

MATTHEW T. SIT

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EDUCATION

UNIVERSITY OF CALIFORNIA - BERKELEY

Berkeley, CA

B.S. Electrical Engineering & Computer Sciences, B.S. Bioengineering (GPA: --redacted--)

Anticipated December 2019

- **COMPLETED COURSEWORK:** 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), Organic Chemistry (Chem3A/3AL), Biophysical Chemistry (ChemC130), Biological Transport (BioE104), Thermodynamics/Electricity/Magnetism (Phys7B), Bioethics (BioE100), Web Design (CS198).
- **CURRENT COURSEWORK:** Machine Learning (CS189), Genetic Design Automation (BioE134), Data/Statistics (Stat133).

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 300 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. "A Systematic Review of Differential Rate of Use of the Word "Evolve" Across Fields." *PeerJ*, 5:e3639; DOI 10.7717/peerj.3639 (**2017**).
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 & AWARDS

- **ETA KAPPA NU (HKN), UC BERKELEY** (Electrical and Computer Engineering Honor Society)
- **BIOENGINEERING HONOR SOCIETY, UC BERKELEY**
- **LEADERSHIP AWARD, CAL ALUMNI ASSOCIATION, UC BERKELEY**

February 2017

September 2016

August 2017

TECHNICAL SKILLS

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