

Nathaniel Yazdani

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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 Nanovski
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 Khoury 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. arXiv: [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](#).
- [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](#).
- [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](#).