

# Thomas Porter

CV • January 26, 2025

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## Education

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Aug 2024 - Now • **PhD Student in Computer Science & Engineering** • University of Michigan  
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

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### **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* 🔗

## Conferences

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Presented : **POPL/WITS 2025** 🔗 • Denver, CO

Presented : **TFP 2024** 🔗 • South Orange, NJ

Attended : **MWPLS 2023** 🔗 • Ann Arbor, MI

Attended : **ICFP/PLMW 2023** 🔗 • Seattle, WA

## Programs

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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*

## Talks

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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*

## Teaching

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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*

## Additional Research

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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 Laurence, 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

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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.