

STELLINA AO

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EDUCATION

M.S. in Bioengineering, University of California, Los Angeles Sep 2024 – Jun 2026
GPA: 4.0 | Advisor: Dr. Anne Churchland

B.S. in Computer Science (*Honors*), California State University, Los Angeles Aug 2020 – May 2024
GPA: 4.0 | Advisors: Dr. Deborah Won, Dr. Yixian Wang, Dr. Jie Zhong | Minors: Biomedical Engineering, Mathematics
Honors Thesis: Reading Minds, Restoring Mobility: Exploring the Efficacy of Beta Regression and Fractal Dimension in Decoding Imagined Grip Force Levels ([link](#))

EXPERIENCE

Graduate Researcher @ Churchland Lab Jun 2025 – Current

- Study neural substrate for changes in decision-making strategies through normative aging, from model-based to model-free
- Model neural activity with latent variable models to probe neural correlates of decision-making strategies
- Use pose-estimation techniques to quantify behavioral changes with different decision-making strategies

Skills: Circuit modeling, latent variable models, PyTorch, Bash, Python

Graduate Researcher @ Mehta Lab Sep 2024 – Jun 2025

- Study neural utility of hippocampal barcodes in encoding visual spatiotemporal information, using Python and the AllenSDK to analyze spike trains recorded with Neuropixels from rats passively viewing movies

Skills: Neurobehavioral data analysis, machine learning

Trainee @ Stanford Behavioral Pharmacology Workshop Jun 2024

- Learned to design and conduct behavioral pharmacology studies through hands-on experiments and theoretical lectures at the Stanford Behavioral and Functional Neuroscience Lab
- Selected as one of ten participants from 80+ applicants

Skills: Behavior (Morris water maze, fear conditioning, open field)

Research Assistant @ NETLab, Brain-Computer Interface Group Jan 2022 – May 2024

- Led study on neural encodings of motor intent to develop more efficient software for brain-computer interfaces
- Developed a novel algorithm using beta regression and fractal dimension to decode imagined grip force levels
- Mentored five students on experimental design, EEG acquisition, and machine learning algorithm development

Skills: Surface electroencephalography, machine learning, signal processing, Python, Jupyter, MATLAB

Data Processing Team Lead @ Wang Research Lab, NSF CREST-CATSUS Fellowship Mar 2022 – May 2024

- Led a team of four in creating a template-matching algorithm with normalized cross-correlation to evaluate interactions between nanoparticles and neuroblastoma, achieving a 10x quicker runtime & decrease from $O(n^3)$ to $O(n^2)$
- Developed novel derivative-based pipette contact detection technique to demonstrate the effect of colorimetric modules on plasmonic electrochemical microscopy

Skills: Signal processing, image processing, optimization,, MATLAB, ImageJ

MANUSCRIPTS

[1] Chan K., Batista N., Diego-Perez K., Kala M., Cazares J., Belleca S., **Ao S.**, Dhoj C., Dai Z., Ho S., Fujii G., Porter E., Wang Y. (2025). Accessing real-time interaction between antimicrobial liposomes and live *Staphylococcus epidermidis* using surface plasmon resonance microscopy. *Submitted*.

[2] Garcia A., Dhoj C., Groysman S., Wang K., **Ao S.**, Anguiano A., Tran T., Jiang D., Wang Y. (2024). Prussian blue nanofilm-sensitized plasmonic electrochemical microscopy for spatially resolved detection of the localized delivery of hydrogen peroxide. *Sensors and Actuators Reports*.

SKILLS

Technical: Python, Bash, MATLAB

Languages: English (native), Chinese (native), Korean (advanced), Spanish (intermediate), Japanese (beginner)

COURSEWORK

ECE 243: Neural Signal Processing	@ UCLA	A+	Sep 2025 - Dec 2025
NEURO 220: Neurobiology of Learning and Memory	@ UCLA	A+	Mar 2025 - Jun 2025
NEURO 201: Cellular and Developmental Neuroscience	@ UCLA	A+	Mar 2025 - Jun 2025
NEURO 203: Neuroanatomy	@ UCLA	A+	Jan 2025 - Mar 2025
NEURO 205: Systems Neuroscience	@ UCLA	A+	Jan 2025 - Mar 2025
NEURO 202: Cellular Neurophysiology	@ UCLA	A+	Sep 2024 - Dec 2024
BE 275: Machine Learning in Bioengineering	@ UCLA	A+	Sep 2024 - Dec 2024

TEACHING

BE 175: Machine Learning in Bioengineering (<i>TA</i>)	@ UCLA	Mar 2025 - Jun 2026
BE 177A: Bioengineering Capstone I (<i>TA</i>)	@ UCLA	Sep 2025 - Dec 2025
BE 175: Machine Learning in Bioengineering (<i>TA</i>)	@ UCLA	Mar 2025 - Jun 2025

PRESENTATIONS (*selected*)

[1] <i>UCLA Research in Progress Series</i>	Mar 2026
“Corticostriatal circuit computations underlying decision-making across the lifespan.”	
[2] <i>UCLA Neurotheory</i>	Feb 2026
“Less is more: rank-constrained models for neural communication.”	
[3] <i>CSU Student Research Competition [CSULA Delegate]</i>	Apr 2024
“Reading minds, restoring mobility: beta regression to decode grip force intent using fractal dimension.”	
[4] <i>CSULA Student Symposium 2024 [Outstanding Oral Presentation]</i>	Mar 2024
“Reading minds: beta regression to decode grip force intent from neural activity using fractal dimension.”	
[5] <i>American Mathematical Society–Joint Mathematics Meetings [+ awarded JMM travel grant]</i>	Jan 2024
“A beta regression model decoding force intent from electroencephalography with fractal dimension.”	
[6] <i>CSU Biotechnology Symposium</i>	Jan 2023
“A computationally forward model of surface electroencephalograms encoding movement.”	

FELLOWSHIPS, AWARDS, & HONORS (*selected*)

Outstanding Undergraduate in Computer Science (<i>1 from graduating class of 200+</i>)	May 2024
Honors Convocation Speaker (<i>equivalent to commencement speaker</i>)	May 2024
NSF CREST-CATSUS Fellowship	Aug 2021 – Jul 2024
Aerojet Rocketdyne Scholarship (<i>1 of 3 from ~1,000</i>)	Jun 2023