# William Wang

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### **Education**

Cornell University Jun 2020 - May 2024

Bachelor's in Computer Science and Physics

Dean's List

· Honors Data Struct. and OOP

Functional Programming

Compilers\*

Computer Vision\*

Systems ProgrammingComputer Architecture

C++ ProgrammingDiscrete Structures

Skills \*In progress

Languages: Python, Java, Kotlin, C, C++, OCaml, FORTRAN, Assembly, Javascript, HTML, CSS Tools: Git, GitHub, R, MATLAB, Linux/Unix, Vim, Bash, Firebase, LaTeX, CAD, Microsoft Office, Inkscape

### **Experience**

### **Laboratory for Laser Energetics**

Jun 2019 - present

Research Assistant

Rochester, NY

- Conducted research in inertial confinement fusion and developed a Fortran code to simulate laser-driven capsule implosions in various case designs.
- 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)**

Feb 2021 - present

Undergraduate Researcher

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.

### **Cornell University CIS Course Staff**

Jun 2021 - Present

Teaching Assistant

Ithaca, NY

- CS 3410: Computer System Organization and Programming
- CS 2112: Object Oriented Programming and Data Structures (Honors)

### **Clinical Cardiovascular Research Center**

Jun 2016 - Jan 2019

Software Developer

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.

## **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.

### 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.

### Chess/Ultimate Tic-Tac-Toe | Kotlin

Over the period of two days, created both a custom chess engine and ultimate tic-tac-toe engine featuring an AI that performs alpha-beta pruning algorithms and a Monte-Carlo Search Tree that evaluates 30,000 entire games per second.

#### Simulating Evolving Artificial Life | Java, JavaFX

Created a system to simulate multiple critters, each defined by a unique program written in a custom context-free grammar, "critter-lang." Designed and developed an abstract syntax tree interpreter and a real-time GUI using JavaFX.

### Javalin | Java, Kotlin

Designed and developed a compiler that generates optimized x86-64 assembly code for Xi, a procedural language.

Last Updated April 12, 2022