

Lauren Pick

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Education

2016 - 2022	Princeton University , Princeton, NJ, USA Ph.D. Computer Science Advisor: Aarti Gupta Thesis: Scaling Automatic Modular Verification
2013 - 2016	Homerton College, University of Cambridge , Cambridge, UK B.A. Hons Computer Science

Awards and Scholarships

2022 - 2024	CI Fellows Postdoctoral Fellowship with Aws Albarghouthi
2018 - 2021	NSF Graduate Research Fellowship Program (NSF GRFP) Fellowship
2017	VMW Travel Scholarship to attend the Verification Mentoring Workshop and CAV
2016 - 2021	Dean's Grant , Princeton University
2015, 2016	David Thompson Scholarship , Homerton College, University of Cambridge
2013 - 2016	Cambridge Overseas Trust Scholarship

Research Experience

Jan 2022 - Nov 2021 - Sep 2016 - Nov 2021	Postdoctoral Researcher , University of Wisconsin-Madison, Madison, WI, USA Postdoctoral Researcher , University of California, Berkeley, Berkeley, CA, USA Research Assistant , Princeton University, Princeton, NJ, USA Developed techniques to synthesize specifications and invariants to scale automated verification.
Apr - Jul 2021	Intern , Amazon Web Services, USA Continued work on scalable symbolic execution and verification of distributed systems written in P.
May - Aug 2020	Intern , Amazon Web Services, USA Worked on developing and implementing techniques for scalable symbolic execution of distributed systems specified in the P language.
Jun - Aug 2018	Intern , Amazon Web Services, New York, NY, USA Worked on applying formal verification to security-critical code as part of AWS Security's Automated Reasoning Group.
Jul - Aug 2016	Student Associate , SRI International, Menlo Park, CA, USA Worked on using abstract interpretation to find additional invariants useful to the Sally model checker. Sally: http://sri-csl.github.io/sally
Jun - Aug 2015	Intern , NASA Langley Research Center, Hampton, VA, USA Implemented a bounded Metric Temporal Logic library for the Copilot eDSL. Collaborated with another intern to write monitors for properties of aircrafts in Copilot. Copilot: http://github.com/copilot-language/Copilot

Teaching Experience

Spring 2018	Teaching Assistant , Princeton University, Princeton, NJ, USA COS226: Data Structures and Algorithms
Fall 2017	Teaching Assistant , Princeton University, Princeton, NJ, USA COS516: Automated Reasoning about Software

Publications and Presentations

- PSYM: Efficient Symbolic Exploration of Distributed Systems*. Lauren Pick, Ankush Desai, Aarti Gupta. Programming Language Design and Implementation (PLDI). 2023.
- Synthesizing Quantum-Circuit Optimizers*. Amanda Xu, Abtin Molavi, Lauren Pick, Swamit Tannu, Aws Albarghouthi. Programming Language Design and Implementation (PLDI). 2023.
- AutoWS-Bench-101: Benchmarking Automated Weak Supervision with 100 Labels*. Nicholas Roberts, Xintong Li, Tzu-Heng Huang, Dyah Adila, Spencer Schoenberg, Cheng-Yu Liu, Lauren Pick, Haotian Ma, Aws Albarghouthi, Frederic Sala. Conference on Neural Information Processing Systems (NeurIPS). 2022.
- Qubit Mapping and Routing via MaxSAT*. Abtin Molavi, Amanda Xu, Martin Diges, Lauren Pick, Swamit Tannu, Aws Albarghouthi. International Symposium on Microarchitecture (MICRO). 2022.
- Unbounded Procedure Summaries from Bounded Environments*. Lauren Pick, Grigory Fedyukovich, Aarti Gupta. International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI). 2021.
- Automating Modular Verification of Secure Information Flow*. Lauren Pick, Grigory Fedyukovich, Aarti Gupta. Formal Methods in Computer-Aided Design (FMCAD). 2020.
- Call-Graph-Guided Verification* (Poster). Lauren Pick. Formal Methods in Computer-Aided Design (FMCAD) Student Forum. 2019.
- Exploiting Synchrony and Symmetry in Relational Verification*. Lauren Pick, Grigory Fedyukovich, Aarti Gupta. International Conference on Computer Aided Verification (CAV). 2018.

Service

- Program Committee for PLDI'23.
- External Review / Artifact Evaluation Committee for OOPSLA'22.
- Subreviewer for FMCAD'20.
- Artifact Evaluation Committee for CAV'19.
- Subreviewer for ATVA'18.
- Subreviewer for CAV'17.

Summer Schools

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| 2017 | Marktoberdorf Summer School on Logical Methods for Safety and Security of Software Systems |
| 2017 | Oregon Programming Languages Summer School |

Other Activities

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| 2023 - | Mentor , SIGPLAN-M Mentoring Program
Serving as a mentor for programming languages researchers. |
| Summer 2022 | Mentor , Transfer-to-Excellence Summer Research Program, Berkeley, CA, USA
Co-mentored an undergraduate community college student on a summer research project on program synthesis for distributed systems. |
| Spring 2019 | Instructor , Prison Teaching Initiative (PTI), Fort Dix, NJ, USA
MAT126: Elementary Statistics II
PTI: https://mcgraw.princeton.edu/PTI |
| 2017 - 2019 | Officer , SACNAS (Princeton Chapter), Princeton, NJ, USA
2017-2018: Treasurer, 2018-2019: Secretary
SACNAS: http://sacnas.org |
| Nov 2014, Feb 2016 | Volunteer , STIMULUS, Cambridge, UK
Teaching assistant. Helped with classes at a local sixth form college.
2014: AS-Level Mathematics, 2016: AS-Level Computing
STIMULUS: http://stimulus.maths.org |