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: Electrophysiological Data Analysis, Shared Gain Modeling, Latent Variable Models, BehaveNet, LightingPose, DeepLabCut, 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, AllenSDK

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), Scruffing and Dosing, GraphPad Prism

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, MATLAB, Python, Jupyter

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, Algorithm Development, 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, C/C++, Java, HTML, CSS, JavaScript, MySQL, LabVIEW, R, Excel VBA
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 177A: Bioengineering Capstone I (*TA*)	@ UCLA	Sep 2025 - Dec 2025
BE 175: Machine Learning in Bioengineering (*TA*)	@ UCLA	Mar 2025 - Jun 2025

FELLOWSHIPS, AWARDS, & HONORS (*selected*)

Outstanding Undergraduate in Computer Science (*1 from graduating class of 200+*)	May 2024
Honors Convocation Speaker (*equivalent to commencement speaker*)	May 2024
NSF CREST-CATSUS Fellowship	Aug 2021 – Jul 2024
Dean's List	Aug 2020 – May 2024
CSULA Student Symposium - Outstanding Oral Presentation, CSULA Delegate	Mar 2024
Aerojet Rocketdyne Scholarship (*1 of 3 from ~1,000*)	Jun 2023

PRESENTATIONS (*selected*)

CSU Student Research Competition **[CSULA Delegate]** Apr 2024
"Reading Minds, Restoring Mobility: Beta Regression to Decode Grip Force Intent Using Fractal Dimension"

CSULA Student Symposium 2024 **[Outstanding Oral Presentation]** Mar 2024
"Reading Minds: Beta Regression to Decode Grip Force Intent from Neural Activity Using Fractal Dimension"

American Mathematical Society–Joint Mathematics Meetings **[+ awarded JMM travel grant]** Jan 2024
"A Beta Regression Model Decoding Force Intent from Electroencephalography with Fractal Dimension"

CSU Biotechnology Symposium Jan 2023
"A System for a Computational Forward Model of Surface Electroencephalograms Encoding Movement"