

Jeffrey T. Rasley

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INTERESTS	Distributed Systems Machine-Learning Infrastructure Multi-Tenant Cloud Systems	Resource Scheduling Network/System Monitoring Performance Guarantees
EDUCATION	Brown University , Providence, RI USA Ph.D. Computer Science, <i>Expected Completion May 2018</i> M.Sc. Computer Science, May 2014 Adviser: Prof. Rodrigo Fonseca	2012 - Present
	University of Washington , Seattle, WA USA Bachelor of Science with Honors, Computer Science Minor in Applied Mathematics	2008 - 2012
HONORS & AWARDS	Best Paper Award Runner Up at HCOMP 2015 National Science Foundation Graduate Research Fellowship, 2013 Brown University Graduate School Fellowship, 2012 Computing Research Association Outstanding Undergraduate Researcher Honorable Mention, 2011 Wayne C. & Grace M. Stanley and Burkhardt Scholarships, 2011	
INDUSTRY EXPERIENCE	Research Intern, Microsoft Research Research Contractor, Microsoft Research <ul style="list-style-type: none">Studied deep learning infrastructure topics. Developed an “application-aware” resource scheduler, HyperDrive, to improve parallel hyperparameter/architecture exploration. Led to Middleware publication and Microsoft internal product release currently being used by numerous teams. Third-party release ongoing. Research Intern, Microsoft Research Research Contractor, Microsoft Research <ul style="list-style-type: none">Studied topics related to developing more efficient resource schedulers for distributed data analytics. Led to EuroSys publication and ongoing work transferring techniques to open-source Apache YARN project. Member of Technical Staff Intern, VMware NSX <ul style="list-style-type: none">Designed and developed a scalable network measurement prototype for network function virtualization (NFV) applications. Research Intern, IBM Research - Austin <ul style="list-style-type: none">Studied data center network performance. Developed a system for ultra low-latency network monitoring and control for high-speed 10 GbE+ networks, led to SIGCOMM publication and two patents. SDET Intern, Isilon Systems <ul style="list-style-type: none">Developed test framework for OneFS distributed file system change notification system. Researched customer workloads to evaluate and debug the system. Integrated my test framework into development and test engineering infrastructures. Computer Support Specialist, Spokane Public Schools <ul style="list-style-type: none">Supported technical needs for 60+ facilities and 4,000+ users. Developed and supported automation scripts to improve efficiency of support and deployment of resources.	Summer 2016, 2017 2016 - Present
SELECT PUBLICATIONS	HyperDrive: Exploring Hyperparameters with POP Scheduling <i>J. Rasley, Y. He, F. Yan, O. Ruwase, R. Fonseca</i> ACM/IFIP/USENIX Middleware Conference, December 2017 Efficient Queue Management for Cluster Scheduling <i>J. Rasley, K. Karanasos, S. Kandula, R. Fonseca, M. Vojnovic, S. Rao</i> European Conference on Computer Systems (EuroSys), April 2016 Planck: Millisecond-scale Monitoring and Control for Commodity Networks <i>J. Rasley, B. Stephens, C. Dixon, E. Rozner, W. Felter, K. Agarwal, J. Carter, R. Fonseca</i> ACM SIGCOMM Conference, August 2014	

OTHER
PUBLICATIONS

Detecting Latent Cross-Platform API Violations

J. Rasley, E. Gessiou, T. Ohmann, Y. Brun, S. Krishnamurthi, J. Cappos
IEEE International Symposium on Software Reliability Engineering (ISSRE), November 2015

Crowdsourcing from Scratch: A Pragmatic Experiment in Data Collection by Novice Requesters

A. Papoutsaki, H. Guo, D. Metaxa-Kakavouli, C. Gramazio, *J. Rasley*, W. Xie, G. Wang, J. Huang
AAAI Conference on Human Computation and Crowdsourcing (HCOMP), November 2015

Best Paper Award Runner Up

Low-latency Network Monitoring via Oversubscribed Port Mirroring

J. Rasley, B. Stephens, C. Dixon, E. Rozner, W. Felter, K. Agarwal, J. Carter, R. Fonseca
Extended Abstract, presented as part of the Open Networking Summit 2014 (ONS '14), March 2014

Runtime Verification of Portable Programming Interfaces

J. Rasley
Honors Thesis, Computer Science and Engineering, University of Washington, June 2011

Retaining Sandbox Containment Despite Bugs in Privileged Memory-Safe Code

J. Cappos, A. Dadgar, *J. Rasley*, J. Samuel, I. Beschastnikh, C. Barsan, A. Krishnamurthy, T. Anderson
17th ACM Conference on Computer and Communications Security (CCS). October 2010

POSTERS AND
TALKS

HyperDrive: Automated and Efficient Hyperparameter Exploration for DL and ML Models

J. Rasley, Y. He, R. Kopetz, O. Ruwase
Talk at Microsoft Machine Learning, AI & Data Science Conference (MLADS), December 2017

HyperDrive: Flexible and Efficient Parallel Hyperparameter Exploration

J. Rasley, Y. He, F. Yan, O. Ruwase, R. Fonseca
Poster at Workshop on AI Systems at Symposium on Operating Systems Principles (SOSP '17), October 2017

Efficient Queue Management for Cluster Scheduling

J. Rasley K. Karanasos, S. Kandula, R. Fonseca, M. Vojnovic, S. Rao
Poster at USENIX Symposium on Networked Systems Design and Implementation (NSDI '16), March 2016

Queue Management at End Hosts for Improved Cluster Scheduling

J. Rasley
Talk at the 2nd New England Networking and Systems Day. Boston, MA, October 19th, 2015

Planck: Millisecond-Scale Monitoring And Control For Commodity Networks

J. Rasley
Invited talk at University of British Columbia, Department of Computer Science, November 4, 2014

A Low-Latency Network Monitoring Platform

J. Rasley, B. Stephens, C. Dixon, E. Rozner, W. Felter, K. Agarwal, J. Carter, R. Fonseca
Poster at the USENIX Symposium on Networked Systems Design and Implementation (NSDI '14), April, 2014

Runtime Verification of Portable Programming Interfaces

J. Rasley
Invited talk at New York University, Department of Computer Science and Engineering, September 26, 2011

Seattle: The Internet as a Testbed

J. Rasley, M. Muhammad, A. Hanson, S. Morgan, A. Loh, J. Cappos
Poster at USENIX Symposium on Networked Systems Design and Implementation (NSDI '11), March, 2011

TEACHING

Brown University, CS138: Distributed Systems (2015)

- Teaching Assistant and Guest Lecturer
- Co-designed a rebooted course after a several year break
- Designed and developed course projects in Go
- Developed reference implementations of chat application, Chord, and Raft

Student Project Co-Advising

- Rui Zhou, M.Sc. 2014
Datacenter Network Large Flow Detection and Scheduling from the Edge

COMMUNITY INVOLVEMENT Elected and served as Faculty-Graduate Liaison (FGL) for 2015-2016 academic year
Taught a day ('13 & '14) at Nathan Bishop Middle School as part of CS Education Week
Poster Judge at the 2014 New England Undergraduate Computing Symposium (NEUCS '14).
Brown Computer Science Ph.D. Recruiting Co-organizer (2013 & 2014)
USENIX & ACM Student Member

PATENTS **Determining Sampling Rate from Randomly Sampled Events**
K. Agarwal, J. Carter, C. Dixon, *J. Rasley*
Granted March 26th, 2015, Publication Number: US20150089045 A1
Port Mirroring for Sampling Measurement of Network Flows
K. Agarwal, J. Carter, C. Dixon, *J. Rasley*
Granted March 26th, 2015, Publication Number: US 20150085694 A1

RELEVANT COURSEWORK **Brown University**
Topics in Parallel and Distributed Computing *Prof. Maurice Herlihy*
Topics in Data Science *Prof. Tim Kraska*
Pattern Recognition & Machine Learning *Prof. Pedro Felzenszwalb*
Topics in Distributed Systems and Databases, *Prof. Ugur Cetintemel*
Intro. to Programming Languages, *Prof. Shriram Krishnamurthi*
University of Washington
Distributed Systems, *Prof. Tom Anderson*
Intro. to Networks, *Prof. David Wetherall*
Intro. to Operating Systems, *Prof. Ed Lazowska*
Computer Security, *Prof. Tadayoshi Kohno & Daniel Halperin*
Home Networking Capstone, *Prof. John Zahorjan*

REFERENCES **Prof. Rodrigo Fonseca**
Associate Professor
Brown University
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Dr. Yuxiong He
Research Manager & Senior Researcher
Microsoft Research
yuxhe@microsoft.com
Dr. Colin Dixon
Software Engineer
Facebook
colin@colindixon.com
Dr. Eric Rozner
Research Staff Member
IBM Research - Austin
erozner@us.ibm.com

CITIZENSHIP United States