MATTHEW T. SIT

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EDUCATION

UNIVERSITY OF CALIFORNIA - BERKELEY **Berkeley, CA**

B.S. Bioengineering, B.S. Electrical Engineering & Computer Sciences (GPA: 3.734) *Anticipated December 2019*

- **COMPLETED COURSEWORK:** Organic Chemistry (Chem3A/3AL), Biophysical Chemistry (ChemC130), Structure and Interpretation of Programs (CS61A), Data Structures (CS61BL), Computer Architecture (CS61C), Discrete Mathematics and Probability Theory (CS70), Multivariable Calculus (Math53), Linear Algebra/Differential Equations (Math54), Biological Transport Phenomena (BioE104), Thermodynamics/Electricity/Magnetism (Phys7B), Bioethics (BioE100), Web Design (CS198).
- **CURRENT COURSEWORK:** Teaching Techniques for Computer Science (CS375).

RESEARCH & WORK EXPERIENCE

DR. SUSANA CHUNG'S LAB – UC BERKELEY SCHOOL OF OPTOMETRY **Berkeley, CA**

Apprentice *January 2017 – Present*

- Developed core strip analysis Matlab algorithm to extract retinal traces from videos using cross-correlation and interpolation.

DR. PAMELA J. YEH'S LAB – UNIVERSITY OF CALIFORNIA, LOS ANGELES **Los Angeles, CA**

Apprentice *June 2014 – August 2014, June 2015 – July 2015*

- Eliminated manual calculation errors by creating an Excel template that calculates volume to add for each step of serial dilution.
- Brought to attention the need to explore the impact of the plate reading machine's variation in precision on results.
- Found concentration ranges that provoke bacterial mutation to slow evolution of drug resistance in Streptomycin and Cefoxitin.
- Determined triple drug combination interaction types by comparing bacterial growth to those of single and pairwise combinations.

EECS DEPARTMENT – UC BERKELEY **Berkeley, CA**

Undergraduate Student Instructor (Data Structures, CS61B) *June 2016 – Present*

- Polished teaching methodology of each specific course concept and customized its delivery for a section of 35-45 students.
- Catalyzed students' problem-solving intuitions in one-on-one interactions by inventing analogies and explicating strategies.
- Over 220 hours of experience teaching Java and Python.

PUBLICATIONS

1. N Singh, **MT Sit**, MK Schutte, GE Chan, JE Aldana, D Cervantes, CH Himmelstein, & PJ Yeh. "Differential Rate of Use of the Word "Evolve" Across Fields" *PeerJ* ***(Accepted).***
2. N Singh, **MT Sit**, DM Chung, AA Lopez, R Weerackoon, & PJ Yeh. "How Often Are Antibiotic-Resistant Bacteria Said to "Evolve" in the News?" *PLoS One*, 11(3): e0150396. doi:10.1371/journal.pone.0150396 **(2016).**

VOLUNTEER & LEADERSHIP EXPERIENCE

BERKELEY ENGINEERS AND MENTORS (BEAM) **Berkeley, CA**

Director of Curriculum *February 2016 – Present*

- Pioneered the organization's first Chromebook lesson, guiding 300 students to control pianos of bananas using Snap and Arduino.
- Designed 10-week course, leading 9 in producing an interactive curriculum that equips our mentors to best inspire students.
- Reinvented organization website using HTML, CSS, and JavaScript to improve UI/UX and ease maintenance.
- Implemented classroom management strategies and ideas from education research to promote STEM in local elementary schools.

HONORS

- **ETA KAPPA NU (HKN), UC BERKELEY** (Electrical and Computer Engineering Honor Society) *February 2017*
- **BIOENGINEERING HONOR SOCIETY, UC BERKELEY** *September 2016*

TECHNICAL SKILLS

- **COMPUTATION:** Python (Strong), Java (Strong), Matlab (Strong), JavaScript (Proficient), SQL (Proficient), C (Proficient), Scheme (Familiar), MIPS (Familiar), Git (Strong), HTML (Strong), CSS (Strong), jQuery (Proficient), Microsoft Office (Strong), LaTeX (Strong), Photoshop (Proficient), Illustrator (Familiar).
- **LABORATORY:** Gel Electrophoresis (Familiar), Titration (Familiar), PCR (Familiar), Inoculation (Proficient), Serial Dilution (Strong), Centrifuge (Strong), Data Analysis (Strong), Micropipette (Strong), Endpoint Optical Density Analysis (Proficient), TLC (Strong), Melting Point (Strong), Recrystallization (Strong).
- **LANGUAGE:** Spanish (Familiar), Mandarin (Familiar), Cantonese (Familiar).
- **ADDITIONAL INTERESTS:** Trumpet, Singing, Graphic Design/UI/UX, Cooking/Baking.