Jingkai LAN

PERSONAL INFORMATION

Name: Jingkai LAN   **Email:** jingkai.lan@students.unibe.ch   **Phone:**+41 765479623

EDUCATION BACKGROUND

University of Bern (Master)   —— SWITZERLAND   September 2023 to Present

Major: Bioinformatics and Computational Biology

Shihezi University (Bachelor)   —— CHINA   September 2019-June 2023

Degree: Bachelor of Science in Biological Science   GPA: 3.64 / 4.0

SKILL

Language Proficiency: English; Chinese

Computer skills: Python, R, Bash, HPC, Deep learning, Machine Learning, NGS analysis, Data analysis.

Experiment skills: Nucleic Acid Extraction, Gel electrophoresis, PCR, Spectrophotometer, Clean bench, Asepsis room, Dissect, Microbial culture technique.

PUBLICATION

Abduriyim, S.*, Kasimu, T., Lan, J., Pu, Z., Bai, J. & Wang, Y. (2022).

Morphological and molecular confirmation of the common pipistrelle bat, *Pipistrellus pipistrellus* Schreber, 1774 (Vespertilionidae: Chiroptera), in Xinjiang, China.

Mammalia, vol. 86, no. 3, pp. 298–302.

DOI: doi.org/10.1515/mammalia-2021-0045

RESEARCH PROJECTS

Using Deep Learning Method to Predicting metal site in Metalloprotein   February 2025 - Present

Thomas Lemmin Lab, IBMM, University of Bern   —— Master's thesis

Integrated metal-binding protein sequences and extracted binding-site data from two publicly available databases (MESPEUS and MbPA). Generated non-metal-binding protein sequences by mutating metal-binding sites of metal-binding protein sequences using AI-driven protein design and structural prediction tools (ProteinMPNN, ESM-Fold and CHAI 1). Annotated enzyme information by PDB enzyme classification database and BRENDA. Developed and trained four distinct deep-learning models to classify metalloproteins, predict enzymatic activity, and identify metal-binding sites.

Adapert-based pLM Training for Metal-Protein Classification   September 2024 - December 2024

Thomas Lemmin Lab, IBMM, University of Bern   —— Mini project

Curated and integrated multiple protein datasets from recent literature; conducted thorough data cleaning and preprocessing to generate a high-quality training dataset. Implemented an adapter-based approach using a pre-trained Prot-BERT model, adding and training a lightweight Adapter module to distinguish metal-binding from non-metal-binding proteins. Achieved good classification performance, the test accuracy is 76.14%.

Diversity of Peach Tree Viruses in Xinjiang, China   November 2021-August 2022

Baiming Cui Lab, Shihezi University   —— Bachelor's Thesis

Performed bioinformatics analysis of metatranscriptomic data from *Prunus persica var. compressa* leaf samples collected in the Shihezi region to identify viral species, their abundance, and distribution patterns. Conducted phylogenetic analyses to characterize genetic relationships among detected viral strains. Identified multiple peach-associated viruses and assessed their genetic diversity and evolutionary status in Xinjiang, providing foundational data for local peach disease management.

Morphological and Molecular Survey of Bat Species in Shihezi, Xinjiang   November 2020-August 2021

Abduriyim Shamshidin Lab, *Shihezi University   —— Mini project*

Collected naturally deceased bats in the Shihezi region, Xinjiang, performed morphological identification, and extracted genomic DNA from muscle tissues. Amplified mitochondrial ND1 and Cyt b genes using PCR and confirmed species identification as *Pipistrellus pipistrellus* by sequence alignment with the NCBI database. Provided the first combined morphological and molecular evidence for the presence of this species in the region.

PRIZES AND AWARDS

Excellent Graduate (one of the seventeen award-winners among 180 students)   December 2022

* Summer Camp Excellent Participant Award, ShanghaiTech University   July 2022

First-class scholarship in the university (one of the five receivers among 104)   December 2021

Excellent Student Leader   November 2020

* ('Summer Camp' means admission program of China university, offering excellent students exemption from postgraduate entrance exams.)