William Y. Wang

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Education

Cornell University | May 2024
College of Arts and Sciences
Computer Science and Physics
Dean's List

Coursework

Computer Systems Programming
Functional Programming
Honors OOP and Data Structures
C++ Programming
Discrete Structures
Mechanics and Special Relativity
Electricity and Magnetism
Comparative Physiology
Multivariable Calculus
Differential Equations
Linear Algebra

Skills

Java · Python · FORTRAN
OCaml · C · C++
Javascript · HTML · CSS
MATLAB · Swift · LaTeX

Publications

W.Y. Wang and R. S. Craxton, "Pentagonal prism spherical hohlraums for OMEGA," **28**, 062703 (2021)

Awards

Schreiner STEM Scholarship

Xerox Award for Innovation and Information Technology

American Computer Science League 1st Individual in New York

Maureen O'Donnell Oxford Classical Dictionary Award

Work Experience

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

- Conducted research in fusion energetics and developed a 3-D view-factor code in FORTRAN (and multi-threaded with OpenMP) to simulate indirect-drive target implosions in various hohlraum designs.
- Developed novel hohlraum design and published paper (first author) to *The Physics of Plasmas*.
- Presenter at the 62nd Annual Meetings of the APS Division of Plasma Physics (Session GO09).

Cornell University CIS Course Staff August 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.

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 mechanical properties of articular cartilage and several lattice structures.
- Implemented conjugate gradient algorithms to find minimized energy state of networks.
- Studied and currently writing paper on polarized cartilage networks.

Clinical Cardiovascular Research Center Jun 2016 - Jan 2019
Software Developer Rochester, NY

- Developed "QTClock": a Python program that plots a patient's heart QT interval data (obtained from ECG recordings) and the patient's intake drug concentration in a clock-like graph.
- Also developed an online calculator that assesses the absolute risk of life-threatening cardiac events in patients with long QT syndrome.

Projects

Steer Calendar | Swift, Firebase, SQLite
Developed an iOS app that fetches information from teacher webpages, parses iCal data, and displays 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, six terrains, hundreds of hand-drawn pixel art sprites, and custom soundtracks.

Snake Gamebot | Python, Tensorflow
AI trained to play Snake using data collected from previous player data, achieving performance similar to or better than.

Critter World | Java, JavaFX
Graphical simulation with multiple critters, each storing a unique program written in a context-free grammar, "critter-lang." Wrote a grammar parser and interpreter for critter-lang.