

Jeremy Ku-Benjet

jeremykubenjet.com/professional.html

Email: jeremykubenjetschool@gmail.com

EDUCATION

- **Cornell University**

Ithaca, NY

Masters of Science in Computer Science

Aug 2025 – present

Bachelor of Science in Computer Science; GPA: 3.8

Aug 2022 – May 2025

Notable Coursework: Compilers, Programming Languages, Computer Architecture, Distributed Systems, Systems Programming, Functional Programming, Object Oriented Programming and Data Structures, Algorithms, Honors Theoretical Linear Algebra, Game Development

EXPERIENCE

- **Zhang Research Group**

Ithaca, NY

Student Researcher with Matt Hoffman and Zhiru Zhang

February 2024 – Present

- Investigate and implement LUT optimization via e-graphs using egg.
- Evaluate different sets of rewrites to limit e-graph size explosion.
- Write Rust bindings for Yosys netlists to allow Yosys plugins to interface with Rust projects.

- **Cornell Bowers Undergraduate Researcher Experience (BURE)**

Ithaca, NY

Student Researcher with Adrian Sampson

June 2024 – August 2024

- Investigate tools to reduce boilerplate and increase usability of compiler frontends using Rust, egg, and Ninja.
- Develop a novel compiler frontend under the mentorship of professor Adrian Sampson that leverages program synthesis to resolve user CLI requests, which is NP-hard for our use case.
- Extend the Rhai embedded scripting language to be used for configuring the Calyx compiler frontend.

- **Course Management System X (CMSX)**

Ithaca, NY

Software Engineer

Dec 2023 – Present

- Work with a team of 22 developers and designers on a course management system serving 1000s of students and professors across Cornell University.
- Audit a transaction based database system for errors when rolling back invalid database queries.
- Engineer rubrics for CMSX using JPA and JSP to make it easier for course staff to grade students.
- Add a calendar feature allowing students to download deadlines using ical calendar format.

- **Cornell University**

Ithaca, NY

Teaching Assistant

Dec 2023 – Present

- Improve assignments, staff office hours, teach sections, and grade, for Cornell's courses on Computer Architecture (ECE 5740), Computer Organization and Systems Programming (CS 3410), Object Oriented Programming and Data Structures (CS 2110), and Computer Game Architecture (CS/INFO 3152).
- Develop and test a tool to run student OS images remotely using ssh and docker.
- Debug Cornell's extensions to the LibGDX game library.

PROJECTS

Jorg: A general text templating tool taking a TOML configuration file and template files to create a result, written in Mercury.

Lox: A TUI for specifying lambda calculus terms and an interpreter to reduce them, written in OCaml.

Grafecs: A toy 3D graphics engine written in Rust.

Lead Programmer on Seas The Throne: An action-adventure bullet hell game, written in Java.

Lead Programmer on Apathia: A multiplayer online mobile strategy game, written in C++.

SKILLS

- **Programming Languages:** Rust, C++, C, Python, Java, OCaml, Mercury (similar to Prolog), Verilog/System Verilog, Assembly (RISC-V and x86-64), Bash
- **Technologies:** MLIR, Yosys, Git, Unix Shell Scripting, CMake, Make, Ninja, Docker/Podman
- **Human Languages:** English (Native)