

YANZI SUN

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EDUCATION

University of California, Los Angeles, Los Angeles, CA

Sep 2024- June 2026

Master of Data Science (M.S) Relevant coursework: Introduction to Data Science, Principles of biostatistics, Machine Learning

University of California, Santa Barbara, Goleta, CA

Sep 2019- Sep 2022

Bachelor of Science (B.S): Biological Sciences

SKILLS

Programming Language	Python (experienced), R (experienced), SAS (experienced), SQL (familiar), Unix (familiar)
Data	TensorFlow/Keras, Pytorch, statistical modeling, R Shiny, scikit-learn, HPC/slurm, AWS EC2, S3
Bioinformatics	single-cell RNA-seq analysis, Omics Analysis, Spatial Transcriptomics Analysis

RESEARCH EXPERIENCE

Bioinformatician

October 2024- present

[Roel Ophoff Lab](#), *UCLA Psychiatry and Human Genetics* / Los Angeles, CA

- **Project:** Meta-analysis of epigenetic aging in bipolar disorder
 - Performed large-scale bioinformatics analysis of genome-wide DNA methylation profiles from bipolar disorder cohorts, leveraging advanced DNA methylation clocks to dissect associations between epigenetic aging and clinical phenotypes, such as chronological age, sex, illness duration.
 - Utilized high-performance computing clusters (hoffman2) to execute parallelized preprocessing workflows, including quality control, normalization, and feature extraction of methylation data.
 - Developed and optimized statistical models in R using packages such as dnaMethyAge, minfi, limma, integrating machine learning techniques including regularized regression (Lasso, Ridge), random forests, and gradient boosting for robust interpretation of high-dimensional genomic and epigenomic datasets.

Research Assistant

June 2023-June 2024

[Chao Peng Lab](#), *UCLA Neurology* / Los Angeles, CA

- **Project:** Uncover XX vs. XY differences in AD and PD pathology using Four Core Genotypes (FCG) mouse model
 - Design and conduct experiments on tau and mouse α -Syn preformed fibrils (PFFs) preparation.
 - Stereotactic injection of Amyloid- β and α -syn PFF (pre-formed fibrils) in 5XFAD mice; mouse husbandry and colony management; in vivo miniscope calcium imaging; spatial memory behavioral testing.

Research Assistant

June 2022-April 2023

[Susan Mazer Lab](#), *UCSB EEMB* / Goleta, CA

- **Project:** Computational Analysis of Style Length Impact on Pollination Efficacy and Reproductive Fitness in *Nemophila menziesii*
 - Investigated the relationship between style length and pollination efficacy, testing its correlation with lifetime fecundity using linear regression, ANOVA, and mixed-effects models in R.
 - Digitized pollen, seed count, and flower size data; implemented interactive data visualization dashboards in R Shiny to analyze trichome-pollination interactions and reproductive outcomes.
 - Developed automated data preprocessing pipelines in R, integrating microscopy observations with computational models to identify phenotypic patterns.

Research Assistant

June 2022-April 2023

[Soojin Yi Lab](#), *UCSB EEMB* / Goleta, CA

- **Project:** Connecting Epigenome to Health in Marine Organisms
 - Conducted DNA methylation studies on marine organisms to develop DNA methylation clocks.
 - Processed DNA extracted from mussel and starfish tissues for Reduced Representation Bisulfite Sequencing (RRBS), optimizing bioinformatics pipelines for methylation data preprocessing, alignment, and differential analysis.
 - Developed Python-based computational tools for automated shell ring counting and established standardized workflows for 3D shell scanning and high-throughput DNA extraction.