

Daniel Zhan

UNDERGRADUATE RESEARCHER, SOFTWARE ENGINEER

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Education

Cornell University

Ithaca, NY

B.S. IN ENGINEERING PHYSICS AND COMPUTER SCIENCE: GPA: 3.5/4.0

Expected May 2023

Coursework:

Physics: Mechanics (*Honors*) (TA), Electromagnetism I (TA), Waves (TA), Quantum Mechanics I, Electromagnetism II, Astronomy & Cosmology

Computer Science: Machine Learning, Algorithms, Functional Programming, Operating Systems, Computer System Organization, Object

Oriented Programming and Data Structures, Market Networks

Math: Mathematical Physics I, Differential Equations, Multivariable Calculus, Linear Algebra, Discrete Structures (*Honors*)

Experience

Honeywell

Broomfield, CO

PHYSICS LAB ENGINEER INTERN

Jun. 2021 - Aug 2021

- Currently developing a Python application to automate the circuit verification of a qubit ion trap board, which runs capacitance and resistance tests on hundreds of PCB pins to ensure proper qubit communication and manipulation.

Cornell Mars Rover

Ithaca, NY

SOFTWARE ENGINEER

Sept. 2020 - Present

- Optimized the Rover's Hardware Abstraction Layer to enable lag-less responsiveness to 150 remotely transmitted instructions per minute by implementing bundled message formatting and processing.
- Upgraded the Rover's messaging format to ASCII for improved legibility.
- Currently planning out an implementation of Inverse Kinematics for the Rover's arm to enable intelligent endpoint movement without requiring specification for individual motor writes.

Merck

Kenilworth, NJ

AUTOMATION DEVELOPER INTERN

Jun. 2020 - Apr. 2021

- Implemented efficient automation processes to time-consuming business tasks within the Merck Research Lab Workspace to enable up to 2000% speed-ups.
- Developed web-scraping automation tools using Python, Selenium, and Pandas to automate the collection and processing of competitor drug information.

Cornell Physics

Ithaca, NY

UNDERGRADUATE TEACHING ASSISTANT

Jan. 2019 - Dec. 2020

- Improved students' understanding of physical concepts and reasoning in discussion sections as a teaching assistant for Mechanics, Electromagnetism, and Waves.
- Guided students towards creative, multi-pronged approaches of replicating lecture results in a Mechanics laboratory section.

Projects

Exoplanet Data Visualizer

PYTHON, FLASK, ASTROPY

- Assisted in the development of a Flask web application that displays transmission spectra of a theoretical exoplanet with adjustable characterization parameters.
- Developed functionality to interpret parameters using AstroPy and big datasets from ten known exoplanets to display transit depth versus wavelength graphs.

Foodie - Submission for Everest Hacks 2020

PYTHON, TKINTER

- Developed a desktop application that suggests recipes to create and ingredients to purchase for said recipes with the TkInter GUI library.
- Placed top 10 overall at Everest Hacks 2020.

Skills/Activities

Languages/Frameworks

Python, Flask, Git, Java, C++, C, OCaml, HTML/CSS, LaTeX

Activities/Interests

Badminton (extremely proficient), Electric Bass (somewhat proficient), Civilization V (somewhat proficient),

Breakdance (not proficient), Cornell $\Lambda\Phi E$, Mentor @ ACSU