

Talia Lily Ringer

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<http://tlringer.github.io/>

EDUCATION

University of Washington 2015 – Present
Ph.D. in Computer Science
M.S. in Computer Science 2017
Advisor: Dan Grossman
Programming Languages & Software Engineering

University of Maryland, College Park 2008 – 2012
B.S. in Mathematics and Computer Science
Advisor: Lawrence Washington
Honors Thesis: [An Elliptic Curve Threshold Key Establishment Scheme](#)

PUBLICATIONS

Talia Ringer, Nathaniel Yazdani, John Leo, and Dan Grossman.
[Adapting Proof Automation to Adapt Proofs.](#)
To appear at CPP 2018.

Talia Ringer, Dan Grossman, Daniel Schwartz-Narbonne, and Serdar Tasiran.
[A Solver-Aided Language for Test Input Generation.](#)
OOPSLA 2017.

Talia Ringer, Dan Grossman, and Franziska Roesner.
[AUDACIOUS: User-Driven Access Control with Unmodified Operating Systems.](#)
CCS 2016.

CURRENT RESEARCH

Proof Patching

Talia Ringer, Nate Yazdani, John Leo, and Dan Grossman

Proof brittleness is a major barrier to development in interactive theorem provers like Coq. Our vision is a future of proof automation in interactive theorem provers that automatically adapts proofs to breaking changes. Our prototype tool [PUMPKIN PATCH](#) generalizes an example adaptation into a reusable patch that can fix broken proofs. We are currently extending it and unifying it with existing work on ornaments.

HONORS & AWARDS

NSF GRFP Fellow
Graduated with Honors in Computer Science
Graduation Speech Finalist
Corporate Scholar

University of Washington
University of Maryland
University of Maryland
University of Maryland

INDUSTRY

Amazon Summer 2016
Research Scientist Intern
Worked with the Automated Reasoning Group on automatic test generation. Developed a solver-aided domain-specific language to generate test inputs.

Amazon 2012 – 2015
Software Development Engineer
Worked with a team to develop the AmazonSupply website. Wrote and deployed code used company-wide and loaded hundreds of thousands of times per day. Developed a data flow analysis tool. Launched Amazon Business.

Amazon Summer 2011
Software Development Engineer Intern
Developed an internal web application to generate metadata for the AmazonSupply website in a safe and user-friendly manner. Enabled version control and staging for the metadata.

Carr Astronautics 2010 – 2011
Corporate Scholars Program – Software Intern
Assisted in the development of a parallel image mosaicing application. Wrote code in C, MATLAB, and Java to read, alter, and write TIFF images with associated geographic data. Awarded a scholarship through the University of Maryland's Corporate Scholars Program.

MENTORSHIP & OUTREACH

JFS 2017 – Present
ESL tutor for elderly refugees.

UW CSE 2015 – Present
Mentor for undergraduate women and graduate students in computer science.

UW QMP 2016 – Present
Mentor for LGBT students from any major.

The Identity Function 2016 – 2017
Author of a [blog interview series](#) about LGBT computer science researchers.

TUNE House 2015 – 2016
Mentor for undergraduate women in computer science.

Amazon 2012-2015
Technical and career mentor for several software engineers.

SERVICE

POPL Artifact Evaluation Committee 2018
University of Washington Admissions Committee 2018

TEACHING

University of Washington <i>Teaching Assistant for Compilers</i>	<i>Winter 2016</i>
University of Maryland, College Park <i>Teaching Assistant for Computer and Network Security</i>	<i>Spring 2012</i>
University of Maryland Academic Support & Career Development Unit <i>Mathematics and Computer Science Tutor for Student-Athletes</i>	<i>2010</i>

SKILLS & ACTIVITIES

My favorite **programming languages** are Coq, OCaml, and Rosette. I am proficient in Java, Racket, Ruby, and Scala. I am familiar with C and Haskell. I learn new languages quickly, and I enjoy switching between languages depending on what is most appropriate for the task.

I am an expert in writing **Coq plugins** and have implemented a [tutorial plugin](#). I have [extended Rosette](#) to handle strings. I am also proficient in **Android development**.

I enjoy **natural languages** as much as I enjoy programming languages. I am almost fluent in Hebrew. I studied Japanese for four years, and I have a very elementary understanding of French. I am currently learning Russian.

I compete for **Club Northwest**, a top distance running club. I served on the board of Club Northwest from 2015 to 2016. My role was to promote our top runners through social media and writing. I ran **NCAA Division I Cross-Country** in 2009, and was a scholar-athlete.

INTERESTS

Academic: Verification, proof engineering, proof search, domain-specific languages, type theory, category theory, formal methods, computer security, program analysis, program synthesis, abstract algebra, cryptology.

Personal: Distance running, triathlon, logic and number puzzles, esoteric programming languages, singing, learning natural languages, piano composition.