Linfan Gu

Ph.D. Candidate
Bioengineering Graduate Program
University of California, Los Angeles

+1 (424) 325 9147
linfangu@ucla.edu
https://github.com/linfangu

EDUCATION

University of California, Los Angeles (UCLA)

Ph.D. Bioengineering; research focus: AI/ML modeling, computational neuroscience   Expected 2026

Dual degrees: University of Edinburgh, Zhejiang University

B.Sc.(Hons), Integrative Biomedical Sciences. Classification: First-Class Honors   June 2020

Hangzhou No.2 High School   June 2016

Third prize, Chinese National Mathematical Championship Academic Positions

ACADEMIC POSITIONS

Department of Bioengineering, Neurobiology, Biological Chemistry, UCLA

Graduate Researcher, Mentor: Weizhe Hong, Co-mentor: Jonathan Kao   2021 - Present

Thesis Committee: Weizhe Hong, Jonathan C. Kao, Dean Buonomano, Aaron Meyer

- Recorded population neural activity in mice, extracted neural population dynamics that predicted different behavioral states
- Developed a Multi-agent AI system that simulates biological movements and social interaction.
- Manipulated neural activity in mice and AI agents in real-time to drive behavior control.
- Collaborated with 4 experimental neuroscientists, designed computational and machine learning analyses tailored to each project

Cajal Advanced Neuroscience Training Programme (NeuroAI)

Scholarship awardee participant. Mentor: Srini Turaga, Leyla Isik, Fabian Sinz   2025

- Hands-on experience comparing AI models (vision transformers, CNN, large language models) and neural activity in the brain during visual/language tasks
- Completed and presented 2 computational projects: 1. brain supervised image classification; 2. low-dimensional neural representation of the fruit fly simulated embodiment through imitation learning

Zhejiang University

SRTP fellow, Undergraduate Researcher, Mentor: Ge Bai   2018 - 2020

- Analysed the role of non-canonical mRNA splicing in the pathogenesis of Charcot-Marie-Tooth Disease
- Identified a non-canonical copy of tRNA synthetase specifically expressed in the neuronal soma, which contributed to stress granules that cause neurodegeneration

University of Edinburgh

SRTP fellow, Undergraduate Researcher, Mentor: Gedi Luksys   2018 - 2019

- Investigating brain activity patterns associated with emotion and memory
- Created a Multi-voxel fMRI analysis pipeline that increased emotion decoder performance by 20%

PUBLICATIONS

(* equal contribution)

- Jiang M.*, **Gu L.***, Ma M., Li Q., Kao J., Hong W. (2025) Neural basis of cooperative behavior in biological and artificial intelligence systems. *Science*. DOI: 10.1126/science.adw8151

- <u>Raam T.*, Li Q.*</u>, **Gu L.***, Elagio G., Lim K.Y., Zhang X., Correa S.M., Hong W. (2025) Neural basis of collective social behavior during environmental challenge. Accepted *Nature Neuroscience*. BioRxiv Pre-print: https://doi.org/10.1101/2024.09.17.613378
- Liu H, Tang M, Yu H, Liu T, Cui Q, **Gu L**, Wu ZY, Sheng N, Yang XL, Zeng L, Bai G. (2023) CMT2D neuropathy is influenced by vitamin D-mediated environmental pathway. J Mol Cell Biol. doi: 10.1093/jmcb/mjad029
- Zheng J, Tian Y, Xu H, **Gu L**, Xu H. (2021) A Standardized Protocol for the Induction of Specific Social Fear in Mice. Neurosci Bull. doi:10.1007/s12264-021-00754-0.
- Xu J, Du YL, Xu JW, Hu XG, **Gu LF**, Li XM, Hu PH, Liao TL, Xia QQ, Sun Q, Shi L, Luo JH, Xia J, Wang Z, Xu J. (2019) Neuroligin 3 Regulates Dendritic Outgrowth by Modulating Akt/mTOR Signaling. Front Cell Neurosci. doi:10.3389/fncel.2019.00518.

AWARDS AND HONORS

Cajal Advanced Neuroscience Programme Neuro-AI Scholarship (4 awardees worldwide)	2025
Zhejiang University Outstanding Graduate Award (1% per year)	2020
Academic Scholarship, Zhejiang University-University of Edinburgh Institute (6 students per year)	2017-2019
First prize fellow, Student Research Training Programme, Zhejiang University	2018
Third prize, Chinese National Mathematical Championship	2015

TEACHING AND MENTORING EXPERIENCE

2024 - Present	Isabella Wu (Neuroscience undergraduate, UCLA)
2024	Sarah Darzacq (Computer Science undergraduate, UCLA)
Summer 2023	Laila Khorasani (Neuroscience Rotation Student, UCLA)
Spring 2023	Teaching Assistant, Bioengineering Laboratory BIOENGR167L
Winter 2022	Teaching Assistant, Neuroscience Laboratory NEURO101L
Summer 2021	Teaching Assistant, Computational Neuroscience Course, Neuromatch Academy

COMMUNITY SERVICE AND PUBLIC ENGAGEMENT

2025	Reviewer, COSYNE
2025	Event Coordinator, Pint of Science LA
	Coordinated science outreach events in public venues
2024 - 2025	Newsletter editor and content coordinator, Brain Research Institute, UCLA
	Strengthening community engagement and amplified diverse voices at UCLA
2017 - 2019	Head of Volunteer's Department, Zhejiang University International Campus
	Organized outreach events at local museums and libraries, and collaborated with local inclusive education programs to host a campus showcase.

SKILLS

Programming: MATLAB, Python, PyTorch, JAX
Modeling: Deep reinforcement learning, statistical machine learning, pose tracking, neural dynamics
Experiment: Electrophysiology (Neuropixels), in vivo Calcium imaging
Communication: team leadership, science communication with diverse audiences