

# William Wang

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## Education

### Cornell University

Bachelor's in Computer Science and Physics

June 2020 - May 2024

Dean's List

- Honors Data Struct. and OOP
- Systems Programming
- Computer Architecture
- Functional Programming
- C++ Programming
- Discrete Structures
- Intro Compilers\*
- Computer Vision\*
- Multivariable Calculus
- Differential Equations
- Linear Algebra

\*In progress

## Skills

Languages: Python, Java, Kotlin, C, C++, OCaml, FORTRAN, Assembly (RISC-V), Javascript, HTML, CSS, Swift

Tools: Git, GitHub, MATLAB, Linux/Unix, Firebase,  $\text{\LaTeX}$ , CAD, Microsoft Office, Inkscape

## Experience

### Laboratory for Laser Energetics

Research Assistant, Software Engineer Intern

Jun 2019 - present

Rochester, NY

- Conducted research in inertial confinement fusion and developed a FORTRAN code to simulate laser-driven capsule implosions in various case designs.
- Multi-threaded code using OpenMP to improve performance as much as 600%.
- Designed a novel hohlraum geometry that achieves higher levels of uniformity than current designs (less than 1% rms nonuniformity).
- Published a first author paper to *The Physics of Plasmas*. Presenter at the 62nd Annual Meetings of the APS Division of Plasma Physics (Session GO09).

### Cohen Laboratory (Cornell University)

Undergraduate Researcher

Feb 2021 - present

Ithaca, NY

- Developed both 2D and 3D computational models in Python to study the mechanical properties of articular cartilage and the behavior of several lattice/network structures.
- Implemented optimization algorithms (conjugate gradient) to find the minimal energy state of networks (optimizing up to 10,000 parameters).

### Cornell University CIS Course Staff

Consultant/Teaching-Assistant

Aug 2021 - Dec 2021

Ithaca, NY

- CS 2112: Honors Object Oriented Programming and Data Structures
- Facilitate lab session, hold weekly office hours, design and grade assignments.

### Clinical Cardiovascular Research Center

Software Developer

Jun 2016 - Jan 2019

Rochester, NY

- Designed a Python program that parses and plots a patient's ECG data and in a clock-like graph. Created an online calculator in Javascript that assesses the absolute risk of life-threatening cardiac events in long QT syndrome patients.

### Eaton Cybersecurity SAFE Lab

Cybersecurity Intern

Sep 2018 - Jun 2018

Rochester, NY

- Tested device-penetration against IoT devices and created a network of virtual machines for protection-testing

## Projects

### Steer Calendar | Swift, Firebase, SQLite

Launched an iOS app that fetches calendar information from user-saved teacher webpages, parses the iCalendar data, and displays the course content on students' devices.

### Clarkanoid | OCaml, SDL

Led a team of three to create an RPG game with a custom Entity-Component-System, physics engine, enemy ai, six terrains, hundreds of hand-drawn pixel art sprites, and custom soundtracks.

### Snake Gamebot | Python, Tensorflow

Wrote and trained (supervised learning) neural networks to play "Snake" using data collected and analyzed from previous player attempts, achieving performance similar to or better than.

### Critter World | Java, JavaFX

Created a graphical simulation consisting of multiple critters, each storing a unique program written in a custom context-free grammar, "critter-lang." Developed a grammar parser and interpreter for critter-lang.