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Kevin Chang

kevin-chang.org
US Citizen

Education

University of California, Santa Barbara — Santa Barbara, CA
B.S. in Applied Mathematics — *August 2022 – August 2026*

Experience

Biological Control, Computing, and Learning Laboratory — Santa Barbara, CA
CS and Bioengineering Research — *August 2023 – Present*

- Spearheaded 2 complex research projects, demonstrating exceptional self-direction and achieving significant scientific milestones with minimal oversight
- Showcased a detailed research poster at the 8th Annual Winter Q-Biology Conference in Hawaii, engaging 200+ industry experts and securing feedback for further study enhancements
- Shared progress and findings at weekly lab meetings, fostering team cohesion and facilitating informed decision-making among 18 research peers
- Presented a poster at the ChemClub Undergraduate Research Expo, attracting over 400 attendees and sparking direct discussions with 30+ fellow researchers and faculty members

Emergency Room Volunteer — Goleta, CA
Cottage Health — *July 2023 – September 2023*

- Engaged with over 200 individuals from diverse age groups and cultural backgrounds fostering meaningful connections and rapport
- Implemented collaborative initiatives with the nursing staff, resulting in a 30% improvement in cleanliness and organization standards within the environment

Undergraduate Researcher — Santa Barbara, CA
Virology Research — *January 2023 – August 2023*

- Executed cell culture, gel electrophoresis, western blotting, and various advanced laboratory techniques with precision and expertise, contributing to the completion of over 50 experimental procedures
- Conducted an exhaustive literature review on the WDR5 gene's role in host-virus interactions, synthesizing insights from over 100 peer-reviewed articles

Projects

- **Sole Developer - Genetic Sequence Clustering with Unsupervised Algorithms for Geno-Pheno Mapping**:
  - Engineered a Jupyter Notebook/Python program for clustering genetic sequences using K-means and C-means algorithms; included data-preprocessing tools and validated sequence clusters against phenotype clusters through geno-pheno mapping
- **Project Lead - E. coli-Based Genetic Circuit Displaying Hysteresis**:
  - Designed and implemented a genetic circuit that is able to display hysteresis robustly. Extensively applied molecular techniques to actualize circuit design

Achievements

- **President's Volunteer Service Award**: over 1000 hours in volunteering in unpaid, nonpartisan volunteer service
- **Test Scores**: 5 on AP Biology & AP Calculus BC, SAT: 1550/1600 (Reading and Writing: 760, Math Score: 790)

Skills

Languages: Python, R, MATLAB, Markdown

Data Analysis: Jupyter Notebook, Pandas, NumPy, SciPy, Scikit-learn, K-means, DBSCAN, Unsupervised Learning

Molecular Biology Techniques: Standard and Colony PCR, Gel Electrophoresis and Extraction, Gibson Assembly, Transformation, Genetic Circuit Design, Immunofluorescence, Western Blotting, etc.

Tools: Git, Bash Scripting

Other: English (Native), Mandarin (Native), Japanese (Basic)