William Wang

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Education

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

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

Skills

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

Experience

Laboratory for Laser Energetics   Jun 2019 – present
Project Assistant, Computational Physicist   Rochester, NY

- Conducted research in inertial confinement fusion and developed a 3-D view-factor code in FORTRAN (multi-threaded with OpenMP) to simulate laser-driven capsule implosions in various hohlraum designs.
- Developed 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).

Itai Cohen Laboratory (Cornell University)   Feb 2021 – present
Undergraduate Researcher   Ithaca, NY

- Developed both 2-D and 3-D computational models in Python to study the mechanical properties of articular cartilage and the behavior of several lattice structures.
- Implemented optimization algorithms (conjugate gradient) to find the minimal energy state of networks.
- Studied and currently writing paper on polarized cartilage networks.

Cornell University CIS Course Staff   Aug 2021 — present
Consultant/Teaching-Assistant   Ithaca, NY

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

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.