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Education

Ph.D. in Computer Science
University of Pennsylvania
Ongoing

M.Eng. in Computer Science
Cornell University
2018 — GPA 4.02

B.S. in Computer Science
Cornell University
2014-2018 — GPA 4.08

Teaching

Penn CIS 552
Head TA 2020-2021

Penn CIS 810
Head TA 2021

Cornell CS 3110
Head TA 2017

Cornell Eng. Leadership
Head TA 2017

Cornell CS 2112
TA 2016

Awards and Honors

Victor Basili Postdoctoral
Fellowship
University of Maryland

Certificate in Engineering
Leadership
Cornell ECLP

1st Place, Business Plan
Competition
Cornell Sch. of Hotel Admin.

Harrison Goldstein

Ph.D. Researcher

I am a Ph.D. candidate studying under Prof. Benjamin C. Pierce. My work combines techniques from programming languages and human-computer interaction address software engineering problems. My current focus is on property-based testing.

Selected Publications

Property-Based Testing in Practice
ICSE 2024 Research Paper

Reflecting on Random Generation **DISTINGUISHED PAPER**
ICFP 2023 Research Paper

Etna: An Evaluation Platform for Property-Based Testing
ICFP 2023 Experience Report

Parsing Randomness
OOPSLA 2022 Research Paper

Do Judge a Test by its Cover: Combining Combinatorial and Property-Based Testing
ESOP 2021 Research Paper

Conferences after COVID: An Early-Career Perspective
PL Perspectives SIGPLAN Blog Post

Employment

Research Intern
Galois, Inc. 2023

Research Intern
Amazon Web Services 2020

Software Engineer *and* Software Engineering Intern
Broadway Technology 2017-2019

Technology Intern
Susquehanna International Group, LLC 2016

Chief Technology Officer
Last Second Beach, LLC 2015-2016

Service

PC Member
HATRA 2023 Ongoing

Ph.D. Mentor
SIGPLAN-M Ongoing

Research Mentor
REPL REU Ongoing

Research Mentor
DeepSpec REU

Organizer
NJPLS 2023

Editor in Chief
PLClub Blog

Social Chair
POPL 2021

A/V Coordinator
ICFP 2021

Harrison Goldstein

Ph.D. Researcher

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Published Work

Papers

1. *Property-Based Testing in Practice*
Harrison Goldstein, Joseph W. Cutler, Daniel Dickstein, Benjamin C. Pierce, Andrew Head
International Conference on Software Engineering (ICSE) 2024. Pending Publication, 10 pages.
2. *Tyche: In Situ Analysis of Random Testing Effectiveness (Demo)*
Harrison Goldstein, Benjamin C. Pierce, Andrew Head
User Interface Software and Technology (UIST) 2023. Article 96, pages 1–3.
3. *Reflecting on Random Generation* **Distinguished Paper**
Harrison Goldstein, Samantha Frohlich, Meng Wang, Benjamin C. Pierce
International Conference on Functional Programming (ICFP) 2023. Article 200, 34 pages.
4. *Etna: An Evaluation Platform for Property-Based Testing (Experience Report)*
Jessica Shi, Alperen Kelles, **Harrison Goldstein**, Benjamin C. Pierce, Leonidas Lampropoulos
International Conference on Functional Programming (ICFP) 2023. Article 218, 17 pages.
5. *Parsing Randomness*
Harrison Goldstein, Benjamin C. Pierce
Object-Oriented Programming, Systems, Languages, and Apps. (OOPSLA) 2022. Article 128, 25 pages.
6. *Some Problems with Properties: A Study on Property-Based Testing in Industry*
Harrison Goldstein, Joseph W. Cutler, Adam Stein, Benjamin C. Pierce, Andrew Head
Human Aspects of Types and Reasoning Assistants (HATRA) 2022. Non-archival, 8 pages.
7. *Do Judge a Test by its Cover: Combining Combinatorial and Property-Based Testing*
Harrison Goldstein, John Hughes, Leonidas Lampropoulos, Benjamin C. Pierce
European Symposium on Programming (ESOP) 2021. Vol 12648, pages 264–291.
8. *Programming Language Support for Natural Language Interaction*
Alex Renda, **Harrison Goldstein**, Sarah Bird, Chris Quirk, Adrian Sampson
Conference on Machine Learning and Systems (SysML) 2018. Non-archival, 3 pages.

Talks

1. *Consider Collaboration* [Talk]
Samantha Frohlich, **Harrison Goldstein**
PL Mentoring Workshop @ POPL, January 2024
2. *Advancing Property-Based Testing in Theory and Practice* [Talk]
Harrison Goldstein
UCSC LSD Seminar, October 2023
and Galois, Inc., October 2023
and UC Berkeley PLAIT Lab, September 2023
and Microsoft Research, September 2023
and University of Bristol, January 2024

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3. *Property-Based Testing in Practice* [Talk]
Harrison Goldstein
Jane Street Programming Languages Colloquium, December 2023
 4. *TheForkJoin Episode 2* [Podcast]
Oliver Flatt, Rachit Nigam, **Harrison Goldstein**
TheForkJoin
 5. *Some Problems with Properties* [Talk]
Harrison Goldstein
NJPLS October 2022
 6. *Reflecting on Random Generation* [Talk]
Harrison Goldstein
NJPLS May 2022

Other Content


1. *Ungenerators (Poster)*
Harrison Goldstein
ICFP 2021
2. *Delimited Continuations and Monads*
Harrison Goldstein
Unpublished PhD Milestone Draft, April 2021
3. *Conferences after COVID: An Early Career Perspective*
Joseph W. Cutler, Harrison Goldstein, Andrew K. Hirsch, Jaemin Hong, Chandrakana Nandi
SIGPLAN PL Perspectives Blog, March 2021
4. *Algebraic Combinatorial Testing (Poster)*
Harrison Goldstein
POPL 2020

Employment

1. *Research Intern*
Galois, Inc. 2023
Worked on two research papers related to the SafeDocs DARPA program. Provided expertise on testing that helped situate the papers in the broader research context.
2. *Research Intern*
Amazon Web Services 2020
Worked on Zelkova, a tool for analyzing and proving properties about AWS access policies. Encoded logical constraints from access policies as SMT formulas, in order to infer policy implications.
3. *Software Engineer and Software Engineering Intern*
Broadway Technology 2017-2019
Built mission-critical internal tools for the company's financial personnel, in particular facilitating a transition to new financial tracking software. Designed and implemented data connectors, financial calculations, web interfaces, and more.
4. *Technology Intern*
Susquehanna International Group, LLC 2016
Helped to implement a safety system, protecting the firm from anomalous trading behaviors. Built an engine for executing business rules as monitors for live trading activities.
5. *Chief Technology Officer*
Last Second Beach, LLC 2015-2016
Helped to lead a small, early stage start-up, focused on providing one-price vacations. Built a demo iOS application, helping the company to win a \$25,000 grant as part of a Business Plan Competition.

Service

1. *Speaker*, PL Mentoring Workshop @ POPL 2024
2. *Steering Committee Member*, NJPLS — Ongoing

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3. *Ph.D. Mentor*, SIGPLAN-M — Ongoing
 4. *Ph.D. Mentor*, Penn CIS Mentoring — Ongoing
 5. *PC Member*, HATRA 2023
 6. *Research Mentor*, REPL REU 2023
 7. *Research Mentor*, DeepSpec REU
 8. *Organizer*, NJPLS 2023
 9. *Editor in Chief*, PLClub Blog
 10. *Social Chair*, POPL 2021
 11. *A/V Coordinator*, ICFP 2021

Education

1. *Ph.D.* in Computer Science, University of Pennsylvania
Ongoing
2. *M.Eng.* in Computer Science, Cornell University
2018 — GPA 4.02
3. *B.S.* in Computer Science, Cornell University
2014–2018 — GPA 4.08

Teaching and Advising

Courses

1. *Penn CIS 552 “Advanced Programming”*
Prof. Stephanie Weirich
Head TA 2020–2021
2. *Penn CIS 810 “Writing and Speaking with Style”*
Prof. Benjamin C. Pierce
Head TA 2021
3. *Cornell CS 3110*
Prof. Nate Foster
Head TA 2017
4. *Cornell Engineering Leadership*
Profs. Erica Dawson and Werner Zorman
Head TA 2017
5. *Cornell CS 2112*
Prof. Dexter Kozen
TA 2016

Graduate Advisees

1. *Collaborator and Unofficial Co-Advisor*, Joseph W. Cutler
2. *Collaborator and Unofficial Co-Advisor*, Jessica Shi
3. *Co-Advisor*, Ernest Ng



Awards and Honors

1. *Victor Basili Postdoctoral Fellowship*
University of Maryland, Computer Science Department
2. *Certificate in Engineering Leadership*
Cornell Engineering Leadership Certification Program
3. *1st Place, Business Plan Competition*
Cornell School of Hotel Administration