William Wang

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Education

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

- Honors Data Struct. and OOP
- Systems Programming
- Computer Architecture
- Functional Programming
- C++ Programming
- Discrete Structures
- 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, Vim, Firebase, LaTeX, CAD, Microsoft Office, Inkscape

Experience

Laboratory for Laser Energetics Jun 2019 - present
Research Assistant, Software Engineer Intern 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) 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 (optimizing up to 10,000 parameters).

Cornell University CIS Course Staff Aug 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.

Eaton Cybersecurity SAFE Lab Sep 2018 - Jun 2018
Cybersecurity Intern 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.