KERU CHEN

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PROFILE

I am currently a junior majoring in Automation at Xi'an Jiaotong University. My research interests span the field of artificial intelligence, particularly **reinforcement learning and embodied AI**. I possess a strong sense of self-motivation, an aptitude for self-directed learning, and a knack for problem-solving. My fervent passion lies in scientific research.

EDUCATION

Xi'an Jiaotong University   **Sep 2021 – Present**

Bachelor of Engineering in Automation   *Current GPA: 3.2/4.3*

RELEVANT COURSEWOEK

- Data structures
- Programming design
- Operational research
- Machine learning
- University Physics
- Pattern recognition
- Computer graphic
- Reinforcement learning

EXPERIENCE

Westlake University   **Jul 2024 – Present**

Research intern

- Supervised by **Prof. Donglin Wang** from AI Division, School of Engineering, Westlake University
- We used a reinforcement learning framework to fine-tune the OpenVLA model, enabling it to achieve better performance in real-world tasks, such as with the Franka robotic arm. **Target IJRR**

University of North Carolina at Chapel Hill   **Jan 2024 – May 2024**

Research intern

- Supervised by **Prof. Tianlong Chen** from Broad Institute of MIT and Harvard, who will soon join The University of North Carolina at Chapel Hill as an Assistant Professor of Computer Science.
- Take part in research about time series forecasting and lead research on attacking LLM&RAG.

University of Houston   **Sep 2023 – Present**

Research intern

- Supervised by **Prof. Sen Lin** from University of Houston.
- Combine offline-to-online reinforcement learning and constrained reinforcement learning. **Target ICLR 2025**

Chinese Academy of Sciences   **Feb 2023 – Oct 2023**

Research intern   *Xi'an, China*

- Supervised by **Prof. An Pan** from Pioneering Interdiscipline Center, State Key Laboratory of Transient Optics and Photonics, CAS.
- Undertook the task of improving Fourier Ptychography Microscope algorithm and helped the professor complete the experiment.
- Published review article titled *Fourier ptychographic microscopy 10 years on: A review* on *Cells* (JCR Q1, IF=7.67).

PROJECTS

Translation of Breast Cancer Cell Staining Images Based on Multi-Scale GAN   **May 2024 – Jul 2024**

- Supervised by **Prof. Yan Yang** from School of Mathematics and Statistics, Xi'an Jiaotong University.
- Received the National Second Prize at the 9th National Undergraduate Biomedical Engineering Innovation Design Competition.
- We used a U-Net with an added attention mechanism as the generator, a multi-scale CNN as the discriminator, and a loss function based on the Frobenius norm to balance the weights of each discriminator, all within the training framework of a Wasserstein GAN.

Waveformer: A Transformer based EEG Sleep Stage Classifier   **Oct 2023 – Nov 2023**

- Supervised by **Prof. Gang Wang** from The Biomedical-Information Engineering laboratory of State Ministry of Education, School of Life Science and Technology, Xi'an Jiaotong University.

- Combined with deep learning and signal processing techniques, i.e. encoder block of Transformer, convolutional auto-encoder and wavelet transform to classify sleep stages using EEG, and reached a classification accuracy of 75% in a private dataset, the highest level in this course.
- This project and its report have been uploaded to Github.

Face super-resolution based on deep learning **May 2022 – May 2023**
- Project description *National Training Program of Innovation and Entrepreneurship for Undergraduates.*
- Supervised by **Prof. Jingang Shi** from School of Software Engineering, Xi 'an Jiaotong University.
- Participate in designing and conducting experiments of IDPT algorithm, which published in IJCAI2022.
- Improved IDPT algorithm and build web-demo based on Flask and Ajax according to the algorithm to realize face detection, crop and super-resolution restoration of a given photo.

HONORS AND AWARDS

The 9th National Biomedical Engineering Innovation Design Competition *National Second Prize* **Aug 2024**

Mathematical modeling competition of Xi 'an Jiaotong University *Second Prize* **Aug 2022**

Second National Artificial Intelligence Knowledge Compitition for College Students *First Prize* **Jun 2022**

SKILLS

Language: Mandarin (Native speaker) and English (fluent)
Standard test: IELTS 6.5 test date 01/19/2024
Technical Skills: Python (PyTorch, Numpy, Pandas, etc.), C/C++, Matlab, LaTeX, Git/GitHub, Linux, Altium Designer, SolidWorks
Hobbies: Photography, Cuisine, Basketball