Yi Zhao

Mobile: +86-13356666607 | **Email:** garyzhao2026@outlook.com

EDUCATION

Beijing Normal-Hong Kong Baptist University (BNBU)   Zhuhai, China | 09/2022-Present
- **Major: Bachelor of Science (Honours) in Data Science** (Expected 06/2026)
- **Cumulative GPA:** 3.66/4.0, **Major GPA:**3.86/4.0, **GPA (Upper Division)**: 3.92/4.0
- **Honours & Awards:** First-class scholarship of BNBU, 2024, 2025. Kaggle Featured Competition Bronze Medal
- **Technical Skills:** Proficiency in Python, Pytorch, TensorFlow, SQL, Java, C
- **Core Courses:** Object-Oriented Programming, Discrete Structures, Data Structures and Algorithms, Regression Analysis, Machine Learning, Deep Learning, Financial Computing, Comprehensive Practice Training on Big Data and AI, etc.

University of California, Berkeley, Summer school   CA, US | 01/07/2024-08/08/2024
- **Courses:** Introduction to Probability and Statistics (A-), Introduction to Finance (A)

PUBLICATIONS

- **Yi Zhao**. "Super-Resolution Image Generation for Diabetic Retinopathy Detection by SRGAN," accepted by *2025 International Conference on Data Science and Engineering (ICDSE 2025)*
- Ruilang Wang, **Yi Zhao**, Ziqi Ye, Bowen Liu, Yucheng Li, Donglong Chen "Automated Microstructure Segmentation in Titanium Alloys Using Deep Learning Techniques," accepted by *2025 International Conference on Artificial Intelligence and Pattern Recognition (AIPR 2025)*
- **Yi Zhao**, Qirui Fan, Xiaohui Duan, Donglong Chen, "Segmentation-Guided Mamba Dynamic Diffusion Model for Anatomy-Preserving MRI Generation," under reviewed by *2026 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2026)*

PROFESSIONAL EXPERIENCES

Suzhou Institute of Biomedical Engineering and Technology (SIBET), Chinese Academy of Sciences (CAS)
Algorithm Development Intern   Suzhou, China | 01/01/2025-31/01/2025
- Participated in the research project entitled Super-Resolution Image Generation for Diabetic Retinopathy Detection by SRGAN, involving the super-resolution processing of diabetic retinopathy (DR) fundus images, and the construction and optimization of the SRGAN model
- Built a dual-module "Generator-Discriminator" structure based on the SRGAN framework, including replacing the traditional discriminator with a pre-trained VGG-19 network to enhance the capture of textural and structural features in DR images, and introducing enhanced residual learning and perceptual loss optimization to effectively improve the high-frequency details and realism of generated images
- Utilized the APTOS-2019 dataset (containing 3662 DR fundus images) to complete data preprocess and augmentation, implemented a two-stage training processing, including training the generator for 50 epochs to prevent the model from collapsing, after that, both G and D performed the adversarial training with a learning rate of 0.0001 and 500 epochs
- Experiment results indicated that SRGAN has commendable efficacy in the APTOS-2019 dataset, which demonstrates its superiority in detail restoration
- Independently authored a project-based research paper, which has been accepted by the conference: *ICDSE 2025*

China United Network Communications Co., Ltd   Shandong, China | 06/2024-07/2024
Data Analyst Intern
- Conducted quantitative analysis on user base metrics, processing over 10k+ records to identify usage patterns and growth trends using Python (Pandas, NumPy)
- Developed predictive machine learning models for quarterly and monthly sales forecasting via Pytorch and Python, optimizing model parameters to achieve 96% prediction accuracy
- Assisted in predicting mobile data usage across northern Chinese provinces, responsible for feature engineering and model validation, integrating temporal and geographic data variables
- Collaborated with the marketing department to translate model-based forecasting results (such as sales volume and traffic usage trends) into practical promotion strategies

RESEARCH EXPERIENCES

Research about Segmentation-Guided Mamba Dynamic Diffusion Model for Anatomically-Preserving MRI Generation
Advisor: Prof. Donglong Chen from BNBU   01/2025-08/2025
- Mastered the model architectures and principles in the related paper, replicated the original model via GitHub for efficient implementation, and integrated Mamba-based dynamic feature processing mechanisms into the existing framework
- Built and debugged modular code using Python and Pytorch and utilized Jupyter and VScode to establish secure connections with cloud computing servers, enabling efficient large-scale model training
- Performed extensive iterative debugging to refine key modules, significantly improving model performance in MRI sub-region discrimination and anatomical precision

Segmentation of Titanium Alloy Microstructure in Aerospace   03/2024-04/2025
National College Student Innovation Contest, Advisor: Prof. Donglong Chen from BNBU
- Developed a deep learning framework for TC4 titanium alloy microstructure segmentation using VGG-based U-Net and Transformer-based SegFormer, achieving 90% pixel accuracy and 0.7 mean IoU on 1024×1024 metallographic images
- Implemented a customized preprocessing pipeline combining IWMID enhancement and Otsu thresholding, improving α/β phase boundary contrast and segmentation robustness
- Optimized network training via residual connections, weighted cross-entropy, and patch-based augmentation, effectively mitigating overfitting in small-sample learning scenarios
- Conducted comparative analysis between CNN and Transformer architectures, demonstrating complementary strengths in boundary precision and orientation-aware segmentation
- Co-authored a research paper accepted by *the 2025 AIPR International Conference*, presenting a scalable framework for automated microstructure analysis and materials informatics