SOPHIE WANG

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EDUCATION

Massachusetts Institute of Technology Matriculation: Fall 2023
Candidate for B.S. in Mathematics and B.S. in Computer Science. GPA: 5.0/5.0.

Relevant Courses: Real Analysis, Multivariable Calculus, Differential Equations, Linear Algebra, Probability and Random Variables, Fundamentals of Programming, Intro to Algorithms, Intro to Machine Learning, Intro to Low-Level Programming.

HONORS

USA Biology Olympiad National Finalist, Top 20 out of 11,000+ competitors. 2022, 2023
Coca-Cola Scholar, Top 150 out of 91,000+ applicants. 2023
National Science Olympiad, 3rd place in Botany. 2022
National Science Bowl, Top 16 team. 2021, 2022

RESEARCH

National University of Singapore — Department of Computer Science, Biochemistry May 2024 - Present
Mentor: Yang Zhang, PhD

- Building a deep learning model using persistent homology and topological neural networks to predict antibody-antigen binding affinity.

Massachusetts Institute of Technology — Department of Biological Engineering Nov 2023 - Present
Mentor: Anders Hansen, PhD

- Developed a computational model for discrete-time stochastic reaction-diffusion by integrating fluorescence recovery after photobleaching and single particle tracking.

Colorado State University — Department of Biochemistry and Molecular Biology May 2021 - Dec 2022
Mentor: Timothy Stasevich, PhD

- Investigated transcriptional bursting phenomena induced by the translation inhibitor Harringtonine.
- Developed stable HeLa cell lines expressing mRNA and protein tags to model single-molecule dynamics of protein misfolding.

PROJECTS

Memoia — A web-based productivity tracker Jan 2024
Built within three weeks for MIT's web.lab (6.9620) course using React.js, NodeJS, WebSockets, and MongoDB. Designed website pixel art sprites using Adobe Illustrator. Finished 3rd place out of 400+ students and won the Render-sponsored Most Responsive UI Design prize.

Automanim — Math animation and lesson generator Feb 2024
Developed a website using the MERN stack in 36 hours at TreeHacks (Stanford Hackathon) to generate Manim animations (Python library for creating mathematical animations) and lessons. Used Backus-Naur Form grammar and few-shot learning for prompting.

ACTIVITIES

HackMIT, *DevOps and Marketing* March 2024 - Present
Designed graphics and frontend for HackMIT landing page. Used React.js for frontend and Flask for backend in our all-in-one registration, project submission, and judging platform, Plume.

Condor Software, *Tech Consultant* Jan 2024 - May 2024
Developed a Python script to automate extraction and consolidation of stock information from NASDAQ and NYSE exchanges. Used the yfinance library to fetch real-time stock data and pandas for data manipulation and CSV operations.

MIT Science Bowl, *Organizer* Aug 2023 - Present
Writer and outreach manager for MIT Science Bowl, a nationwide science bowl high school invitational tournament.

Jane Street INSIGHT, *Invitee* Aug 2024
Invited to an intensive 5-day quantitative trading program held by Jane Street.

Digital Art Aug 2016 - Present
Designs were chosen for the MIT Class of 2027 shirt and MIT Class of 2027 hoodie by entire class votes.