

Sofia P. Robertson

PH: 201-753-1298 | Email: sorobertson@g.hmc.edu

EDUCATION

Harvey Mudd College, CA

Expected Graduation May 2027

Bachelor of Science in Computer Science and Physics, Dean's List

Relevant Coursework: Quantum Mechanics, Math & Computational Methods for Physicists, Principles of Computer Science, Electromagnetic Theory & Optics, Mechanics & Wave Motion, Special Relativity, Differential Equations, Single and Multivariable Calculus, Linear Algebra

SKILLS

Programming: Python, Java, JavaScript, C++, HTML, HTMX, CSS, SQL, Django, Assembly Language, Racket, NumPy, SciPy, Matplotlib, Jupyter

Other: Human-Centered Design, Youth Mentoring, Problem Solving, Communication, Microsoft Office, Google Suites, Data Collection, Analysis, Strategic Planning, Advanced Spanish (read/write)

EXPERIENCE

Astrophysics researcher, Planetary Origins and Evolution Lab (POEL)

2025- Present

Conducting research under Professor Dan Tamayo in the POEL. Worked on further developing SPOCK (Stability of Planetary Orbital Configurations Klassifier), a ML model used to predict orbital stability of planetary systems.

Physics 24 (Mechanics & Wave Motion), Grader

2025

Grade and provide feedback on homework to 200+ students taking Mechanics & Wave Motion course.

P-ai at the Claremont Colleges: p-DataSciWebsite 2024 project, Software Engineer

2024

Developing a human-centered design Scripps College Data Science website using React.js and Flask.

NRAO/GBO Summer Student Research Assistantship, REU Student

2024

Primary location: Green Bank Observatory. Developed an integrated, real-time, web-based dashboard for the Green Bank Telescope as a proof of concept. Used analog radio equipment and mapped the Sagittarius A* region to produce a radio map of the active regions in the Milky Way.

Physicists Inspiring the Next Generation (PING), Mentor

2024

Supervised and mentored 20 students during educational seminars and lectures about astrophysics. Oversaw and supported a group of 5 students to conduct research with a 40-foot diameter radio telescope.

Upward Bound Program, Academic Tutor

2023-2024

Tutored high school seniors in math and science. Mentored students by providing college planning resources.

Rosa A. Garcia Lung Cancer Association, Co-Founder/Volunteer

2019-2024

Manage Lung Cancer non-profit. Organize programs: annual fundraising walks; created website & manage content.

FIELD WORK PROJECTS

A Real-Time Web-Based Dashboard for Comprehensive Green Bank Telescope System Monitoring

Dashboard aims to unify access to various GBT data sources and software systems within a single interface. Utilizes Django, a Python web framework, HTML, HTMX, CSS, and some Javascript.

Terminal-Based Tic-Tac-Toe Game in Python

Utilize a global 3x3 grid, track game dynamics with variables, and employ modular functions for display. Player turns, and win-checks, including input validation for move legality and board position.

FOCUS Research: The James Webb Space Telescope & Origin of the Universe

Research/hypothesize different origin theories of the universe. Compare data from the James Webb Space Telescope and Hubble, under the guidance of Rachel Cooper, Science Support Analyst at Space Telescope Science Institute.

AWARDS

Dean's List (Spring 2024, Fall 2024, Spring 2025), The Senior Focus Fieldwork Award (2023), The Rensselaer Medal Award (2022), College Board's National Hispanic Recognition Program (2022)

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PROFESSIONAL AFFILIATIONS

Minoritized Genders across Physics at Harvey Mudd College

2023-Present

Society of Women Engineers at Harvey Mudd College

2023-Present

Latina Empowerment and Development at Harvey Mudd College

2023- Present