# Ardi Madadi

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## EDUCATION

**PhD. in Computer Science** *in progress*
Advisor: Marcel Böhme
Aug 2024 — Present
Max Planck Institute for Security and Privacy
Bochum - Germany

**M.S. in Computer Science** (GPA: 3.94)
Advisor: René Just
Jan 2022 — June 2024
University of Washington
Seattle - USA

**B.S. in Computer Science** (GPA: 3.75)
Advisor: René Just
Sept 2019 — June 2021
University of Washington
Seattle - USA

**A.S. in Computer & Electrical Engr.** (GPA: 3.97)

Sept 2016 — June 2019
Tacoma Community College
Tacoma - USA

## HONORS & AWARDS

• Martin Family Foundation Honors Scholarship, 2019—2023
• Allen School Scholarship, 2021
• Washington State Opportunity Scholarship, 2018-2021
• Phi Theta Kappa Honor Society, 2017-present

## LEADERSHIP & VOLUNTEER WORK

• Mentor - Big / Little Program, 2021–2024 — Seattle, WA
• Coordinator - PLSE Visit Days, 2023 — Seattle, WA
• Student Volunteer - SPLASH, 2022 — Auckland, NZ
• Coordinator / Host - The DUB Seminar Series, 2022 — Seattle, WA
• Ambassador - Washington State Opportunity Scholarship, 2019–2020 — Seattle, WA
• Mentor - Girls Who Code, 2018—2020 — Tacoma, WA
• Keynote Speaker - Department of State's Conference on Refugees, 2016 — Washington, D.C.

## PUBLICATIONS

*[Under review at AAAI 2026:] Valentin, T., Madadi, A., Sapia, G., & Böhme, M. (2025). Estimating Correctness Without Oracles in LLM-Based Code Generation. arXiv preprint arXiv:2507.00057.*

Potter, H., Madadi, A., Just, R., & Omar, C. (2022, November). Contextualized Programming Language Documentation. In *Proceedings of the 2022 ACM SIGPLAN International Symposium on New Ideas, New Paradigms, and Reflections on Programming and Software* (pp.1-15).

Kushigian, B., Kaufman, S.J., Featherman, R., Potter, H., Madadi, A. and Just, R., 2024, September. Equivalent Mutants in the Wild: Identifying and Efficiently Suppressing Equivalent Mutants for Java Programs. In Proceedings of the 33rd *ACM SIGSOFT International Symposium on Software Testing and Analysis* (pp. 654-665).

*Madadi, A., (2018) The Negative Potential of Singularity on the Human Species, Una Voce, (pp. 31-37)*

## PRESENTATIONS

Madadi, A. Quantifying Developer Effort in Mutant Detection. PNW PLSE 2023. Seattle, WA. May 2023.

# EXPERIENCE

**Research Scientist Intern - Adobe Research, September 2023 - December 2023**
Developing a DSL-focused mutation testing framework for Halide and proprietary build systems. Improved testing quality by augmenting pipelines to offer additions to the test suite automatically. Generated reports including a ranked list of mutants.

**Graduate Researcher - University of Washington, January 2022–Present**
Worked on two mutation testing papers (pending publication). Created IDE plugin for Major mutation framework. Co-authored a paper on the optimum granularity of code explanations for a web-based functional language environment. Recruited undergraduate researchers.

**Teaching Assistant: Undergraduate Research Sequence - University of Washington, 2022–Present**
Mentored undergraduate students interested in research. Designed course material. Delivered lectures in the absence of the main instructor. Created assignment rubrics. Produced videos explaining concepts in Computer Science research.

**Software Developer Engineer Intern - Amazon Web Services: CodeWhisperer, 2023**
Designed and implemented an entire end-to-end solution for CodeWhisperer, Amazon's coding assistant, to perform vulnerability detection on incomplete code snippets from the user's IDE, combining software engineering and machine learning techniques.

**Teaching Assistant: Software Engineering - University of Washington, 2022**
Acted as the project manager for four student projects. Wrote grading automation scripts. Created detailed rubrics.

**Software Developer Engineer Intern - Amazon Web Services: CodeGuru Security, 2022**
Designed and implemented a platform for customers to define custom code vulnerability and coding style rules to scan their repositories. Customers such as Alexa engineers use this platform to create rules specific to their own code base.

**Software Developer Engineer Intern - Amazon Web Services: CodeGuru Reviewer, 2021**
Designed and implemented a caching system for a customer codebase using standard Git functions. This system can compute the diff in the customer artifacts in a given PR and only pull the missing artifacts for code review.

**Instructor: Software Design and Implementation - University of Washington, July 2021—Sept. 2021**
Produced curriculum and lecture/section material. Taught lectures and created pre-recorded videos for 50+ students. Completely renovated the course infrastructure, which has been reused in all subsequent offerings. Designed and implemented new assignments. Hired and led teaching assistants.

**Teaching Assistant: Software Design and Implementation - University of Washington, 2020–2022**
Delivered lectures on Javascript and functional programming. Coordinated other teaching assistants as the Head TA. Created new assignments in React. Created lecture and quiz section materials. Produced video tutorials for students.

**Undergraduate Researcher - University of Washington, January 2020–July 2021**
Made code fixes to Defects4J. Studied the effect of test size on its mutant detection ability. Conducted a thorough study of mutants created through natural language processing techniques compared to randomly selected mutants.