

Nathaniel Yazdani

phone: (360) 852-1036
email: me@nyazdani.com
website: nyazdani.com
nickname: Nate

Education

GRADUATE

2019 - now DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE (*on leave*)
Northeastern University, Boston

2017 - 2019 MASTER OF SCIENCE IN COMPUTER SCIENCE & ENGINEERING¹
University of Washington, Seattle

UNDERGRADUATE

2015 - 2017 BACHELOR OF SCIENCE IN COMPUTER SCIENCE WITH HONORS
University of Washington, Seattle

Experience

RESEARCH

05/2020 - now **Intern**, Formal Methods
BedRock Systems, Inc.
Formal verification of C++ hypervisor, mechanized with IRIS logic and automated with proof search

09/2019 - now **Graduate Student**, Prof. Amal Ahmed
Northeastern University Khoury College of Computer Sciences
Mechanization of source-level Rust semantics in Coq, implemented with SSREFLECT

09/2017 - 09/2019 **Graduate Student**, Prof. Dan Grossman
University of Washington Allen School of Computer Science & Engineering
Proof automation via type-driven ornamentation for Coq, implemented as an OCAML plugin

07/2017 - 09/2017 **Research Intern**, Prof. Aleks Nanevski
IMDEA Software Institute
Compositional verification in FCSL, a Coq framework for concurrent separation logic

09/2015 - 07/2017 **Undergraduate Research Assistant**, Prof. Ras Bodik
University of Washington Allen School of Computer Science & Engineering
Synthesis of parallel tree programs in Rosette, a Racket dialect for symbolic evaluation via SMT

¹Graduate study through select accelerated program without postgraduate diploma.

TEACHING

Graduate Teaching Assistant

Northeastern University Khouri College of Computer Sciences

Aut. 2020

- **CS 2500** Fundamentals of Computer Science I

Graduate Teaching Assistant

University of Washington Allen School of Computer Science & Engineering

Aut. 2017

- **CSE 374** Programming Concepts and Tools

Win. 2018

- **CSE 331** Software Design and Implementation

Spr. 2018

- **CSE 401/M501** Compiler Construction

Aut. 2018

- **CSE 401/M501** Compiler Construction

Win. 2019

- **CSE 331** Software Design and Implementation

Spr. 2019

- **CSE 401/M501** Compiler Construction

Undergraduate Teaching Assistant

University of Washington Allen School of Computer Science & Engineering

Win. 2017

- **CSE 341** Programming Languages

INDUSTRY

05/2015 -

Fedora Engineering Intern

09/2015

Red Hat, Inc.

01/2014 -

Technical Intern

12/2014

Intel Corporation

Scholarships, honors & awards

RESEARCH

2016 - 2017

Washington Research Foundation Fellowship, *Washington Research Foundation*

2016 - 2017

Research Leader, *University of Washington Undergraduate Research Program*

2017

Graduate Research Fellowship (Honorable Mention), *National Science Foundation*

2017

Outstanding Undergrad. Researcher (Honorable Mention), *Computing Research Assoc.*

ACADEMIC

2016 - 2017

Washington State Opportunity Scholarship, *Washington State Legislature*

2016 - 2017

Jerre Noe Endowed Scholarship, *U.W. School of Computer Science & Engineering*

2015 - 2016

Burkhardt Endowed Scholarship, *U.W. School of Computer Science & Engineering*

2015 - 2017

Roy F. Mather Scholarship, *Community Foundation for Southwest Washington*

2015 - 2017

Rotary Scholarship, *Lewis River Rotary Club*

Peer-reviewed publications

- [1] Talia Ringer, RanDair Porter, **Nathaniel Yazdani**, John Leo, and Dan Grossman. “Proof Repair Across Type Equivalences”. In: *Proceedings of the 42nd ACM SIGPLAN Conference on Programming Language Design and Implementation*. PLDI 2021. Virtual: ACM, 2021. DOI: [10.1145/3453483.3454033](https://doi.org/10.1145/3453483.3454033). arXiv: [2010.00774](https://arxiv.org/abs/2010.00774).
- [2] Talia Ringer, **Nathaniel Yazdani**, John Leo, and Dan Grossman. “Ornaments for Proof Reuse in Coq”. In: *Proceedings of the 10th International Conference on Interactive Theorem Proving*. ITP 2019. Portland, OR, USA: LIPIcs, 2019. DOI: [10.4230/LIPIcs.ITP.2019.26](https://doi.org/10.4230/LIPIcs.ITP.2019.26).
- [3] Talia Ringer, **Nathaniel Yazdani**, John Leo, and Dan Grossman. “Adapting Proof Automation to Adapt Proofs”. In: *Proceedings of the 7th ACM SIGPLAN Conference on Certified Programs and Proofs*. CPP 2018. Los Angeles, CA, USA: ACM, 2018. DOI: [10.1145/3167094](https://doi.org/10.1145/3167094).
- [4] Rastislav Bodik, Kartik Chandra, Phitchaya Mangpo Phothilimthana, and **Nathaniel Yazdani**. “Domain-Specific Symbolic Compilation”. In: *2nd Summit on Advances in Programming Languages*. SNAPL 2017. Asilomar, CA, USA: LIPIcs, 2017. DOI: [10.4230/LIPIcs.SNAPL.2017.2](https://doi.org/10.4230/LIPIcs.SNAPL.2017.2).