

Theo Kroening

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EDUCATION

Carnegie Mellon University

BS in Computer Science (Concentration in Computer Systems)

May 2025
Pittsburgh, PA

- Coursework: Compiler Design, Computer Architecture, Database Systems, Algorithms, Software Engineering
- Dean's List Spring 2023, Spring 2024

EXPERIENCE

Hone Health

Software Engineering Intern

Jun 2024 - Aug 2024
Remote

- Developed features for the C#/.NET API backing the company's telehealth platform, and debugged critical infrastructure driving patient journeys and pharmacy integrations.
- Developed new front-end features in JavaScript to improve user-experience in the company's Electronic Medical Records tool.
- Using SQL, wrote queries to identify bug-causing data issues in databases, and wrote scripts to resolve them.
- Built a TypeScript + React (NextJS) web app, providing developers with an easy-to-use suite of devtools, including a staging tool (similar to Postman Flows) for simulating different points in the patient journey, as well as a tool to visualize patient journeys in a tree-based view.

School of Computer Science, Carnegie Mellon University

Teaching Assistant, 15-213 (Introduction to Computer Systems)

Aug 2023 - Dec 2023
Pittsburgh, PA

- Taught recitations on systems concepts, including virtual memory and process/thread-level programming.
- Taught x86-64 assembly using gdb, focusing on exploiting and guarding against security vulnerabilities.
- Helped students implement a dynamic memory allocator (`malloc`), a shell, and a caching multi-threaded web proxy.

School of Computer Science, Carnegie Mellon University

Teaching Assistant, 15-112 (Fundamentals of Programming and Computer Science)

Jan 2022 - Aug 2023
Pittsburgh, PA

- Mentored students on their final (>1000 line) Term Projects. Advised on algorithms (pathfinding, maze generation, network programming) and code organization.
- Designed and led seminars on course content (backtracking) and advanced Python features (magic methods).

PROJECTS

C0 Compiler

Spring 2024

- Implemented a compiler for C0 (a memory-safe subset of C) in OCaml, targeting x86-64 assembly. The compiler supports all C0 language features, including branching, functions, structs, arrays, and runtime bounds checks. Implemented lexing, parsing, semantic analysis, and a graph-based register allocator.

FRPico

Fall 2023

- Wrote embedded CircuitPython to integrate a Raspberry Pi Pico with hardware components including joysticks and LCDs. Implemented UI to control the hardware and module-to-module communication over UART.

Wean 9

Fall 2021

- Implemented a dungeon crawler game in Python and tkinter for 15-112, making heavy use of OOP. The project was selected from nearly 500 as the winner of the course's term project showcase.

Dragonfly

2021

- Developed a learning management system (LMS) with a Python Flask backend using a sqlite database and Amazon S3. Built a custom question and rubric builder UI using vanilla JavaScript.

TECHNICAL SKILLS

Languages

Python, C, C#, C++, JavaScript, TypeScript, SML, OCaml, SQL, HTML, CSS, Bash

Technologies/Tools

React, git, gdb