018 - Sept 2018
	<ul style="list-style-type: none">Project: A Real-Time Pipeline for a Large-Scale Machine Learning SystemMentor: Dany Fabian, Manager: John Winn	
	Research Intern, Hewlett Packard Labs	Jun 2016 - May 2017
	<ul style="list-style-type: none">Project: A Scalable and Predicable NFV Platform for Rack-Scale ArchitectureMentor: Jean Tourrilhes, Manager: Sujata Banerjee	
	Research Intern, BBN Technologies	May 2015 - Aug 2015
	<ul style="list-style-type: none">Project: Real Time Network and Application Performance Monitoring FrameworkMentor: Niky Riga, Manager: Chip Elliott	
	Research Intern, Chinese Academy of Sciences	Sept 2011 - May 2012
	<ul style="list-style-type: none">Project: Optimizing Network Performance of Virtual Machine Live MigrationMentors: Yuzhong Sun and Ying Song	
	Summer Intern, Queen Mary, University of London	Summer 2011
	<ul style="list-style-type: none">Project: Elastic Message-oriented Middleware System on Top of Cloud PlatformMentors: Yasir Alfidhl and John Bigham	
AWARDS & HONORS	Best Student Paper Award and Outstanding Paper, IEEE RTAS	Apr 2018
	First Place in 22nd GENI Engineering Conference Competition	Mar 2015
	GWU 2015 SEAS R&D Showcase Finalists	Feb 2015
	HP Helion OpenStack Scholarship (4 / 200)	Dec 2014
	Winner of Summer Research Project in London (4 / 511)	July 2011
REFEREED CONFERENCE PUBLICATIONS	[SIGCOMM'18] G. Liu, Y. Ren, M. Yurchenko, K.K. Ramakrishnan, T. Wood, "Microboxes: High Performance NFV with Customizable, Asynchronous TCP Stacks and Dynamic Subscriptions", <i>ACM SIGCOMM</i> , August 2018. (18% acceptance)	
	[CoNext'18] S. Kulkarni, G. Liu, K.K. Ramakrishnan, M. Arumaithurai, T. Wood, X. Fu, "RE-INFORCE: Achieving Efficient Failure Resiliency for Network Function Virtualization based Services", <i>ACM CoNEXT</i> , December 2018. (17% acceptance)	

[RTAS'18] Y. Ren, **G. Liu**, G. Parmer, B. Brandenburg, "Scalable Memory Reclamation for Multi-Core, Real-Time Systems", *IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, April 2018. **Best Student Paper Award and Outstanding Paper**

[Middleware'16] **G. Liu**, M. Trotter, Y. Ren, T. Wood, "NetAlytics: Cloud-Scale Application Performance Monitoring with SDN and NFV", *ACM/IFIP/USENIX Middleware*, Dec 2016. (19% acceptance)

[Middleware'16] W. Zhang, **G. Liu**, A. Mohammadkhan, J. Hwang, K.K. Ramakrishnan, T. Wood. "SDNFV: Flexible and Dynamic Software Defined Control of an Application- and Flow-Aware Data Plane", *ACM/IFIP/USENIX Middleware*, Dec 2016. (19% acceptance)

[NFV-SDN'15] A. Mohammadkhan, **G. Liu**, W. Zhang, K.K. Ramakrishnan, T. Wood, "Protocols to Support Autonomy and Control for NFV in Software Defined Networks", *IEEE Network Function Virtualization & Software Defined Networks (NFV-SDN)*, Nov 2015.

Y. Ren, V. Nitu, **G. Liu**, R. Kennedy, Z. Yang, G. Parmer, A. Tchana, T. Wood, "Efficient, Dynamic Multi-tenant Edge Computation in EdgeOS", under review.

REFEREED WORKSHOP PUBLICATIONS

[KBNets'17] **G. Liu**, K.K. Ramakrishnan, M. Schlansker, J. Tourrilhes, T. Wood, "Design Challenges for High Performance, Scalable NFV Interconnects", *Workshop on Kernel-Bypass Networks (KBNets co-located with SIGCOMM'17)*, August 2017.

[HotMiddlebox'16] W. Zhang, **G. Liu**, W. Zhang, N. Shah, P. Lopeiato, G. Todeschi, K.K. Ramakrishnan, T. Wood, "OpenNetVM: A Platform for High Performance Network Service Chains", *Workshop on Hot Topics in Middleboxes and Network Function Virtualization (HotMiddlebox co-located with SIGCOMM'16)*, August 2016.

[Diversity'15] **G. Liu**, T. Wood, "NetDefense: Scalable, Flexible and Efficient DDoS Prevention with SDN and NFV", *Workshop on Supporting Diversity in Systems Researches (Diversity co-located with SOSP'15)*, Oct 2015.

[LANMAN'15] A. Mohammadkhan, S. Ghapani, **G. Liu**, W. Zhang, K.K. Ramakrishnan, T. Wood, "Virtual Function Placement and Traffic Steering in Flexible and Dynamic Software Defined Networks", *IEEE LANMAN Workshop*, April 2015.

[IWCA'15] **G. Liu**, T. Wood, "Cloud-Scale Application Performance Monitoring with SDN and NFV", *IEEE International Workshop on Cloud Analytics (IWCA co-located with IC2E'15)*, March 2015.

[IWCA'14] J. Hwang, **G. Liu**, S. Zeng, F. Wu, T. Wood, "Topology Discovery & Service Classification for Distributed-Aware Clouds", *IEEE International Workshop on Cloud Analytics (IWCA co-located with IC2E'14)*, March 2014.

POSTERS

[SATIS'18] **G. Liu**, Y. Ren, T. Wood, G. Parmer, "EdgeOS: A New OS for Multi-Tenant Edge Cloud", *ACM SIGOPS Summer School on Advanced Topics in Systems (SATIS)*, June 2018.

[SIGCOMM'18] **G. Liu**, Y. Ren, M. Yurchenko, K.K. Ramakrishnan, T. Wood, "Microboxes: High Performance NFV with Customizable, Asynchronous TCP Stacks and Dynamic Subscriptions", *ACM SIGCOMM*, August 2018.

[NSDI'15] **G. Liu**, T. Wood, "NetAlytics: Flexible and Dynamic Network Analysis Framework", *USENIX NSDI*, May 2015.

JOURNAL ARTICLES	[ToN'15] T. Wood, K.K. Ramakrishnan, P. Shenoy, J. Merwe, J. Hwang, G. Liu , L. Chaufournier, "CloudNet: Dynamic Pooling of Cloud Resources by Live WAN Migration of Virtual Machines", <i>IEEE/ACM Transactions on Networking</i> , Oct 2015.	
	[Network'15] T. Wood, K.K. Ramakrishnan, J. Hwang, G. Liu , W. Zhang, "Towards a Software-Based Network: Integrating Software Defined Networking and Network Function Virtualization", <i>IEEE Network</i> , May 2015.	
	[CJC'13] S. Liu, Y. Sun, G. Liu , "An Adaptive Bandwidth Allocation Algorithm for Live Migration Based on Service Features", <i>Chinese Journal of Computers</i> , Sept 2013.	
TEACHING EXPERIENCE	<i>Guest Lecturer, George Washington University</i>	
	<ul style="list-style-type: none"> CS 6421 Distributed Systems Fall 2018 <ul style="list-style-type: none"> – Introduction to Network Function Virtualization (NFV) – Introduction to Streaming Big Data CSci 6907.11: Special Topics - Advanced Network Systems Programming Spring 2015 <ul style="list-style-type: none"> – Global Environment for Network Innovations (GENI) Tutorial 	
	<i>Teaching Assistant, George Washington University</i>	
	<ul style="list-style-type: none"> CSCI 2113 Software Engineering Fall 2013 - Spring 2015 	
	<i>Teaching Assistant, Stony Brook University</i>	
GRANTS	<ul style="list-style-type: none"> ESE 124 Computer Techniques for Electronic Design I Spring 2013 ESE 123 Introduction to Electrical and Computer Engineering Fall 2012 	
	NSF Travel Grant for attending ONAP Academic Summit	Oct 2018
	GWU Grace Hopper Women Scholarship	Oct 2014, 2018
	CPS Week Student Travel Grant	Apr 2018
	ACM Middleware Travel Grant	Dec 2016
	ACM SIGCOMM Travel Grant	Aug 2014, 2016
	CRA-W Grad Cohort Workshop Travel Grant	Apr 2015, 2016
	ACM Travel Grant for attending Diversity'15 and SOSP'15	Oct 2015
	USENIX NSDI Travel Grant	May 2015
	NSF Student Scholarship for GENI Summer Camp'14	July 2014
PROFESSIONAL SERVICE	Travel Grant Coordinator, ACM/IFIP/USENIX Middleware Conference 2017, 2018	
	Web Chair, IEEE LANMAN 2018	
	Web Chair, IEEE IWCA 2015 (co-located with IC2E'15)	
	Conference Reviewer: Globecom 2017, Cloud-Assisted Networking 2016	
	Journal Reviewer: IEEE Journal on Selected Areas in Communications 2018, IEEE Transactions on Network and Service Management 2018, IEEE Transactions on Services Computing 2018, Elsevier Computer Networks 2016	