

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

- ML Engineer**, OLAB @ NYU Langone Health Feb. 2026 – current
- Developing on-edge ambient AI scribe for partner clinics in Nigeria
 - Building supervised fine-tuning pipeline for Lang1-1B medical foundation model
 - Benchmarking continual learning methods on SOTA vision model backbones
- Data Scientist**, *Stripe* Jun. 2025 – Oct. 2025
- 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
- Postdoctoral Researcher**, *Koo Lab, Cold Spring Harbor Laboratory* Oct. 2023 – Jun. 2025
- 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
- PhD Candidate**, *McVicker Lab, University of California, San Diego* Sep. 2017 – Jul. 2023
- 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

1. Zhou, J.L. et al. (2026). Uncertainty-aware genomic deep learning with knowledge distillation. *npj Artificial Intelligence*.
2. Sarkar, A. et al. (2025). Designing DNA with tunable regulatory activity using score-entropy discrete diffusion. Preprint at *bioRxiv*.
3. Zhou, J.L., et al. (2024). Analysis of single-cell CRISPR perturbations indicates that enhancers act multiplicatively and provides limited evidence for epistatic-like interactions. *Cell Genomics*.
4. Zhou, J.L., et al. (2023). Single-nucleus genomics in outbred rats with divergent cocaine addiction-like behaviors reveals changes in gene amygdala GABAergic inhibition. *Nature Neuroscience*.