

# Zhiyu Liu (Quentin Liu)

(+1) 3109093635 | [lizhyuxi@outlook.com](mailto:lizhyuxi@outlook.com) | <https://lizhyuxi.github.io>

## EDUCATION

**University of California, Los Angeles** Sept. 2024 - Dec. 2025  
Master of Engineering. Focus on Artificial Intelligence.

**Shanghai Jiao Tong University | ParisTech Elite Institute of Technology (SPEIT)** Sept. 2020 - June 2024

Bachelor's Degree in French Language & Information Engineering

- **GPA:** Information Engineering (91/100), French Language (87/100)
- **Selected courses:** C Program and Algorithm Analysis (91), Data Structure (94), Probability & Statistics (96), Database System Concepts (93), Machine Learning (96), Computer Networks (91), Computer Organization and Architecture (93)
- **Honors and Awards:** Merit Student Honor (4%), Outstanding graduate of Shanghai Jiao Tong University (10%)

## PROFESSIONAL EXPERIENCES

**MINIMAX, LLM Engineer** Mar. 2024 - June 2024

- Led the development of repo-level datasets for ABAB7's pre-training based on Github source codes, producing 20 billion tokens, enhancing the model's abilities in handling cross-file code
- Engineered a dependency graph from Wikidata internal references using mwparserfromhell and built long context wikidata through topological sort, producing 30 billion tokens for ABAB7's long-text data comprehension pre-training
- Led the scraping, quality assessment, and rewriting of over 20,000 LeetCode QA pairs, producing 16 million tokens for ABAB7's supervised fine-tuning, which improved the model's performance by 1% in HumanEval+ code generation task
- Expanded lm-evaluation-harness evaluation framework on various open-source benchmarks, incl. HumanEval(+), Mbpp(+), Natural Code Benchmark, and DS1000, enabling a more comprehensive assessment of model abilities

## SELECTED PROJECTS

**Medical Image Segmentation of Brain Tumors** Jul. 2022 - Aug. 2022

Imperial College Data Science Summer School - **The Best Computer Vision Project Award (1st out of 12 groups)**

- Led a team of 3 in a medical image segmentation project, focusing on accurately labeling and segmenting brain tumors within a dataset of over 3,000 MRI scans with corresponding masks
- Adopted widely-used Unet++ architecture. Conducted a comprehensive evaluation of alternative loss functions incl. Lovasz Hinge and BCE-DICE, selecting BCE-DICE for its superior validation Intersection over Union (IoU) vs Lovasz Hinge (0.825 vs. 0.792)
- Achieved outstanding results in an unseen dataset, with a Dice score of 0.779 vs. the average of 0.699

**Crowd Counting Model Based on CNN and ViT** Dec. 2022 - Apr. 2023

- Designed a sophisticated crowd counting model which has excellent global contextual comprehension by integrating Convolutional Neural Network (CNN) with Vision Transformer (ViT). Addressed global feature capture limitations in classic CNN models such as Multi-Column CNN (MCNN)
- Demonstrated remarkable performance vs. the original MCNN on the UCF\_CC\_50 dataset, with a MAE of 362.7 (vs. 377.6) and a MSE of 467.6 (vs. 509.1). Paper accepted for publication

**Intelligent Fault Diagnosis of Rolling Bearing based on Incremental Learning** Dec. 2023 - June. 2024

- Proposed and implemented VEGEM, an incremental learning model combining Variational Mode Decomposition (VMD), Wide Deep Convolutional Neural Network, and Gradient Episodic Memory, tested on CWRU dataset
- Performed a comparative analysis, showing that VMD achieved the highest final accuracy (90.6%) across five phases, outperforming Empirical Mode Decomposition (EMD) (87.8%) and Continuous Wavelet Transform (CWT) (81.2%)
- Achieved competitive results, maintaining over 90% accuracy across five phases, outperforming baseline methods such as LLDM (93.9% vs. 92.9% at phase 4) while reducing training time by 46% compared to iCaRL method. Paper accepted for publication

**DPO Poisoning via LoRA-based Fine-Tuning** Sept. 2024 - Dec. 2024

- Investigated vulnerabilities in Direct Preference Optimization (DPO) under LoRA-based fine-tuning using the HH-RLHF dataset, demonstrating that DPO score-based poisoning successfully increased the poison score from 0.5 to 3.0, significantly outperforming topic-based poisoning, which showed similar effectiveness to random poisoning

## PUBLICATIONS

- **Zhiyu Liu** and Yongqing Qu: Crowd Counting Model based on CNN and Transformer. *Computer Engineering and Information Processing (CEIP)*, 2023.
- **Zhiyu Liu**, Zhiyi Zhang, Mohamed Sallak and Siqi Qiu\*: *Intelligent Fault Diagnosis of Rolling Bearing based on Incremental Learning*. *International Conference on System Reliability and Safety Engineering (SRSE)*, 2024.
- Qiwei Shi and **Zhiyu Liu**: Topography Measurement by EBSD Calibration. CN Patent Application 12514492.

## Others

**Languages:** Chinese (Native), English (**GRE 337, TOEFL 104**), French (Intermediate) **Hobbies:** Violin

**Programming skills:** Python, C/C++, MATLAB, SQL

**Tools:** Git, LaTeX, MS Office, Tableau