

NOAM ZILBERSTEIN

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EDUCATION

Cornell University

Doctor of Philosophy (PhD), Computer Science

Aug 2021 - Aug 2026

Master of Science (MS), Computer Science

Aug 2021 - Dec 2023

University of Pennsylvania

Bachelor of Science in Engineering (BSE), Computer and Information Science

Aug 2011 - May 2015

summa cum laude

WORK EXPERIENCE

Stevens Institute of Technology

Assistant Professor, Department of Computer Science

Aug 2026 - present

New York University

Postdoctoral Associate, Courant Institute

Jun 2026 - Aug 2026

Cornell University

Graduate Research Assistant, Department of Computer Science

Sep 2021 - May 2026

Facebook

Staff Software Engineer (IC6), Programming Languages and Runtimes Team

Feb 2019 - Sep 2021

Senior Software Engineer (IC5), Integrity Infrastructure Team

Aug 2017 - Feb 2019

Software Engineer (IC3/IC4), Integrity Infrastructure Team

Jul 2015 - Aug 2017

Software Engineering Intern, Integrity Infrastructure Team

May 2014 - Aug 2014

HONORS AND AWARDS

POPL Distinguished Paper Award

Jan 2026

ACM Special Interest Group on Programming Languages

Jane Street Graduate Fellowship Honorable Mention

Feb 2025

Jane Street

ACM SIGPLAN John Vlissides Award

Oct 2024

ACM Special Interest Group on Programming Languages

NSF Graduate Research Fellowship Honorable Mention

Apr 2023

National Science Foundation

Computer Science Academic Award

May 2015

University of Pennsylvania

Computer and Information Science Senior Design Third Prize

May 2015

University of Pennsylvania

FUNDED GRANT PROPOSALS

NSF: #2504142, #2504143 SHF: Medium: Probabilistic Concurrent Outcome Logic

July 2025

The National Science Foundation

Team: Alexandra Silva (co-PI), Joseph Tassarotti (co-PI), **Noam Zilberstein** (contributor)

CONFERENCE AND JOURNAL PUBLICATIONS

- [1] **Noam Zilberstein**, Alexandra Silva, Joseph Tassarotti. Probabilistic Concurrent Reasoning in Outcome Logic: Independence, Conditioning, and Invariants. *In Proceedings of the ACM on Programming Languages, Volume 10, Issue POPL, January 2026.* <https://doi.org/10.1145/3776651>
- [2] **Noam Zilberstein**. Outcome Logic: A Unified Approach to the Metatheory of Program Logics with Branching Effects. *ACM Trans. Program. Lang. Syst. (TOPLAS) Volume 47, Issue 3, Article 14, September 2025.* <https://doi.org/10.1145/3743131>
- [3] **Noam Zilberstein**, Daniele Gorla, and Alexandra Silva. Denotational Semantics for Probabilistic and Concurrent Programs. *In 36th International Conference on Concurrency Theory (CONCUR 2025). Leibniz International Proceedings in Informatics (LIPIcs), Volume 348, pp. 39:1-39:24, Schloss Dagstuhl – Leibniz-Zentrum für Informatik (2025).* <https://doi.org/10.4230/LIPIcs.CONCUR.2025.39>
- [4] **Noam Zilberstein**, Dexter Kozen, Alexandra Silva, Joseph Tassarotti. A Demonic Outcome Logic for Randomized Nondeterminism. *In Proceedings of the ACM on Programming Languages, Volume 9, Issue POPL, January 2025.* <https://doi.org/10.1145/3704855>
- [5] Linpeng Zhang, **Noam Zilberstein**, Benjamin Lucien Kaminski, Alexandra Silva. Quantitative Weakest Hyper Pre: Unifying Correctness and Incorrectness Hyperproperties via Predicate Transformers. *In Proceedings of the ACM on Programming Languages, Volume 8, Issue OOPSLA2, October 2024.* <https://doi.org/10.1145/3689740>
- [6] **Noam Zilberstein**, Angelina Saliling, Alexandra Silva. Outcome Separation Logic: Local Reasoning for Correctness and Incorrectness with Computational Effects. *In Proceedings of the ACM on Programming Languages, Volume 8, Issue OOPSLA1, April 2024.* <https://doi.org/10.1145/3649821>
- [7] **Noam Zilberstein**, Derek Dreyer, Alexandra Silva. Outcome Logic: A Unifying Foundation for Correctness and Incorrectness Reasoning. *In Proceedings of the ACM on Programming Languages, Volume 7, Issue OOPSLA1, April 2023.* <https://doi.org/10.1145/3586045>
- [8] Quentin Carbonneaux, **Noam Zilberstein**, Christoph Klee, Peter O’Hearn, Francesco Zappa Nardelli. Applying Formal Verification to Microkernel IPC at Meta. *In Proceedings of the 11th ACM SIGPLAN International Conference on Certified Programs and Proofs (CPP ’22), January, 2022.* <https://doi.org/10.1145/3497775.3503681>
- [9] **Noam Zilberstein**. Eliminating Bugs with Dependent Haskell. *In Proceedings of the 13th ACM SIGPLAN International Haskell Symposium (Haskell ’20), August 2020.* <https://doi.org/10.1145/3406088.3409020>

WORKSHOPS AND SHORT PAPERS

- [1] **Noam Zilberstein**. Modeling Incorrectness and Unknown Functions with Angelic and Demonic Nondeterminism. *In 2nd Workshop on Theory and Practice of Static Analysis (TPSA ’26).*
- [2] James Li, **Noam Zilberstein**, Alexandra Silva. Total Outcome Logic: Termination and Nontermination Proving for Effectful Branching. *In 1st Workshop on Theory and Practice of Static Analysis (TPSA ’25).*
- [3] **Noam Zilberstein**. Unified Analysis Techniques for Programs with Outcomes. *In Companion Proceedings of the 2024 ACM SIGPLAN International Conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH Companion ’24).* <https://doi.org/10.1145/3689491.3691814>

TALKS

Conferences and Workshops

POPL 2026. Rennes, France.	<i>January 2026</i>
TPSA 2026. Rennes, France.	<i>January 2026</i>
CONCUR 2025. Aarhus, Denmark.	<i>August 2025</i>
POPL 2025. Denver, CO.	<i>January 2025</i>
OOPSLA 2024. Pasadena, CA.	<i>October 2024</i>
OOPSLA Doctoral Symposium. Pasadena, CA.	<i>October 2024</i>
New Jersey Programming Languages and Systems Seminar (NJPLS). New York, NY.	<i>May 2024</i>
OOPSLA 2023. Cascais, Portugal.	<i>October 2023</i>
Iris Workshop. MPI-SWS. Saarbrücken, Germany.	<i>May 2023</i>
Certified Programs and Proofs (CPP'22). Philadelphia, PA.	<i>January 2022</i>
Haskell Symposium (Haskell'20).	<i>August 2020</i>

Invited Talks

Bloomberg. New York, NY.	<i>July 2026</i>
University of Pennsylvania PL Club. Philadelphia, PA.	<i>November 2025</i>
PL at University of Maryland Seminar. College Park, MD.	<i>November 2025</i>
Princeton PL Group Seminar. Princeton, NJ.	<i>October 2025</i>
Cornell PL Discussion Group. Ithaca, NY.	<i>September 2025</i>
MIT PL Review. Cambridge, MA.	<i>April 2025</i>
Boston University POPV Seminar. Boston, MA.	<i>April 2025</i>
Northeastern University. Boston, MA.	<i>April 2025</i>
Stevens Institute of Technology PL Seminar. Hoboken, NJ.	<i>April 2025</i>
PL & Formal Methods Seminar. New York University. New York, NY.	<i>October 2023</i>
Type My Morning. Meta London. London, UK	<i>June 2023</i>
Imperial College London. London, UK	<i>June 2023</i>
Technion—Israel Institute of Technology. Haifa, Israel	<i>May 2023</i>
Tel Aviv University PL & Systems Seminar. Tel Aviv, Israel	<i>May 2023</i>
Facebook Testing and Verification Symposium (TAV)	<i>December 2021</i>
YOW! Lambda Jam	<i>May 2021</i>

TEACHING

Teaching Assistant

August 2021 - present

Cornell University

CS 6110: Advanced Programming Languages	<i>Spring 2022</i>
CS 4110: Programming Languages and Logics	<i>Fall 2021</i>

Course Instructor, CIS 194: Introduction to Haskell

January 2015 - May 2015

University of Pennsylvania

<https://www.seas.upenn.edu/~cis194/spring15/>

Teaching Assistant

August 2012 - May 2015

University of Pennsylvania

CIS 320: Algorithms	<i>Spring 2015</i>
CIS 121: Programming Languages and Techniques II: Algorithms and Data Structures	<i>Fall 2014</i>
CIS 371: Computer Organization and Design	<i>Spring 2014</i>
CIS 261: Discrete Probability, Stochastic Processes, and Statistical Inference	<i>Fall 2013</i>
CIS 120: Programming Languages and Techniques I (OCaml and Java)	<i>Fall 2012, Spring 2013</i>

PEER REVIEW

Journal Referee

Journal of Logic and Computation (JLC) 2026; Logical Methods in Computer Science (LMCS) 2026,2025; Transactions on Computational Logic (ToCL) 2026,2025

Program Committee Member

TPSA'26, TPSA'25, Incorrectness'24

External Expert Reviewer

POPL '25, POPL '24

Sub-Reviewer

GandALF '25, MFPS '25, ICALP '25, MFCS'24, LPAR'24, CONCUR'22, CAV'22

CONFERENCE ORGANIZATION

Artifact Evaluation Committee Chair

FoSSaCS'27

Organizer

2nd Workshop on Theory and Practice of Static Analysis (TPSA), POPL'26

Organizer

1st Workshop on Theory and Practice of Static Analysis (TPSA), POPL'25

Organizer

New Jersey Programming Languages and Systems Seminar (NJPLS), Fall 2024 at Cornell Tech

Organizer

1st Workshop on [Formal Methods for Incorrectness](#) (POPL'24)

Student Volunteering Co-Chair

8th Federated Logic Conference (FLoC'22)

SERVICE

PhD Admissions Committee

Cornell Department of Computer Science

Fall 2022, 2024

NJPLS Steering Committee

New Jersey Programming Languages and Systems Seminar

July 2024 - present

SIGPLAN-M Long-Term Mentor (2 Mentees)

ACM Special Interest Group on Programming Languages

Jan 2024 - present

PhD Panel Speaker

Programming Languages Mentoring Workshop (PLMW) at SPLASH 2023

Reviewer

Cornell Undergraduate Research Journal

Reading Group Organizer

Cornell Great Works in PL Reading Group

Spring 2022

Reviewer for Graduate Pre-application Feedback Program

Cornell Department of Computer Science

Fall 2021

Student Volunteer

55th Annual Symposium on Foundations of Computer Science (FOCS'14)

ADVISING AND MENTORING

Hanxi Chen. Oblivious Probabilistic Concurrent Outcome Logic.

Cornell University, Doctor of Philosophy (PhD), Computer Science, May 2031 (expected).

Emmanuel Suárez Acevedo. Logics for Probabilistic Liveness.

Cornell Tech, Doctor of Philosophy (PhD), Computer Science, May 2030 (expected).

James Li. Total Outcome Logic.

Cornell University, Master of Science (MS), Computer Science, August 2025. Now at Northeastern.

Sean Wang. Formal Verification of Outcome Logic in Coq.

Cornell University, Master of Engineering (MEng), Computer Science, May 2024. Now at Princeton.

Angelina Saliling. It's a Warning, Not an Error! Formal Methods for Finding Bugs.

Cornell University, Bachelor of Arts (BA), Computer Science, May 2023.

Runner up in Cornell CIS undergraduate poster session competition. Now at Palantir.