Zheng Sirui

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EDUCATION

Shanghai Jiao Tong University **Fall 2026 (expected)**
Incoming M.S. Student in Biomedical Engineering Shanghai, China

Zhengzhou University **Sep 2022 - Jun 2026**
School of Life Science | **Bioinformatics** Zhengzhou, China

- **Cumulative GPA: 3.85/4.00 Ranking: 1/67 (top1%)**
- Relevant coursework: achieved **GPA 4.0 in all the theoretical courses about Chemistry, Physics and Math**

Proteomics 100, Biochemistry (I) 97, Biochemistry(II) 97, **Python 91, Principles of database 96, LINUX operating system 95, R language 94, Computational biology 95, Probability Theory and Mathematical Statistics 96,** College Physics B 95, Genetics 94, Immunology 94, Cell Biology 91, Molecular biology 91, Animal Biology 91, Botany 90, Inorganic chemistry and Chemical analysis 91, Calculus A (I) 92, Linear Algebra 91, Calculus A (II) 90

SUMMER COURSES

IBRO-CIBR-CLS-IDG Neuroscience Summer School **Aug 2024**
CIBR-CLS-IDG Beijing, China

- **Engaged in seminars with top experts in the field and won the** Second Prize in the Literature Presentation Competition

National University of Singapore "Chemistry in Life" Summer Course **Jul 2024**
DBS (Department of Biological Science), FoS Singapore

- Final mark: 87 A (Top 1 among students from Zhengzhou University with 12 points ahead of the second-place student)

RESEARCH EXPERIENCE

Investigating the Mechanism of Nomilin in Promoting Spinal Cord Injury Repair through Network Pharmacology and Animal Experiments **Mar 2024 - Apr 2025**
National Second Prize in the 2025 National College Student Life Science Competition (CULSC)
Position: Project Leader Zhengzhou, China

- Reviewed and organized literature materials, wrote the application proposal, and designed the research plan
- Oversaw and led experimental tasks such as RNA-Seq, network pharmacology analysis, behavioral gait analysis, and histopathological detection analysis (immunofluorescence, Western Blot), recorded experimental data, and organized experimental results

Comprehensive Bioinformatics Laboratory Course **May 2025 - Jun 2025**
Independent Project in the course of Bioinformatics, *Zhengzhou University* Zhengzhou, China

- Performed independent multi-omics data analyses using both high-performance computing (HPC) clusters and personal workstations
- Conducted genomic and transcriptomic analyses, including upstream and downstream RNA-seq workflows and single-cell RNA-seq downstream analyses
- Completed genome survey, de novo genome assembly, BUSCO quality assessment, and genome annotation using HPC resources

Stem Cell Institute, School of Life Science, Zhengzhou University **Apr 2023 - Mar 2024**
Position: Research Assistant Zhengzhou,China

- Contributed to the research on neuroinflammation repair under the supervision of a mentor specializing in Alzheimer's disease (AD) model mice treatment, spinal cord injury repair, and LPS-induced neuroinflammation repair
- Learned basic experimental techniques from graduate students and assumed the responsibility for conducting Western Blot

INTERNSHIP EXPERIENCE

Biomedical Engineering Institute, Shenzhen Bay Laboratory **Jan 2024 - Feb 2024**

Position: Winter Intern (Biochemistry Group) Shenzhen, China

Research Focus: Plasma biomarkers for early diagnosis of AD using animal models to further validate the findings

- Performed dehydration of mouse brains, responsible for configuring sucrose solution for dehydrating mouse brains, making frozen sections of dehydrated and embedded mouse brains, and photographed the fluorescence stained sections
- Conducted genotyping of 5xFAD and tau mice, responsible for adding reagents, boiling mouse tails to extract DNA, conducting PCR, loading samples for electrophoresis, and determining the genotype according to electrophoresis results
- Thawed, aliquoted and centrifuged the plasma samples from the cooperative hospital for Single Molecule Array (SiMoA) analysis

EXTRACURRICULAR EXPERIENCE

Bioinformatics Class 2, **School of Life Science**, **Zhengzhou University** **Feb 2024 - Sep 2024**

Position: Class President Zhengzhou, China

- Responsible for organizing class meetings, assisting teachers in communicating with students and monitoring their learning progress, and providing timely support and guidance to those who faced challenges

Experiments of Animal Biology, School of Life Science, **Zhengzhou University** **Mar 2024 - Jun 2024**

Position: Teaching Assistant Zhengzhou, China

- Provided students with detailed explanations of the animals and equipment used in experiments as well as the underlying biological principles and background information
- Answered students' questions and assisted them in completing the experimental tasks

HONORS & QUALIFICATIONS

- **Xiaomi Scholarship** Zhengzhou University (selected from over 70,000 undergraduate and graduate students; 40 recipients) in 2026
- **Second Prize (National Level)** China Undergraduate Life Science Competition in 2025
- **Mitacs–CSC Globalink Research Award** (<200 awardees from universities in China) in 2025 (Host University: McGill University)
- **First-class Scholarship** of Zhengzhou University in 2023 & 2024 & 2025 (top 5%)
- **Merit Student** of Zhengzhou University in 2023 & 2024 & 2025 (top 15%)
- **Provincial Excellence Award** in the National English Competition for College Students (NECCS) in 2023
- **TOEFL**: 96 (R26 L24 S22 W24)

SKILLS & INTERESTS

- **Programming Languages**: Python, R, Perl, SQL
- **Dry Laboratory Skills**: Network Pharmacology Analysis, RNA-Seq
- **Laboratory Skills**: Western Blot, Immunofluorescence, Genotyping, RT-PCR, SiMoA, ELISA, RNA Isolation & Quantitation, Mouse Gavage, Gardiac Blood Collection, Mouse Tissue and Organ Fixation and Harvesting, Spinal Cord Injury Modeling
- **Research Interests**: AI4S, Alzheimer's disease, Immunology ,Biochemistry, Bioinformatics, Biostatistics
- **Hobbies**: Drawing, Jazz Dance, Singing