

ANDREW BLINN

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me @ andrewblinn.com  github.com/disconcision  twitter.com/disconcision

VISION

I use semantic theory to design contextual, conversational, and compositional interfaces, trying to make working with abstraction & complexity more accessible, tangible, and fun.

FOCUSES

Programming Languages + Liveness + Learning · Human-Computer Interaction

PAPERS

Syntactic Completions with Material Obligations · OOPSLA · 2025

David Moon, [Andrew Blinn](#), Thomas Porter, Cyrus Omar

Statically Contextualizing Large Language Models with Typed Holes · OOPSLA · 2024

[Andrew Blinn](#), Kevin Li, June Hyung Kim, Cyrus Omar

Total Type Error Localization and Recovery with Holes · POPL · 2024

Eric Zhao, Raef Maroof, Anand Dukupati, [Andrew Blinn](#), Zoe Pan, Cyrus Omar

Gradual Structure Editing with Obligations · VL/HCC · 2023

David Moon, [Andrew Blinn](#), Cyrus Omar

An Integrative Human-Centered Architecture for Interactive Programming Assistants · VL/HCC · 2022

[Andrew Blinn](#), David Moon, Eric Griffis, Cyrus Omar (addendum formalizing [suggestion](#) & [sensitivity](#))

Filling Typed Holes with Live GUIs · PLDI · 2021

Cyrus Omar, David Moon, [Andrew Blinn](#), Ian Voysey, Nick Collins, Ravi Chugh

WORKSHOP PAPERS

Toward a Live, Rich, Composable, and Collaborative Planetary Compute Engine · PROPL · 2024

Alexander Bandukwala, [Andrew Blinn](#), Cyrus Omar

Tyler - A Tiny Tile-based Structure Editor · TyDe · 2022

David Moon, [Andrew Blinn](#), Cyrus Omar

SCHOOL

University of Michigan / FPLab · Ph.D Candidate (ABD), Computer Science · Now

Researching code context enrichment for humans & LLMs, advised by [Cyrus Omar](#).

Lead engineer on the [Hazel IDE](#), deployed to hundreds of students + external researchers

University of Michigan · Master's of Science, Computer Science · 2023

Coursework in PL theory, program synthesis, category theory, HCI, & the psychology of learning

University of Toronto · H.B.Sc, Mathematics & Computer Science · 2019

Graduate coursework in abstract algebra, compilers, and computer graphics.

Built [Fructose](#) and [Containment Patterns](#) as independent study advised by [Gary Baumgartner](#).

Researched [variational analysis of SPLs](#) with [Marsha Chechik](#) & [Ramy Shanin](#), including [SpyShare](#).

FUNDING

ARIA Safeguarded AI · Lead Co-Investigator on Research Grant · 2025 - Now

Researching and prototyping an [orchestration layer & computational commons](#) to support collaboration with autonomous AI researchers on safety-critical cyberphysical applications

INDUSTRY

TODAQ Toronto · Full-stack development in Clojure · 2019 - 2020 (2 years)

Designed new front-end interfaces to [sharpen the materiality of distributed digital assets](#).

Implemented core back-end features for a decentralized digital asset management protocol

SPEAKING ✈️

- Invited speaker at RacketCon** · 2019 · Salt Lake City · [Recorded Talk](#) · [Slides](#)
Introduced [Fructure](#), a prototype structured interaction engine for edit-time term-rewriting
- Accepted speaker at OOPSLA** · 2024 · Los Angeles · [Recorded Talk](#) · [Slides](#)
Presented work on providing semantic context to language models using typed holes
- Accepted speaker at Midwest PL Summit** · 2023 · Ann Arbor · [Slides](#)
Progress report on type-directed prompt construction for LLM-powered code completion
- Accepted speaker at VL/HCC** · 2022 · Rome · [Recorded Talk](#) · [Slides](#)
Presented an integrative human-centered architecture for interactive programming assistants
- Guest Lecturer** · 2023 & 2022 · University of Michigan · [2023 talk](#) · [2022 talk](#)
Introduction to metaprogramming featuring Racket for [EECS490 - Programming Languages](#)

CONFERENCES 🎯

- Programming Committee Member** · 2025 [LIVE](#) + [HATRA](#) · 2024 [LIVE](#) + [Onward!](#) + [HATRA](#)
- Student Volunteer** · 2021 [SPLASH/OOPSLA](#)
- Seat Filler** · 2025 [ARIA Safeguarded AI Summit](#) x2 + [Ink & Switch London Social](#)
2024 [Ink & Switch Unconf](#) + [OOPSLA](#) + [LIVE](#) + [HATRA](#) + [Gradient Retreat](#)
2023 [MWPLS](#) + [Local First](#) + [Fission TrainJam](#) + [Strange Loop](#) + [Gradient Retreat](#) + [Causal Islands](#)
2020 - 2022 [VL/HCC](#) + [Gradient Retreat](#) + [SPLASH/OOPSLA](#) + [HATRA](#) + [LIVE](#)
2018 - 2019 [Racket Summer School](#) + [Clojure North](#) + [OPLSS](#) + [ICFP](#) + [Strange Loop](#) + [RacketCon](#)

TEACHING 📺

- Course Development** · 2022 - Now · University of Michigan
Led engineering on the [Hazel software exercises platform](#); developed assignments for [EECS490](#)
- Course Development** · Summer 2018 · University of Toronto
Designed course materials for [CSC324](#) including mini [algebraic stepper](#) + [pattern matching language](#)
- Teaching Assistantship** · 2018 - Now · Universities of Michigan & Toronto
- | | | |
|---------------------|------------------------|--|
| 2023, 2022, 2021 | University of Michigan | EECS490: Programming Languages |
| 2019, 2x 2018, 2017 | University of Toronto | CSC324: Principles of Programming Languages |
| 2018 | University of Toronto | CSC104: Introduction to Computational Thinking |

MENTORSHIP 💬

- Russell Rozenbaum & Cyrus Desai** — **Structured editing for LLMs** · 2024 - Now
Enriching agentic AI coding harnesses with contextual semantic editing actions
- June (Jacob) Kim** — **Typed hole filing with LLMs in TypeScript** · 2024 - 2025
Extracting semantic context for prompt construction using the TypeScript language server
- Xiang (Kevin) Li** — **Type-constrained LLM code completion via token masking** · 2023 - 2024
Modifying LLM decoding to enforce semantic as well as syntactic invariants
- Zachary Eichenberger & Eric Fan** — **Semantic editing + deep reinforcement learning** · 2021 - 2023
Typed structured editing for RL using graph neural networks; co-mentorship with [Ethan Brooks](#)
- Yash Gaitonde** — **Interfaces for live feedback in teaching IDEs** · 2021 - 2022
Implementing live test feedback in the Hazel IDE, deployed to a class of 100 undergraduates

MOUSEFEEL RESEARCH 🖱️

- Investigations in adding juice and gamefeel to algebraic user interfaces** · 2022 - Now
Figuring out how tangibility impacts explorability in math and coding with [nool](#) and [furl](#)