

Mark (Zhiyuan)Yang

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EDUCATION

University of California Berkeley, College of Letters and Science, Berkeley, CA

Dual degree: Bachelor of Science, Integrative Human Biology
Bachelor of Arts, Music

Expected May 2023
Cum. GPA 3.73

- GPA: 3.73 / 4.0
- DAT Score: Academic Average 23
 - Biology 18, General Chemistry 22, Organic Chemistry 20, Perceptual Ability 21, Quantitative Reasoning 30, Reading Comprehension 23.

San Domenico School, San Anselmo, California

August 2015 - May 2019

- GPA: 4.133 / 4.0 (Weighted)
- SAT: 1480 / 1600; TOEFL: 110
- Honors: Honor Roll (Grade 9 – 12), Bay Area Badminton League 3rd Place, MTAC State Honor in Advanced Level Piano Performance and Theory

CERTIFICATIONS

- X-Ray California Radiation Health & Safety License
- Dental Board Dental Practice Act Certificate
- Infection Control Certificate
- CPR Certificate.

SKILLS

- Sterilization techniques, tooth charting, patient relations, familiarity with dental instruments & materials, and appointment management.
- ELISA, light, electron, and correlative microscopy, molecular cloning, spectrophotometry, HPLC, TLC, experimental design and validation, Fiji Imagej, OpenSim, QuPath, AVIZO, and histology preparation.

ACADEMIC ENRICHMENT

University of California, Berkeley

Intern and Lab Assistant at Jepson Herbarium

Berkeley, CA

Feb 2020 – May 2020

- Worked on the Pteridophyte Collections Consortium and the Endless Forms Thematic Collections Network Projects with tasks related to specimen selection, imaging, data digitization, and refining, under the instruction of Professor Carl Rothefels.

University of California, Berkeley

Music Major Honors Thesis

Berkeley, CA

May 2022 – January 2023

- The research examines the causes of noise-induced hearing loss and dental anxiety in the dental clinic.
- Includes a literature review, a study of the physiological effects of different genres of music, an economic analysis of soundproofing and noise concerns in dental clinics, and a historical view of sound in clinical settings.
- Suggests solutions relevant to social, political, and educational policy, as well as a more systemic approach to music therapy as a potential solution to dental anxiety related to sound and other factors.

University of California, Berkeley

Integrative Biology Major Honors Thesis

Berkeley, CA

May 2022 – Present

- This study aims to analyze physical and chemical changes in the temporomandibular joint complex for patients with TMD requiring surgical treatment.
- Using histologic analysis, combined CT and MRI scans, and digital reconstruction, I aim to assess disease level and treatment effectiveness.
- Clinical specimens are analyzed for extracellular and cellular morphology, sulfated glycosaminoglycans, collagen, and elastic fibers. The study pre-analyzes CT and MRI data in a 3D slicer and using Avizo software, measures and compares sections before and after treatments.

RESEARCH EXPERIENCE

University of California, San Francisco, CA*Intern at Sunita Ho Lab***San Francisco, CA**

January 2022 – Present

- Analyze the rotational mechanism of the periodontal ligament and structure of odontoblast through root histology with TRAP stain and PSR stain using a polarized microscope, and quantitatively assess collagen fiber orientation using birefringence measurements.
- Anatomically dissect and harvest the mandible and maxilla of experimental rats after soft food and hard food dietary adjustments.
- Study tissue adaptations of the temporomandibular joint complex with CT and MRI analysis as a result of temporomandibular joint disorder or orthodontic treatments.

University of California, Berkeley, CA*Research Intern with Dr. Waqas Khalid***Berkeley, CA**

Sept 2021 – Dec 2022

- Studied nanostructure-based devices that monitor human health status.
- Researched detection of Covid-19 biomarkers like CRP and PCT with carbon nanotubes.
- Investigated CNT, FMO functionalization, deprotection, and quantization associated with carbon nanotubes.
- Created models to generate dielectric data with a combination of oxidized metal layers during energy storage with carbon nanotube.

University of California, Santa Cruz, CA*Research Intern with DMA Candidate Jinwei Sun***Santa Cruz, CA**

September 2019 – Present

- Studied traditional musical elements in Chinese Opera, with an emphasis on Peking Opera (Jingju).
- Researched the opera character "Tsing Yi" and its associated opera singer Mei Lanfang in modern Chinese theater. The study covers techniques and sound properties necessary for opera performance and its historical background from the Qing Dynasty.
- Created an electronic music composition based on the sound characteristics of "Tsing Yi".

CLINICAL EXPERIENCE

Asian Health Services*Intern and Volunteer***Oakland, CA**

April 2021 – Present

- Assist clinic manager with patient scheduling, and act as translator for Mandarin-speaking patients.
- Shadow restoration placement, crown preparation, extraction and denture delivery, local anesthesia.
- Shadow endodontist, oral surgeon, and pediatric dentist.
- Expose and process dental X-Rays, maintain patient records and lab equipment, and sterilize instruments.

Estes Orthodontics (Dr. Laurie Estes DDS, MSD, and Dr. Kenneth Brehnan, DMD, MS)*Intern and Volunteer***Albany, CA**

Sept 2021 – Sept 2022

- Volunteered in setting up rooms, cleaning instruments, and translating for Mandarin-speaking patients
- Assisted doctor with X-ray exams and brace application.
- Conducted a case study on External Apical Root Resorption and its association with biomechanics.

North Eastern Medical Services, Dental Department*Shadow***San Francisco, CA**

July 2021 – January 2022

- Shadowed general dentist during restoration placement, crown preparation, extraction, and denture delivery.
- Shadowed endodontist, oral surgeon, and pediatric dentist.

Michael Dab, DDS, General and Cosmetic Dentistry*Shadow***San Rafael, CA**

July 2021 – May 2022

- Shadowed general dentist during restoration placement, crown preparation, extraction, and denture delivery.

WORK EXPERIENCE

Swift Assist*Cofounder, Swift Assist Consulting Company***Fremont, CA**

July 2020 – Present

- Design dedicated corporate performance management software for small and mid-sized companies.
- Design dedicated automatic scheduling systems for dental clinics, combining social media, patient communication, and scheduling systems.

Associated Board of the Royal Schools of Music & Music Teachers Association of California*Piano Teacher***Fremont, CA**

January 2019 – Present

- Provided keyboard theory and piano practical skills toward ABRSM and Certificate of Merit.

LEADERSHIP EXPERIENCE

The University of California, Berkeley*Lavender Alliance at Berkeley, Professional Development Chair***Berkeley, CA**

January 2021 - April 2022

- Promoted equality for Asian LGBTQ communities through speaker panels, outreach events, and career fairs.
- Organized Diversity, Equity, Inclusion Summit advocating for LGBTQ rights in the workplace.
- Created a website for Lavender Alliance at Berkeley and archived publicity events.
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Bioengineering High School Competition at Berkeley

January 2021 - Present

- Guided and mentored high school students throughout the process of developing a research paper and presentation on Artificial Pancreatic Transplantation (2021) and Spinal Cord Stimulator Surgery (2022).

Treasury representative of Berkeley Chinese Students and Scholars Union

August 2019 – June 2021

- Approve and manage the funding of all departments in the student union for campus events & clubs.

VOLUNTEER EXPERIENCE

Volunteer at Autumn Glow Alzheimer's Care Home

Instructor of Connect In Place (Taught class about the Science of Music)

Lucent Dental Oral Hygiene Ambassador

Technology Specialist for Ignite Music Society

ADDITIONAL INFORMATION

- **LANGUAGES:** English (fluent), Chinese (native)
- **TECHNICAL TRAINING:** R Language, Python, Fundamental Laboratory Techniques, Research design and analysis, Equipment calibration and use, Specimen collection and testing, Lab Operation, and Lab Procedure Preparation.
- **INTERESTS:** Avid foodie, Badminton varsity team player, Spartan Race, marathon participant, sophisticated computer hardware assembly and repair skills, LEGO enthusiast. Piano, Bass, and Flute musician. Rich background knowledge in ancient Chinese history and philosophy.