

# Daniel Liu

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<https://danliu.github.io>

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## Education

### University of Michigan

B.S. in Chemistry and B.S.E. in Computer Science

Ann Arbor, MI

Current weighted GPA: **3.9 / 4.0**

### Relevant Coursework

EECS 280 – Programming and Introductory Data Science    EECS 370 – Introduction to Computer Organization  
EECS 281 – Data Structures and Algorithms                EECS 482 – Introduction to Operating Systems

## Personal Projects

A full list of projects can be found 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.

### Linktracker: (<https://github.com/danliu/linktracker>)

- Used Vue.js to develop a browser app to keep track of meeting links.
- All data is stored in browser storage, rather than servers, so meeting passwords are more secure.

### Assembly Lanugage Simulator: (<https://github.com/danliu/le2k01>)

- Implemented a simulator for the LEGv8 ISA with Javascript. Instructions are translated to machine code, which is then executed. The contents of memory, registers, and flags can be examined 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

Instructional Aide (IA) for EECS 281 and EECS 370

University of Michigan, Fall 2020 – Spring 2021

- 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
- Answered student questions on Piazza, the course Q&A forum.
- Devised lab assignments and exams to ensure students are keeping up with and learning course material
- Taught students during the double-pace spring semester with two other staff members.

Mathematics tutoring with the Comprehensive Studies Program  
for Precalculus, Calculus I and II, and Discrete Mathematics

University of Michigan  
Fall 2019 – Winter 2020

- Tutored students from a diverse set of backgrounds, especially underrepresented students, in mathematics.

University of Michigan Department of Chemistry  
Research Advisor: Dr. Melanie Sanford

September 2019 – present

- Perform experimental and computational modeling of C–H activation reactions.
- Received a fellowship through the Margaret & Herman Sokol Award to perform research over summer of 2020.

University of Toledo Department of Chemistry and Biochemistry  
Research Advisor: Dr. Michael Young

March 2017 – August 2019

- Investigated C–H activation reactions on amine substrates.
- Published three papers in peer-reviewed journals and presented at a research poster session.

## Skills:

- Programming Languages: C++, C, Swift, HTML/CSS/Javascript, React.js, Vue.js, Bootstrap, Bash, Python
- Operating Systems: MacOS, Windows 10
- Software: Git, Xcode, CLion, vim, gdb