Daniel Chang

(661) 993-6882 | danielchang1@ucla.edu | Los Angeles

Education

University of California, Los Angeles (UCLA)   *September 2022 - Current*
Major: Computational and Systems Biology, Biological Data Sciences Track
GPA: 3.804

Experience

Eagle Scout, Santa Clarita

Chaplain's Aide, Troop Guide, Scribe   *January 2016 - January 2022*
- Mentored new scouts in the completion of rank advancement tasks, utilizing a proactive and constructive approach to support their growth and development.
- Attended and participated in various merit badge classes covering diverse outdoor and life skills, gaining proficiency in a range of subject areas and demonstrating a commitment to continuous learning.
- Conceptualized, planned, and executed a wood restoration project for an outdoor resting structure outside my church, exhibiting advanced project management skills and technical expertise in construction and refurbishment.

Seoul Broadcasting System (SBS), Los Angeles

Internship, Media Production Assistant   *October 2020 - May 2022*
- Facilitated the information dissemination process on the news channel by transferring reporter lines onto the teleprompter system for seamless on-air delivery.
- Ensured optimal recording quality of anchor scenes by meticulously timing slide displays and skillfully cutting and recording each segment.
- Provided operational support for news segment recordings by expertly setting up cameras, configuring lighting equipment, and directing the teleprompter system for the news anchor's delivery.

Projects

Personal Website
- Created a website to better understand front end development in React.js using HTML/CSS and Javascript (https://daniel-website-9oar6yuzg-dauniel.vercel.app/)

Biological Simulation of Infection Disease Transmission (SIR Model)
- Python project using CoCalc software to simulate infectious disease spread using the SIR model. Implemented the SIR model using scipy.integrate.odeint and calculated equilibrium points and the Jacobian matrix for stability analysis. Project showcases proficiency in Python, differential equations, numerical methods, and data analysis for real-world problems in epidemiology.

DNA Transcription and Translation Program using Codon Mapping
- C++ program that transcribes a DNA strand into mRNA and maps each codon to its respective amino acid using a predefined map. The program also verifies the validity of the input strand and allows the user to select the direction of transcription. The program outputs the resulting mRNA sequence and corresponding amino acid sequence.

High-Capacity User/Movie Database
- C++ program that efficiently manages and retrieves data with hundreds of thousands of movies and users using advanced data structures and algorithms. It uses a self-balancing binary search tree to maintain a sorted collection of movies and users with their respective data (email, actors, genres, rating, year, etc.) and employs a hash table to map information from users to movies and vice versa. Implements lambda functions, enabling streamlined and efficient data manipulation and filtering to create a point recommendation system.

Pocket Studio (Creative Labs at UCLA)
- IOS app made in Swift showcasing an infinite zoom mechanism, guiding users through layered illustrations while conveying a narrative. Collaborated closely with a multidisciplinary team, including illustrators, copywriters, and UI/UX designers to deliver a seamless and engaging user experience

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Skills

Languages
- Proficient in C++ and Python
- Basic in Javascript, HTML/CSS, and Java

Tools
- Git, Pandas, Matplotlib, CoCalcvi, Vercel, Selenium