

Doug Woos

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Education

- 2013–current **PhD (in progress)**, *University of Washington*, Seattle, WA, 3.7 GPA.
2013–2015 **Master of Science**, *University of Washington*, Seattle, WA, 3.8 GPA.
2007–2011 **Bachelor of Arts**, *Swarthmore College*, Swarthmore, PA, 3.6 GPA (3.7 CS GPA).
Honors Major Computer Science, Honors Minor Mathematics, Course Minor Philosophy

Research Interests

I am broadly interested in programming languages, systems, and networking. I am currently working on Oddity, a graphical debugger for distributed systems.

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] Tia Newhall and Douglas Woos. “**Incorporating Network RAM and Flash into Fast Backing Store for Clusters**”. In: *IEEE Cluster 2011*. Sept. 2011.
- [2] Simon Peter, Umar Javed, Qiao Zhang, Doug Woos, Thomas Anderson, and Arvind Krishnamurthy. “**One Tunnel is (Often) Enough**”. In: *SIGCOMM 2014*. July 2014.
- [3] 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.
- [4] 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.
- [5] 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.
- [6] 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.

- [7] 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.
- [8] 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.

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 Palmskog. “**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.

Teaching

- Sep 2017-Present **Guest lecturer.**
Delivered guest lectures in courses on programming languages, distributed systems, and operating systems
- Mar-Jun 2017 **Instructor, UW CSE 452.**
Taught undergraduate distributed systems course
- Sep-Dec 2015 **TA, UW CSE 505.**
TA'd graduate programming languages course taught by Zachary Tatlock

Work Experience

- 2011–2013 **Engineer, GameChanger Media, New York, NY.**
 - o Developed an open-source Redis-backed queuing/scheduling library in Python
 - o Developed a Scheme-based DSL for baseball stats calculation
 - o Developed a custom system for code deployment
 - o Developed a MongoDB shard-key presplitting system
- 2007–2011 **System Administrator, Swarthmore College CS Dept., Swarthmore, PA.**
 - o Installed and debugged software packages
 - o Debugged users' problems
 - o Taught new users how to use Linux
- 2004–2007 **Assistant Coach, Vermont Fencing Alliance, Middlebury, VT.**
 - o Helped beginning-to-intermediate fencers with drills
- 2005–2008 **Referee, United States Fencing Association, Colorado Springs, CO.**
 - o Refereed fencing matches at national tournaments

Awards and Honors

- Apr 2015 **NSF Graduate Research Fellowship.**
- Oct 2014 **Madrona Prize for Best Student Poster**, *UW CSE Industry Affiliates Meeting*.
Arrakis: The Operating System is the Control Plane
- Oct 2014 **Best Paper**, *OSDI 2014*.
Arrakis: The Operating System is the Control Plane
- Apr 2014 **NSF Graduate Research Fellowship Honorable Mention.**
- Aug 2013 **UW Faithful Steward Fellowship.**

Service

- 2018 **Union Steward**, *UAW 4121*.
Served as an academic student employee union representative for Computer Science
- 2016 **Artifact Evaluation Committee**, *PLDI 2016*.
Reviewed submitted artifacts as part of the AEC
- 2014–2015 **Social Co-Chair**, *UW CSE Graduate Student Committee*.
Organized weekly graduate student events
- 2014–2015 **Graduate Student Mentor**.
Advised three new graduate students on academics and life in general
- Apr 2014 **Student Volunteer**, *NSDI 2014*, Seattle, WA.
Took notes on poster session for publication in USENIX ;login:

Technical proficiencies

- Languages C, Python, Lisp, Coq, Javascript, Objective-C, C#, VB.NET, Java
- Other Linux, Mac OS X, iOS, Nginx, Apache, Git, jQuery, QEMU, MongoDB, Redis,
- Technologies Django, Tornado, Emacs

Interests

Amateur astronomy, philosophy, baseball statistics, science fiction, fencing

References

Available upon request.