Raymond Su

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EDUCATION

University of California, Berkeley **08/2022 – 05/2026**
BA in Molecular & Cell Biology, BA in Cognitive Science

- **GPA: 3.85**
- **Courses:** *Cognitive Neuroscience, Neurobiology, Biochemistry, Linguistics, Social Psychology, Organic Chemistry, User Interface Design, Computational Modeling*

EMPLOYMENT & INTERNSHIP

Part-time Lab Technician, Proteomics, PTM Bio **01/2025 – 05/2025**

- Operate Thermo Orbitrap Astral LC-MS/MS, delivering high-resolution DIA data sets that identify and quantify 6 k+ proteins per client project.
- Perform routine calibration, column replacement, and fault-diagnosis to keep instruments running at >98 % uptime and within QC specs.
- Prepare samples end-to-end—protein extraction, S-Trap digestion, peptide cleanup, PRTC spike-ins—and fine-tune LC gradients to boost peptide coverage and reproducibility.
- Execute first-pass data QC (PCA, RSD, intensity-distribution checks) and package validated RAW files for bioinformatics, cutting report turnaround time by 20 %.

Junior UI/UX Designer, FlowGPT 0**5/2024 - 08/2024**

- Played a key role in the interface design and development of Emochi, a mobile app offering customizable AI interactions inspired by anime and gaming cultures.
- Designed intuitive user interfaces and streamlined navigation flows to optimize user engagement and accessibility.
- Collaborated closely with cross-functional teams to align design concepts with technical requirements and ensure feasibility.
- Leveraged tools such as Figma and React, contributing to front-end development for seamless implementation of design features.

RESEARCH EXPERIENCE

Research Intern, Dr. Hosung Kim's Lab, USC **05/2025 – Current**

- Build robust EEG feature pipelines and cohort QC (artifact rejection, channel selection, missing-stage handling) in Python (MNE-Python, NumPy/Pandas, SciPy, scikit-learn).
- Analyze sleep 6 channel EEG from REM Sleep Behavior Disorder (RBD) patients and healthy controls (HC); compute stage- and quartile-wise absolute/relative spectral power and relate features to Brain Age Index (BAI).
- Investigate electrophysiological subtypes of RBD by profiling spectral-power and BAI relationships; develop ML models to assign patients to putative subtypes.
- **Complementary project:** end-to-end deep-learning pipeline for brain-age prediction from raw two-channel EEG; implement preprocessing (filtering, artifact rejection, windowing) and benchmark ConvNeXt, hybrid CNN-Transformer, Swin Transformer, and CoAtNet in TensorFlow.

Researcher Human-Machine Interface (HMI) Review Paper **01/2025 – Current**
Guided by Brian Wang

- Conducted comprehensive literature reviews on Brain-Machine Interfaces (BMI), with a focus on neural recording technologies, signal processing methodologies, and material innovations.

- Evaluated critical design parameters, including signal fidelity, biocompatibility, and electrode material properties, to assess and optimize interface performance.
- Investigated advancements in neural interface technologies such as EEG, ECoG, LFP, and fiber-based systems to enhance neural modulation and signal acquisition.
- Synthesized research findings into a well-structured review manuscript, contributing to advancements in neuroscience and biomedical engineering applications.

COURSEWORK PROJECTS

Project Lead, Mindful Movies **07/2024 – Present**

- Designed and developed an AI-powered app to provide phobia-sensitive content filtering for movie viewers, ensuring personalized and anxiety-free entertainment.
- insights from **behavioral psychology** to understand user pain points, such as unintended trigger exposure and the cognitive load caused by phobia-related anxiety, and translated findings into effective app features.

SKILLS, ACTIVITIES & INTERESTS

Biological Techniques: PCR, Gel electrophoresis, Western Blotting, Patch-Clamp Electrophysiology
Computational Tools: Python, MATLAB, HTML, CSS, JavaScript, React, TensorFlow/Keras, scikit-learn, MNE, NumPy, pandas, SciPy, Matplotlib, Seaborn
Design Tool: Figma, Sketch, Framer, Arduino, Photoshop, Illustrator
Language: English (oral and written), Mandarin (oral and written), Japanese(elementary)