Thomas J. Porter

CV • January 13, 2026

thomasjp@umich.edu thomasporter522.github.io thomasporter522

Education

Aug 2024 - Now • **PhD Student in Computer Science & Engineering** • University of Michigan
Candidate since June 2025. Advised by Cyrus Omar in the Future of Programming Lab.

Aug 2019 - Dec 2022 • **BA in Mathematics & Computer Science** • Cornell University
GPA: 4.041/4.3. Cum laude in math. Classes in functional programming, programming language theory, compilers, formal verification, logic, machine learning, and linguistics.

Publications

Incremental Bidirectional Typing via Order Maintenance
Thomas J. Porter, Marisa Kirisame, Ivan Wei, Pavel Panchecka, Cyrus Omar
OOPSLA 2025 🏆 *Distinguished Paper Award*

Syntactic Completions with Material Obligations
David Moon, Andrew Blinn, Thomas J. Porter, Cyrus Omar
OOPSLA 2025

Grove: A Bidirectionally Typed Collaborative Structure Editor Calculus
Michael D. Adams, Eric Griffis, Thomas J. Porter, Sundara Vishnu Satish, Eric Zhao, Cyrus Omar
POPL 2025

Polymorphism with Typed Holes
Adam Chen, Thomas Porter, Cyrus Omar
TFP 2024

Automatic Error Analysis for Document-level Information Extraction from Scientific Text
Aliva Das, Xinya Du, Barry Wang, Kejian Shi, Jiayuan Gu, Thomas Porter, Claire Cardie
ACL 2022

Teaching

Winter 2026 • **GSI for CSE 590: Advanced Programming Languages** • *University of Michigan*
Fall 2025 • **GSI for EECS 490: Programming Languages** • *University of Michigan*
Fall 2022 • **TA for CS 3110: Functional Programming** • *Cornell University*
Fall 2021 • **TA for CS 3410: Computer Systems** • *Cornell University*
Fall 2020, Spring 2021 • **TA for CS 2800: Discrete Structures** • *Cornell University*

Programs

2024 School on Univalent Mathematics • *University of Minnesota*
2024 Oregon Programming Languages Summer School • *Boston University*
2022 Summer School in Logic and Formal Epistemology • *Carnegie Mellon University*
2021 Computer Science Undergraduate Research Program (CSURP) • *Cornell University*

Conferences

Presented : **SPLASH/OOPSLA 2025** • *Singapore, Singapore*
Presented : **POPL/WITS 2025** • *Denver, CO*
Presented : **TFP 2024** • *South Orange, NJ*
Attended : **MWPLS 2023** • *Ann Arbor, MI*
Attended : **ICFP/PLMW 2023** • *Seattle, WA*

Talks

Incremental Bidirectional Typing via Order Maintenance • *OOPLSA 2025*
Incremental Bidirectional Typing via Order Maintenance • *WITS 2025*
Polymorphism with Typed Holes (Presented with Adam Chen) • *TFP 2024*
A Rapid Introduction to Type Theory • *Splash! at Cornell, Fall 2022*

Additional Research

Jun 2022 - Sept 2022 • **PDG Divergence Research** • Cornell University
With Oliver Richardson, Joseph Halpern

Explored alternative definitions of Probabilistic Dependency Graph inconsistency using different statistical divergences. PDG's

Jan 2022 - May 2022 • **AI POWER-Seeking Research** • AI Safety Camp
With Tomasz Korbak, Samuel King, Ben Laurense, Alex Turner

Worked to generalize the original POWER-Seeking Theorem to partially observable environments, modeled as Partially Observable Markov Decision Processes.

Nov 2021 - Oct 2022 • **Causal Intention Research** • Cornell University
With Meir Friedenberg, Joseph Halpern

Examined the relationship between the Cohen & Levesque and Halpern & Kleiman-Weiner definitions of Intention by defining them both in a unified formal model.

Oct 2019 - Mar 2020 • **Word Vector Geometry Research** • C.Psyd, Cornell University
With Marten van Schijndel

Worked on analyzing the geometry of syntactic classes in word vector embeddings.

Industry Experience

Jun 2020 - Aug 2020, Jan 2021 • **Machine Learning Intern** • DTech, LLC

Researched and implemented machine learning algorithms for cybersecurity anomaly detection. Used Scala, Apache Spark, and TensorFlow.