

Daniel Liu

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Education

University of Michigan - Ann Arbor, MI

GPA: 3.9 / 4.0

Dual Degree in Computer Science (B.S.E) & Chemistry (B.S)

Relevant Coursework

EECS 281 – Data Structures and Algorithms

EECS 370 – Introduction to Computer Organization

EECS 482 – Introduction to Operating Systems

EECS 376 – Foundations of Computer Science

Personal Projects (full list at <https://github.com/danliu>)

Programming Language Design ([beep boop](#), [shift](#), [creative writing](#), [this is all made up](#))

- Designed multiple programming languages based around various ideas and themes from group chats and conversations
- Developed over the course of 1-2 weeks using HTML, Bootstrap, and Javascript

Maze Generation Algorithm ([maze-maker](#))

- Implemented a random maze generation algorithm using the Aldous-Broder algorithm
- The maze is displayed using the HTML canvas and Javascript

Assembly Language Simulator ([LC2K01](#))

- Implemented a simulator for the LEGv8 ISA with Javascript.
- Allows users to examine the contents of memory, registers, and flags during execution.

Turret Wars: macOS SpriteKit application

- Used Swift and the SpriteKit 2D game engine framework to create an arcade-themed shooter game.
- Developed over 1 week, 3000+ lines of Swift code.

Work Experience

University of Michigan College of Engineering

Sep. 2020 – present

Instructional Aide for EECS 281 and EECS 370

- Teach weekly discussion sections to review lecture material
- Conducted office hours to give one-on-one help to students with conceptual material and coding projects
- Devised lab assignments and exams to ensure students are keeping up with and learning course material

University of Michigan Department of Electrical Engineering and Computer Science

May. 2021 – present

Student Researcher, Advisor: Dr. Manos Kapritsos

- Develop extensions to Dafny, a formal verification language, which allow developers to write code more efficiently by avoiding common pitfalls and time sinks.

University of Michigan Department of Chemistry

Sep. 2019 – present

Student Researcher, Advisor: Dr. Melanie Sanford

- Perform experimental and computational modeling of C–H activation reactions
- Received a fellowship through the Margaret & Herman Sokol Award to perform research over the summer

Skills

Languages: C++, C, Swift, HTML/CSS/Javascript, Bash, Python

Software: Git, Xcode, CLion, vim, gdb