

Yuta Miami

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EDUCATION

University of California, Los Angeles

June 2027

Physics B.A. & Bioengineering B.S. | GPA: **3.94/4.00**

- **Relevant Coursework:** Computer Science, Machine Learning, Transducers, Biomolecular Material Science, Bioengineering Mass Transport (Pharmacokinetics, Fluids, Diffusion-Reaction, Trafficking), Thermodynamics, Quantum Mechanics

SKILLS

Technical Skills: Python, C++, MATLAB, Julia, Simulations, Machine Learning, Data Analysis, Signal Processing, Deep Learning

PROFESSIONAL EXPERIENCE

Shenshen Wang Theoretical Research Group

Los Angeles, CA

Undergraduate Researcher

May 2025 - Present

- Independently designed a model of plasmid HGT on NK landscapes to quantify how epistasis drives persistence.
- Built a Python simulation pipeline and achieved **50x** speedup via Numba JIT, enabling large-scale parameter sweeps.
- Complemented stochastic simulations with analytical derivations to cross-validate results and identify closed-form regimes.
- Translated findings into visualizations and presentations, partnering with wet-lab collaborators to test predictions.

Gerard Wong Laboratory

Los Angeles, CA

Undergraduate Researcher

May 2025 - Present

- Built a deep learning pipeline to classify **10,000+** bacterial data images with high throughput and accuracy.
- Designed a streamlined interface for manual data labeling, enabling **600+** images/hour for training data generation.
- Tuned model architectures and experimented with image processing methods, achieving a **43%** improvement in accuracy.
- Designed and automated a data analysis and visualization pipeline for peptide fragments using Notebooks and Bash scripts.

UCLA Optofluidics Systems Laboratory

Los Angeles, CA

Undergraduate Researcher

Nov 2024 - June 2025

- Prototyped graphite-PDMS acoustofluidic chips for single-cell manipulation, allowing for efficient iteration of designs.
- Applied laser microfabrication and automation to produce **60+** microscopic air cavities per minute in graphite chips.
- Applied a complex fabrication process, including degassing, thermal bonding, and laser manufacturing.

Fred Hutch Cancer Center

Seattle, WA

Computational Research Intern

Jun 2024 - Sep 2024

- Developed a computational pipeline to design and evaluate **1300+** protein linkers, integrating AlphaFold and RoseTTAFold.
- Partnered with a startup to apply my pipeline for a novel TCR- β drug delivery system to increase delivery efficiency by **23%**.
- Organized and presented findings to collaborators, including Nobel laureate Dr. David Baker (Institute for Protein Design).

INDEPENDENT PROJECTS

- **TruBalance Stand:** Designed a rigid-curve tablet stand that remains in resting equilibrium across a **90°** viewing angle range.
- **Epilepsy Detector:** Created a signal processing and SVM pipeline to predict seizures based on EEG data with **96%** accuracy.

LEADERSHIP & CLUB EXPERIENCE

CruX UCLA

Los Angeles, CA

Educational Vice President

Mar 2026 - Present

- Design a signal processing, machine learning, and neuroscience curriculum for new members as an introduction to BCI.
- Formulate a detailed project plan and provide continuous guidance for next year's neuroengineering competition team.
- Manage and guide a team of 4 technical coordinators in developing and presenting **20+** workshops and technical events.

Neuroengineering Competition Team Engineer

Oct 2025 - Apr 2026

- Designed an SSVEP+EMG neuro-piano for real-time playing, iterating prototypes to achieve **96%** classification accuracy.
- Designed a full-stack pipeline including live signal processing, ML classification, and an intuitive GUI.
- Won **first** place at the California Neurotechnology Conference against other schools, including Berkeley, USC, and UCSD.

Technical Coordinator

Mar 2025 - Mar 2026

- Revamped **20+** technical workshops for new CruX members, increasing new member retention by **60%**.
- Advised existing BCI teams and onboarded new teams across software, signal processing, and project workflow.

Samueli School of Engineering

Los Angeles, CA

Engineering Ambassador

May 2025 - Present

- Lead **5+ tours/quarter** and present engineering programs to prospective students, providing insights and live Q&A.
- Support admissions and recruiting events as a representative of the engineering student body.