Elizabeth A Dinella, PhD

June 2025

Assistant Professor
Bryn Mawr College

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Education

University of Pennsylvania — Philadelphia, PA
Ph.D. in Computer Science, Advisor: Mayur Naik — August 2018 – December 2023

Rensselaer Polytechnic Institute — Troy, NY
B.S. in Computer Science, Summa Cum Laude — August 2014 – May 2018

Publications

1. **Elizabeth Dinella**. 2025. On the Effectiveness of Modular Testing with EvoSuite. (Under Review).
2. **Elizabeth Dinella**, Shuvendu K. Lahiri, and Mayur Naik. 2024. Inferring Natural Preconditions via Program Transformation. *In Companion Proceedings of the 32nd ACM International Conference on the Foundations of Software Engineering (FSE 2024).*
3. **Elizabeth Dinella**, Petros Maniatis, and Satish Chandra. 2024. CodingLogic: A Benchmark for Evaluating Code Reasoning Ability. (Under Review).
4. **Elizabeth Dinella**, Shuvendu K. Lahiri, and Mayur Naik. 2023. Program Structure Aware Precondition Generation. (Under Review).
5. **Elizabeth Dinella***, Gabriel Ryan*, Shuvendu K. Lahiri, and Todd Mytkowicz. 2022. TOGA: A Neural Method for Test Oracle Generation. *In Proceedings of the International Conference on Software Engineering.* (**Distinguished Paper Award**).
6. **Elizabeth Dinella**, Todd Mytkowicz, Alexey Svyatkovskiy, Christian Bird, Mayur Naik, and Shuvendu K. Lahiri. 2022. DeepMerge: Learning to Merge Programs. *IEEE Transactions on Software Engineering*, and *Journal-First Track, Foundations of Software Engineering.*
7. Alexey Svyatkovskiy, Todd Mytkowicz, Negar Ghorbani, Sarah Fakhoury, **Elizabeth Dinella**, Christian Bird, Neel Sundaresan, and Shuvendu K. Lahiri. 2022. MergeBERT: Program Merge Conflict Resolution via Neural Transformers. *In Proceedings of the ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering.*
8. **Elizabeth Dinella***, Hanjun Dai*, Ziyang Li, Mayur Naik, Le Song, and Ke Wang. 2020. Hoppity: Learning Graph Transformations to Detect and Fix Bugs in Programs. *In Proceedings of the International Conference on Learning Representations.* (**Spotlight**).
9. **Elizabeth Dinella**, Pardis Pashakhanloo, Anthony Canino, and Mayur Naik. 2020. Building Program Reasoning Tools using LLVM and Z3. *In Proceedings of the ACM SIGPLAN Symposium on Principles of Programming Languages.* (Tutorial).
10. **Elizabeth Dinella**, Samuel Breese, Evan Maicus, Barbara Cutler, Buster Holzbauer, and Ana Milanova. 2018. Program Analysis Tools in Automated Grading of Homework Assignments. *In Proceedings of the ACM Technical Symposium on Computer Science Education.* (Poster).

11. Matthew Peveler, Samuel Breese, Evan Maicus, Andrew Aikens, Timothy Cyrus, **Elizabeth Dinella**, James Anderson, Joshua Barthelmess, Marisa Lee, Leon Montealegre, Jessica Wang, Buster Holzbauer, Barbara Cutler, and Ana Milanova. 2018. Supporting Team Submission and Peer Grading within Submitty. *In Proceedings of the ACM Technical Symposium on Computer Science Education.* (Demo).

Experience

Bryn Mawr College — Bryn Mawr, PA
Assistant Professor in the Department of Computer Science — August 2024 - Present

Bryn Mawr College — Bryn Mawr, PA
Visiting Assistant Professor in the Department of Computer Science — January 2024 - July 2024

Google — Philadelphia, PA (Remote)
Student Researcher, Learning for Code Group — June 2023 - December 2023
Mentors: Satish Chandra, Petros Maniatis

Microsoft Research — Philadelphia, PA (Remote)
Research Intern, RiSE Group — Summer 2020, Summer 2021
Mentors: Shuvendu Lahiri, Todd Mytkowicz, Christian Bird

Microsoft — Redmond, WA
Software Engineering Intern, TypeScript — Summer 2018

Invited Talks

- **Dagstuhl: Programming Language Processing Seminar** — February 2023
  Synthesizing Correctness Properties
- **Seattle University CPSC 5910: Blockchain Security** — November 2022
  Smart Contract Program Analysis
- **ASA at PLDI** — June 2022
  Automated Software Testing: Bridging The Gap With Deep Learning
- **GCM Keynote** — July 2022
  Graph Representations in Program Analysis and their Applications in Machine Learning
- **SIAM CSE** — March 2021
  Hoppity: Learning Graph Transformations to Detect and Fix Bugs in Programs
- **MAPL at PLDI** — June 2020
  Hoppity: Learning Graph Transformations to Detect and Fix Bugs in Programs

Teaching

- **Instructor** at Bryn Mawr College — Spring 2025
  Software Analysis (CS 383)
- **Instructor** at Bryn Mawr College — Spring 2025, Fall 2024, Spring 2024
  Data Structures (CS 151)
- **Instructor** at Bryn Mawr College — Spring 2024
  Computer Science I (CS 113)
- **Outstanding Teaching Award** at University of Pennsylvania — 2023
  Awarded to a PhD student who has demonstrated significant contributions as a teaching assistant in one or more courses.

- **Graduate Teaching Assistant** at University of Pennsylvania — Spring 2023
  Introduction to Blockchain (CIS 233)
- **Head Teaching Assistant** at University of Pennsylvania — Fall 2022
  Web3 Security (CIS 700)
- **Graduate Teaching Assistant** at University of Pennsylvania — Fall 2020
  Software Analysis (CIS 547)
- **Graduate Teaching Assistant** at University of Pennsylvania — Summer 2020
  MCIT Software Analysis (CIS 547)
- **Graduate Teaching Assistant** at University of Pennsylvania — Fall 2019
  Software Analysis and Testing (CIS 573)
- **Undergraduate Programming Mentor** at Rensselaer Polytechnic Institute — 2016-2017
  Data Structures (CIS 1200)
- **Undergraduate Programming Mentor** at Rensselaer Polytechnic Institute — Spring 2015
  Computer Science I (CIS 1100)

Service

- **ICSE** — 2026
  Program Committee
- **OOPSLA/SPLASH** — 2026
  Program Committee
- **NSF CISE/CCF** — 2025
  Panelist
- **IEEE Transactions on Software Engineering** — 2025
  Program Committee
- **State of the Art of Program Analysis (SOAP) @PLDI** — 2025
  Program Committee
- **MSR Industry Track @ ICSE** — 2025
  Program Committee
- **IEEE Transactions on Software Engineering** — 2024
  Program Committee
- **Static Analysis Symposium (SAS) @ OOPSLA** — 2024
  Program Committee
- **OOPSLA Artifacts** — 2024
  Artifact Evaluation Committee
- **ACL Rolling Reviews - June Cycle** — 2024
  Reviewer
- **MAPS Symposium on Machine Programming @ FSE** — 2023
  Program Committee
- **MSR Industry Track @ ICSE** — 2023
  Program Committee
- **Mining Software Repositories (MSR) @ ICSE** — 2021
  Program Committee
- **Workshop on Natural Language Processing for Programming (NLP4Prog) @ EACL** — 2021
  Program Committee

Patents

- Automated Merge Conflict Resolution — Microsoft 2023

Grants and Funding

- Elizabeth Dinella and Mayur Naik. Training the Next Generation of Blockchain Innovators: A Web3 Security Initiative. Ripple Blockchain Fund, $50,000. (1 year). 2023

Awards

- ACM SIGSOFT Outstanding Doctoral Dissertation Award — 2025
- University of Pennsylvania Outstanding Teaching Award — 2023
- EECS Rising Stars Participant — 2023
- Distinguished Paper Award — ICSE 2022
- Spotlight Paper — ICLR 2020