

# JIEKE(JACK) WU

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## EDUCATION

**University of Science and Technology of China, Hefei, China** 08/2021 – 06/2025 (expected)  
A third-year undergraduate student at the Department of Life Sciences and Medicine

## EXPERIENCE

**Hierarchical transformer for genomics** Research Assistant  
Cedars-Sinai Medical Center, Dr.Zijun Zhang  
UC Berkeley, Dr.Wuyang Chen 03/2024 – present

- Investigating Concealed Information within DNA Sequences using Deep Learning.
- Exploring how to enhance the model's perception of DNA information by integrating the global and local information of DNA sequences.

**Training-free Design of Data-centric Augmentations with Principles** Research Assistant  
UC Berkeley, Dr.Wuyang Chen 06/2023 – 02/2024

- Explored the influence of various image augmentation methods on the recognition accuracy of common deep learning networks.
- Explored the relationship between data covariance properties and image recognition accuracy.
- Summarized the evaluation of various image augmentation methods on different medical imaging datasets.

**Isolation of bacteriophages targeting gut bacteria** Research Assistant  
University of Science and Technology of China, Prof.Yi Duan 01/2023– 05/2024

- This study established an improved in vitro culture system for *Akkermansia muciniphila* (Akk), simplifying and enhancing the user-friendliness compared to previous systems, while also eliminating *Cutibacterium acnes* contamination.
- We successfully isolated and purified Akk-targeting phages from wastewater, facilitating the development of a phage library for gut microbiome research.
- The constructed phage library enables targeted Akk knockdown or knockout, advancing our understanding of Akk's role in gut-related diseases and providing a technological platform for future gut microbiota studies.
- This project was rated as an excellent school-level project that year.

**Biodegradable needles for transdermal delivery in biofilm-infected chronic wounds** Research Assistant  
Suzhou Institute for Advanced Research, Prof.Xiaorong Xu 11/2022 – 09/2023

- Proficiency in finite element simulation software (COMSOL and Abaqus) for conducting simulation tasks.
- Designed a long needle for the treatment of deep-seated tissue infections.
- Introduced a novel injection molding method for the cost-effective and convenient production of long or microneedles with complex geometrical structures.
- This project was rated as an excellent school-level project that year.

**Isolation and identification of cyanobacteria and cyanophages from Lake Chaohu** Research Assistant  
Laboratory of Biochemistry & Structural Biology, Prof.Congzhao Zhou 09/2022 – 06/2023

- Successfully isolated three strains of cyanobacteria from Lake Chaohu water samples.
- Conducted a genomic analysis of these three cyanobacteria strains, thereby determining their taxonomic classification.
- Isolated some cyanophages from Lake Chaohu water samples using these isolated cyanobacteria strains.
- Thanks to this work, we received an award at the National University Life Science Competition in the same year.

## SELECTED AWARDS

- Outstanding School-Level Project: College Student Research Program 2023
- A Prize in the 8th National University Life Science Competition 2023
- Outstanding Undergraduate Scholarship 2023, 2022, 2021

# SKILLS

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**Programming Languages:** Python, C/C++, Matlab (ranked by proficiency)

**Tools and Frameworks:** Git, L<sup>A</sup>T<sub>E</sub>X, PyTorch, HuggingFace