

ZHAOYI (AUGUST) GE

Waterloo, ON
z33ge@uwaterloo.ca

EDUCATION

University of Waterloo

September 2020 - May 2025

Bachelor of Computer Science (GPA: 91%)

Relevant Courses:

CS 245E - Logic and Computation (Enriched) - 100%

CS 241E - Foundations of Sequential Programs (Enriched) - 91%

PMATH 347 - Groups and Rings - 93%

RESEARCH INTERESTS

Programming Language Design / Type Systems / Semantics / Logic in Computer Science.

RESEARCH EXPERIENCE

Univeristy of Waterloo

September 2023 - Present

Undergraduate Research Fellow

- **Supervisor:** Yizhou Zhang
- **Project Title:** SSTAL: Stack-based Typed Assembly Language with Multi-stack Semantics
- The aim of this project was to develop an efficient and type safe target language for high-level languages with lexical effect handlers. The target language allows fast effect handling by having a type-safe multi-stack hierarchy. I implemented a prototype compiler of SSTAL in OCaml, which invovles designed and implemented type-checking algorithms for stack types and capabilities. This work is to be submitted to ICFP 2024.

WORK EXPERIENCE

Genesys

May 2023 - August 2023

Software Developer Intern

Markham, Ontario

- Led the development of a security automation service in Python for cloud native applications.

MeshAI

May 2022 - August 2022

Software Developer Intern

Remote

- Built healthcare services using Java and GraphQL. Improved response time by caching using Redis.

PROJECTS

Proust

CS 245E Course Project

- Developed a simple interactive **proof assistant** for propositional and predicate logic using Racket.
- Proved theorems about natural numbers and Boolean algebra using the proof assistant.

Lacs

CS 241E Course Project

- Implemented a **compiler** for a minimal Scala-like language using Scala.
- Developed features such as garbage collection, higher-order functions and closures.

TECHNICAL SKILLS

Languages

OCaml, Coq, Scala, Agda, Racket, C++.

Tools and Technologies

Git, Docker, x86 Assembly.