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

The Middle School Attached To Northwestern Polytechnical University, Xi'an, China 08/2018 – 06/2021

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

- Exploring the Influence of Various Image Augmentation Methods on the Recognition Accuracy of Common Deep Learning Networks.
- Exploring the Relationship between Data Covariance Properties and Image Recognition Accuracy.
- Summarizing 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– present

- Learning techniques related to animal experiments.
- Learning basic biochemical laboratory techniques.

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.
  - Utilized Abaqus to simulate the process of needle insertion into the skin.
  - Utilized Comsol to optimize material selection and the geometric shape of the needle.
- Designed a long-needle for the treatment of deep-seated tissue infections.
  - This long needle inherits the advantages of microneedles and compensates for their limitations in terms of depth.
- Introduced a novel injection molding method for the cost-effective and convenient production of long or microneedles with complex geometrical structures.

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

Selected Awards

- A Prize in the 8th National University Life Science Competition 2023
- Outstanding Undergraduate Scholarship 2023, 2022, 2021

Skills

Programming Languages: Python, C/C++, Matlab (ranked by proficiency)
Tools and Frameworks: Git, LaTeX, PyTorch