

Education

Carnegie Mellon University

BS Computational Physics

GPA: 3.47

Pittsburgh, PA

May 2026

Relevant Coursework

- Principles of Imperative Computation, Quantum Physics, Physical Mechanics I, Thermal Physics, Electronics I, Quantum Computation and Quantum information Theory, Advanced Computational Physics, Functional Programming, Introduction to Solid State Physics, Modern Physics Laboratory

Research Experience

Undergraduate Researcher

Fall 2023 - Summer 2024

Dr. Stephanie Tristram-Nagle Group, Department of Physics, Carnegie Mellon University

- Studied the effectiveness of different Antimicrobial Peptides (AMP) against bacterial membranes
- Used circular dichroism (CD) to determine the secondary structure of these peptides
- Went to Cornell University where I recorded x-ray data of the AMPs on their synchrotron

Undergraduate Researcher

Fall 2024 - Spring 2026

Dr. Michael Widom Group, Department of Physics, Carnegie Mellon University

- Created a website that allows someone to search different alloy systems and then display a phase diagram of that alloy system
- Attended a weekly meeting where each member would present the work that they had completed that week

SenSIP REU Site, Arizona State University

Summer 2025

- Did research in how quantum computing and quantum circuits could help improve the speed and PSNR in 3D reconstruction particularly 3D Gaussian Splatting
- Presented every week on my weekly progress and presented both a poster and a elevator pitch at the ASU SenSIP industry meeting

Relevant Work Experience

TA for Physics I for Science Students

Fall 2023 - Fall 2025

- Twice a week lead course office hours where I answered any homework or general conceptual questions that the students might have
- Attended weekly meeting where we would review the lesson plan for the week and anticipate any difficulties the students might have
- Grade weekly homework assignments

TA for Fundamentals of Programming and Computer Science

Winter 2025 - Spring 2025

- Lead recitation on concepts like strings, lists, recursion and complexity analysis taught in lecture that week, helping students to reinforce the material
- Host weekly office hours and help students debug issues that they have when doing homework.
- Grade exams and quizzes

Club Experience

CMU Running Club Board

Spring 2023 - Spring 2025

- Helped plan and host weekly runs and coordinate marathon and half marathon training plan
- Kept track of club budget and made sure that club members were reimbursed for races and food

Vice President of Women and Gender Minorities in Physics

Fall 2025 - Spring 2026

- Helped plan social events for to strengthen community and bring students in the department together
- Helped educate about physics history and helped people apply for conferences

Publication

Mitra, S., Chen, M. T., Stedman, F., Hernandez, J., Kumble, G., Kang, X., ... & Tristram-Nagle, S. (2025). Cyclization of Two Antimicrobial Peptides Improves Their Activity. *ACS omega*, 10(9), 9728-9740.

Computer Skills: Python, C, HTML, CSS, Qiskit, OriginPro Levenberg-Marquardt least squares fitting