

JIACHEN AI

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EDUCATION

University of California, Los Angeles, Fielding School of Public Health, USA Sept. 2023 – Jun. 2025
Major: Biostatistics (Master of Public Health) **GPA:** 4.00/4.00 (four quarters)

- Steve Wallace Policy Fellowship Jun. 2024
- APEX Funding at Department of Human Genetics May 2024
- Twice UCLA Fielding School of Public Health Dean's Leadership Grant Apr. 2024 & May 2023

Skills:

- Biostatistics Methods, Statistical Learning, Regression Analysis, Probability Theo and Statistics, Linear Algebra
- R, Python (NumPy, Pandas, Matplotlib), SAS, STATA, SQL, LaTeX
- Linux scripting, Git/GitHub
- Container technology: Docker
- Data wrangling (Tidyverse), Data visualization (ggplot2)
- Databases: OLAP (DuckDB), Google BigQuery
- Frontend development (shiny, web app)
- Cloud computing (GCP, AWS, Azure, OCI)
- High-performance computing (HPC) on cluster (Hoffman2)
- Deep learning with Keras + TensorFlow/PyTorch

Southwest University (SWU), School of Life Sciences, China Sept. 2018 – June 2022

Major: Biological Sciences (Bachelor of Science) **GPA:** 3.84/4.00 (2nd/65)

- Outstanding Graduate, Outstanding Intern, Outstanding Undergraduate Graduation Thesis June 2022
- International or Overseas Research Award Dec. 2021
- Twice Third-Class Scholarships for Academic Excellence Dec. 2021 & Dec. 2020
- Second-Class Scholarship for Academic Excellence, Merit Student Award Dec. 2019

Skills:

- Bioinformatics, Biochemistry, Cell Biology, Molecular Biology, Genetics, Microbiology, Physiology, Neurology
- PCR, qPCR, DNA/RNA extraction and quantification, CRISPR/Cas9, cloning, electrophoresis, next-generation sequencing library preparation
- RNA-seq, ChIP-seq, single-cell RNA-seq, Bisulfite sequencing, GWAS (Genome-Wide Association Studies)
- Western blotting, ELISA, mass spectrometry, protein-DNA interaction assays, chromatin immunoprecipitation (ChIP)
- Cell culture, transfection, microscopy (confocal, fluorescence), immunofluorescence, flow cytometry

RESEARCH

Clustering on Mice DNA Methylation Aging Pattern Los Angeles, USA
Graduate Student Researcher (supervised by Prof. Feng Gao) Sept. 2024 – Current

- K-means based unsupervised hierarchical clustering of methylation levels, investigating the characteristics of methylation profile in mice aging stages — young, midlife, and late-life.

Longitudinal Study on Flu Vaccination Impact: DNA Methylation Influence the Regulation of RIG-I Signaling Within UGA6 Cohort Los Angeles, USA

Volunteer Graduate Student Researcher (supervised by Prof. Matteo Pellegrini) Mar. 2024 – Current

- Multivariate linear regression with LOOCV to establish prediction models for associations between DNA methylation CpG sites and cellular signaling pathway with sero-protection after influenza injection at day0 and day28, with considering epigenetic confounders, including age, gender, BMI, and cell types.

Statistical Data Analysis for Biology and Biomedicine Research Chongqing, China
Undergraduate Research Assistant Jun. 2021 – Jan. 2023

- By multivariate regression in R and found significant correlation between rice yield and irrigation amount in 5 growing stages.
- Via R, performed logistic regression with backward selection and found 3 categorical variables that correlated with semen quality.
- Through deduction and proofs with Markov chains, multivariable calculus and matrices, discussed the recurrence and transience of random walks in three dimensions.

Lymphocyte Regeneration after Thymocyte Damage in Zebrafish Chongqing, China
Volunteer (supervised by Prof. Li Li) Oct. 2019 – June 2020

- Discovered that the Cxcl12b/Cxcr4b chemokine signaling pathway plays a key role in the repair of zebrafish T-lymphocytes by real-time PCR (RT-qPCR) and then demonstrated the finding using a receptor antagonist, WZ811.
- Detected apoptosis and a significant reduction of thymus lymphocytes through whole mount in situ hybridization (WISH) and confocal microscopy, in zebrafish treated with 2 mM Metronidazole for 12 hours in vivo.

PUBLICATION

- Ai, J. (2021) Lifestyle does affect semen quality: factor determination in a statistical way. *Lecture Notes in Medicine and Life Sciences*, 4, 163–171. <https://www.clausiuspress.com/conference/article/artId/7114.html>.

TEACHING

Graduate Teaching Assistant at UCLA	Los Angeles, USA
<i>MCD BIO 187AL: Research Immersion Laboratory in Genomic Biology</i>	June 2024 – July 2024
<ul style="list-style-type: none">Lead lab session and TA session to demonstrate the usage of bioinformatics tools, including NCBI Blast, InterProScan, JPRED4, PSIPRED, DeepTMHMM, WoLF PSORT, SignalP, AlphaFold3 server, ChimeraX	

EXPERIENCE

Computational Genomics Summer Institute (UCLA)	Los Angeles, USA
<i>Warren Alpert Computational Biology and AI Network Fellow</i>	July 2024 - Current
<ul style="list-style-type: none">Attended workshops in Biobanks, machine learning in biomedical research.Cooperating with Warren Alpert faculty in analysing epigenetics data.	
Higher Education in Public Health (UCLA)	Los Angeles, USA
<i>Panel Member</i>	Apr. 2024
<ul style="list-style-type: none">Presented the FSPH master's program of biostatistics for incoming undergraduate students and answered questions.	
SWU Life Science Administrative Office	Chongqing, China
<i>Office Assistant (6 semesters)</i>	Oct. 2018 – Jun. 2021
<ul style="list-style-type: none">Held 5 meetings per semester. Liaised between administrative teachers and the whole class (65 schoolmates), including giving feedback to inquiries from students.Provided guidance to approximately 40 freshmen regarding their academic performance, elective courses, clubs, research mentors, etc.	
SWU Central Library	Chongqing, China
<i>Volunteer (40 hours)</i>	Oct. 2019 – Jan. 2020
<ul style="list-style-type: none">Organized a charity evening for over 200 people sponsored by the SWU Library Volunteer Association, including being responsible for venue reservation and decoration.	
SWU Social Study	Chongqing, China
<i>Team Leader in a project—Ecological Civilization Construction in Jinyun Mountain</i>	Nov. 2019 – Dec. 2019
<ul style="list-style-type: none">Led a team of 5 whose influence reached the top 10/150 with over 1000 votes from strangers to do a field study, interviewed 3 pundits and gathered 226 effective questionnaires about ecosystem preservation and tourism development.	

INTERNSHIP

Western Biomedical Technology Inc.	Chongqing, China
<i>Intern, Immunization Team of IT Department</i>	Mar. 2021 – June 2021
<ul style="list-style-type: none">Applied Python and convolution method, developed a light-band recognition program, and improved the precision in western-blot by 20%.Devised a program of calculating standard concentration curves in ELISA utilizing R, increasing the calculation speed by 60%.Presentation every two weeks. Responsible for experiments and reports in Immunology, Histopathology, and Molecular Biology.Promoted the work efficiency of the whole team by virtue of liaising with customers and colleagues in different departments.	