

Jessica Zhou, Ph.D.

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EDUCATION

University of California, San Diego, *Ph.D., Bioinformatics and Systems Biology* 2023

University of Southern California, *B.S. Biomedical Engineering* 2017

SKILLS

Tools : PyTorch, Tensorflow, scikit-learn, git, AWS, LangChain, Apache Airflow, HPC (SGE, slurm), Databricks

Programming languages : Python, R, SQL, bash, MATLAB

EXPERIENCE

OLAB @ NYU Langone Health Feb. 2026 – Present

ML Engineer

- Developing edge ambient AI scribe app for partner clinic in Nigeria
- Building supervised fine-tuning pipeline for Lang1-1B medical foundation model
- Developed statistical continual learning method with capacity for federated merge and exact unlearning

Stripe

Jun. 2025 – Oct. 2025

Data Scientist

- Built unsupervised models to segment consumers for Link product marketing
- Trained autoencoder to generate meaningful representations of multimodal consumer feature data
- Deployed SQL pipelines with Apache Airflow to automate multi-step ETL workflows

Koo Lab, Cold Spring Harbor Laboratory

Oct. 2023 – Jun. 2025

Postdoctoral Researcher

- Developed a knowledge distillation framework for uncertainty quantification in deep neural networks (**presented at MLGenX @ ICLR 2025**)
- Applied explainable AI techniques to identify learned biological sequence patterns governing gene regulation from genomic sequence deep learning models
- Benchmarked SOTA genomics foundation model Evo2
- Built a RAG workflow to query a database of scientific talk transcripts

McVicker Lab, University of California, San Diego

Sep. 2017 – Jul. 2023

PhD Candidate

- Developed generalized linear models to measure DNA sequence activity from single-cell CRISPR perturbation data
- Applied unsupervised learning to characterize cellular populations in single-cell sequencing data
- Used genomic foundation models to validate biological hypotheses through counterfactual analysis
- Authored 2 first-author publications and accepted for 8 conference presentations

AWARDS

- NIH Ruth L. Kirschstein Predoctoral Individual National Research Service Award, 2022
- Fulbright Research Scholar, 2019

PUBLICATIONS

- Zhou, J. L. et al. (2026). Uncertainty-aware genomic deep learning with knowledge distillation. *npj Artificial Intelligence*.
- Sarkar, A. et al. (2025). Designing DNA with tunable regulatory activity using score-entropy discrete diffusion. *bioRxiv*.
- Zhou, J. L. et al. (2024). Analysis of single-cell CRISPR perturbations indicates that enhancers predominantly act multiplicatively. *Cell Genomics*.
- Zhou, J. L. et al. (2023). Single-nucleus genomics in outbred rats with divergent cocaine addiction-like behaviors reveals changes in amygdala GABAergic inhibition. *Nature Neuroscience*.
- Flores, A. et al. (2017). Lactate dehydrogenase activity drives hair follicle stem cell activation. *Nature Cell Biology*.