William Wang

williamywang.com | wyw6@cornell.edu | GitHub | Ithaca, NY

Education

Cornell University June 2020 - May 2024
Bachelor's in Computer Science and Physics Dean's List

- Honors Data Structures and OOP
- Systems Programming
- Computer Architecture
- Functional Programming
- C++ Programming
- Discrete Structures
- Compilers
- Computer Vision
- Machine Learning

Skills

Languages: Python, Kotlin, Java, C, C++, OCaml, Fortran, Assembly, Javascript, HTML, CSS, Swift
Tools: PyTorch, NumPy, OpenCV, SciPy, MATLAB, Linux/Unix, Firebase, LaTeX, CAD, Microsoft Office, Inkscape, Git

Experience

Banking and Spend Team May 2022 - Aug 2022
Square/Block - Software Engineer Intern San Francisco, CA

- Incoming Software Engineer Intern for Kotlin development at Square.

Simulating Shear Mechanics of Biological Tissues Feb 2021 - present
Cornell University - Undergraduate Researcher Ithaca, NY

- Developed a modular protocol and computational models for simulating biological tissues in Python
- Researched and implemented fast optimization algorithms to efficiently solve energy minimization landscapes (optimizing up to 10,000 parameters)
- Presented research to cross-disciplinary audiences at Cornell University and Rochester Institute of Technology

Inertial Confinement Fusion Simulation Jun 2019 - present
Laboratory for Laser Energetics - Research Assistant Rochester, NY

- Developed Fortran simulations to simulate and optimize new case geometries (hohlraums) for laser-driven nuclear fusion.
- Designed a novel hohlraum geometry that achieves higher levels of uniformity than current designs, less than 1% nonuniformity.
- Presenter at the 62nd Annual Meetings of the APS Division of Plasma Physics (Session GO09).
- Published Wang et Craxton, 2020, *The Physics of Plasmas*

Teaching Assistant Aug 2021 - Dec 2021
Cornell University CIS Course Staff Ithaca, NY

- CS 2112: Honors Object Oriented Programming and Data Structures
- CS 3410: Computer System Organization and Programming
- Lead and facilitate lab and discussion sessions, hold weekly office hours, design and grade homework assignments.

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." Developed a recursive-descent parser, abstract syntax tree interpreter, and a concurrent GUI.

Javalin Compiler (xic) | JFlex, Kotlin
Worked in a team of four to create an optimizing compiler that targets x86-64 assembly code for Xi, a procedural programming language.