

Doug Woos

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Research Interests

I am broadly interested in programming languages, systems, and networking. I am especially interested in research that applies techniques from programming languages to distributed systems.

Employment

- 2019–present **Lecturer in Computer Science**, *Brown University*, Providence, RI.
2011–2013 **Engineer**, *Gamechanger Media*, New York, NY.

Education

- 2013–2019 **PhD**, *University of Washington*, Seattle, WA.
Computer Science and Engineering
2013–2015 **Master of Science**, *University of Washington*, Seattle, WA.
Computer Science and Engineering
2007–2011 **Bachelor of Arts**, *Swarthmore College*, Swarthmore, PA.
Honors Major Computer Science, Honors Minor Mathematics, Course Minor Philosophy

Teaching

Academic Advising.

4 students

- Spring 2020 **Introduction to Algorithms and Data Structures (CSCI 0160)**.
266 students, co-taught with Seny Kamara
Spring 2020 **Computing Foundations: Program Organization (CSCI 0112)**.
26 students
Fall 2019 **Computing Foundations: Data (CSCI 0111)**.
58 students
Spring 2017 **Distributed Systems (CSE 452)**, *University of Washington*.

All courses taught at Brown University unless otherwise noted

Preprints

- [1] Doug Woos, Zachary Tatlock, Michael D. Ernst, and Thomas E. Anderson. “A Graphical Interactive Debugger for Distributed Systems”. ArXiv preprint. June 2018.

Conference Publications

- [1] Josh Pollock, Jared Roesch, Doug Woos, and Zachary Tatlock. “Theia: Automatically Generating Correct Program State Visualizations”. In: *SPLASH-E 2019*. Oct. 2019.

- [2] Ellis Michael, Doug Woos, Thomas Anderson, Michael D. Ernst, and Zachary Tatlock. "Teaching Rigorous Distributed Systems With Efficient Model Checking". In: *Eurosys 2019*. June 2019.
- [3] Marcelo Taube, Giuliano Losa, Kenneth L McMillan, Oded Padon, Mooly Sagiv, Sharon Shoham, James R Wilcox, and Doug Woos. "Modularity for Decidability of Deductive Verification with Applications to Distributed Systems". In: *PLDI 2018*. June 2018.
- [4] Konstantin Weitz, Doug Woos, Emina Torlak, Michael D. Ernst, Arvind Krishnamurthy, and Zachary Tatlock. "Scalable Verification of Border Gateway Protocol Configurations with an SMT Solver". In: *OOPSLA 2016*. Oct. 2016.
- [5] Doug Woos, James R. Wilcox, Steve Anton, Zachary Tatlock, Michael D. Ernst, and Thomas Anderson. "Planning for Change in a Formal Verification of the Raft Consensus Protocol". In: *CPP 2016*. Jan. 2016.
- [6] James R. Wilcox, Doug Woos, Pavel Panchekha, Zachary Tatlock, Xi Wang, Michael D. Ernst, and Thomas Anderson. "Verdi: A Framework for Implementing and Verifying Distributed Systems". In: *PLDI 2015*. June 2015.
- [7] Simon Peter, Jialin Li, Irene Zhang, Dan R. K. Ports, Doug Woos, Arvind Krishnamurthy, Thomas Anderson, and Timothy Roscoe. "Arrakis: The Operating System is the Control Plane". In: *OSDI 2014*. Oct. 2014.
- [8] Simon Peter, Umar Javed, Qiao Zhang, Doug Woos, Thomas Anderson, and Arvind Krishnamurthy. "One Tunnel is (Often) Enough". In: *SIGCOMM 2014*. July 2014.
- [9] Simon Peter, Jialin Li, Doug Woos, Irene Zhang, Dan R. K. Ports, Thomas Anderson, Arvind Krishnamurthy, and Mark Zbikowski. "Towards High-Performance Application-Level Storage Management". In: *HotStorage 2014*. June 2014.
- [10] Tia Newhall and Douglas Woos. "Incorporating Network RAM and Flash into Fast Backing Store for Clusters". In: *IEEE Cluster 2011*. Sept. 2011.

Journal Publications

- [1] Simon Peter, Jialin Li, Irene Zhang, Dan R. K. Ports, Doug Woos, Arvind Krishnamurthy, Thomas Anderson, and Timothy Roscoe. "Arrakis: The Operating System is the Control Plane". In: *ACM ToCS*. Vol. 33(4). Nov. 2015.

Workshop Publications

- [1] Ryan Doenges, James R. Wilcox, Doug Woos, Zachary Tatlock, and Karl Palmkog. "Verification of Implementations of Distributed Systems Under Churn". In: *CoqPL 2017*. Jan. 2018.
- [2] Konstantin Weitz, Doug Woos, Emina Torlak, Michael D. Ernst, Arvind Krishnamurthy, and Zachary Tatlock. "Formal Semantics and Automated Verification for the Border Gateway Protocol". In: *NetPL 2016*. Aug. 2016.