Peijia Qin

@ qinpj2021@mail.sustech.edu.cn

Education

Southern University of Science and Technology — Shenzhen, China
Bachelor of Computer Science and Technology; ***GPA: 3.95/4.00, Rank: 1/194*** — *Sep 2021 – June 2025 (Expected)*

University of California, San Diego — California, US
Visiting Student; ***GPA: 4.00/4.00*** — *Mar 2024 – Jun 2024*

Relevant coursework: Machine Learning, Artificial Intelligence, Time Series Analysis, Information Theory, Real Analysis, Abstract Algebra, Differential Equations

Skills

Programming: Python, R, MATLAB, Java

Libraries: PyTorch, NumPy

Languages: Chinese (Native), English (TOEFL 101)

Research Interests

My research interests lie in the field of machine learning and its applications in various domains, such as computer vision, natural language processing, data mining, and dynamic systems.
I am also interested in fundamental problems in machine learning and deep learning, including generalization, scalability, data quality, probabilistic modeling, and interpretability.

Publications

- **Peijia Qin**, Shuxian Li, Xiaoqun Liu, Zubin Zheng, and Siang Yew Chong. Threshold Moving for Online Class Imbalance Learning with Dynamic Evolutionary Cost Vector. Transactions on Machine Learning Research, 2024.
- **Peijia Qin** and Liyan Song. Online Learning in Varying Feature Spaces with Informative Variation. In 13th International Conference on Intelligent Information Processing, 2023.

Preprints

- **Peijia Qin** and Jianguo Zhang. MQ-VAE: Training Vector-Quantized Networks via Meta Learning. Under review at ICLR 2025.
- **Peijia Qin**, Ruiyi Zhang, and Pengtao Xie. BiDoRA: Bi-Level Optimization-Based Weight-Decomposed Low-Rank Adaptation. Under review at ICLR 2025.

Research Experience

Online Learning with Varying Feature Spaces — Southern University of Science and Technology
Supervised by Prof. Xin Yao and Dr. Liyan Song — *Jun 2023 – Oct 2023*

- Conducted an extensive literature review and identified the ignorance of informative feature variation patterns in the domain of online learning with varying feature spaces, leading to novel formulation and solution.
- This work has been accepted for presentation as a conference paper.

Evolutionary Algorithms for Online Learning — Southern University of Science and Technology
Supervised by Prof. Xin Yao and Dr. Siang Yew Chong — *Sep 2023 – Jan 2024*

- Addressed the non-optimality issue in current online class imbalance classification research and proposed dynamic evolutionary algorithms as a solution.
- This work has been accepted for publication in the *Transactions on Machine Learning Research* journal.

Large Language Model Fine-Tuning University of California, San Diego

Supervised by Prof. Pengtao Xie *Mar 2024 – Sep 2024*

- Enhanced a recently proposed parameter-efficient fine-tuning method by introducing a bi-level optimization technique, which improved learning capacity and effectively mitigated overfitting.
- The paper is currently under review at ICLR 2025.

Learning-based Control University of California, San Diego

Supervised by Prof. Yuanyuan Shi *Mar 2024 – Present*

- Accelerated the temporal integration in input delay control problems using machine learning methods.
- Developed a novel temporal neural operator architecture to learn the solution mapping while applying conformal prediction techniques to ensure prediction reliability.

Image Discrete Representation Learning Southern University of Science and Technology

Supervised by Prof. Jianguo Zhang *Aug 2024 – Oct 2024*

- Identified three key challenges in the well-known VQ-VAE method and applied meta-learning techniques to solve them in a cohesive framework.
- The paper is currently under review at ICLR 2025.

Academic Services

- Reviewer: ICLR

Competitions

- International Genetically Engineered Machine (IGEM) 2023, Silver Medal