Alaia Solko-Breslin

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Levine 575, 3330 Walnut St ◇ Philadelphia, PA 19104

EDUCATION

University of Pennsylvania Fall 2022 - Present
Ph.D. in Computer and Information Science
Advisors: Rajeev Alur and Mayur Naik
Selected Coursework: Software Foundations, ML, Computer-Aided Verification

Cornell University Fall 2021 - Spring 2022
M.Eng. in Computer Science
Selected Coursework: Program Synthesis, Advanced Compilers, Lattices, Runtime Verification

Cornell University Fall 2018 - Spring 2021
B.S. in Computer Science
Minor in Applied Mathematics
Selected Coursework: Compilers, Advanced Programming Languages, Formal Verification, ML

RESEARCH EXPERIENCE

L* + Blanks ($L^*_\square$) Fall 2020 - Spring 2022
Cornell University

- Contributed to the development of an algorithm, inspired by the Maler-Pnueli version of L*, that learns finite automata from a set of example strings.
- Implemented a library for common operations over automata in OCaml.
- Contributed to the main implementation of the $L^*_\square$ blanks algorithm.

Petr4 Spring 2020 - Summer 2020
Cornell University

- Developed a framework in OCaml for testing the semantics of our interpreter for the P4 language.

PUBLICATIONS

Conference Publications

- *Automata Learning with an Incomplete Teacher* [paper] ECOOP 2023
  Mark Moeller, Thomas Wiener, **Alaia Solko-Breslin**, Caleb Koch, Nate Foster, Alexandra Silva.
- *Petr4: Formal Foundations for P4 Data Planes* [paper] POPL 2021
  Ryan Doenges, Mina Tahmasbi Arashloo, Santiago Bautista, Alexander Chang, Newton Ni, Samwise Parkinson, Rudy Peterson, **Alaia Solko-Breslin**, Amanda Xu, Nate Foster.

WORK EXPERIENCE

Amazon Web Services Summer 2021
Software Development Engineer Intern

- Implemented an API that performs a deep health check of our authentication service.
- Implemented canaries that would continuously make requests to this health check and our service and report metrics.

Amazon Web Services Summer 2020
Software Development Engineer Intern

· Designed and implemented an API that allows test fleets to obtain the posture that is necessary for them to reach services in Native AWS.

TEACHING

University of Pennsylvania
Teaching Assistant

· CIS 5000: Software Foundations Fall 2023
Instructor: Benjamin Pierce
Lectures taught: "Induction and data structures" September 2023

Cornell University
Teaching Assistant

· CS 4160/5160: Formal Verification Spring 2022
Instructor: Michael Clarkson
· CS 3110: Data Structures and Functional Programming Fall 2021
Instructor: Michael Clarkson
· CS 4820: Introduction to Analysis of Algorithms Spring 2021
Instructor: Robert Kleinberg
· CS 4820: Introduction to Analysis of Algorithms Fall 2020
Instructor: Dexter Kozen
· CS 3110: Data Structures and Functional Programming Spring 2020
Instructor: Nate Foster
· CS 3110: Data Structures and Functional Programming Fall 2019
Instructor: Michael Clarkson

SERVICE

CIS TGIF Event Coordinator June 2023-Present
Organize weekly social dinners for CIS Ph.D. students, postdocs, and faculty.

CIS Office Committee Member May 2023-Present
Coordinate office assignments for CIS Ph.D. students and postdocs.

PLDI Student Volunteer June 2023
Assisted with conference sessions to address technical difficulties and keep talks running on schedule.

AWARDS

Summer School on Formal Techniques Funding 2023
Received funding to travel to and attend the SSFT summer school.

Programming Languages Mentoring Workshop at PLDI Funding 2022
Received funding to travel to and attend PLMW at PLDI.

John Grist Brainerd Doctoral Fellowship (UPenn) 2022
Donor-named fellowships like these provide a one-time $3,000 award. This honor and award is in recognition of outstanding academic accomplishments and research potential.

TECHNICAL SKILLS

Programming Languages Python, Java, OCaml, Rust, Coq, Ruby, Racket, C
Tools Pytorch, Git, LaTeX