Peijia Qin

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Education

Southern University of Science and Technology Shenzhen, China
Bachelor of Computer Science and Technology; ***GPA: 3.95/4.00, Rank: 1/195*** *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 center in machine learning and its application in a wide range of fields including computer vision, natural language processing, data mining and dynamic systems.

Publications and Preprints

- **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.

Currently Under Review:

- **Peijia Qin** and Jianguo Zhang. MQ-VAE: Training vector-quantized networks via meta learning. Under review at ICLR2025.
- **Peijia Qin**, Ruiyi Zhang, and Pengtao Xie. BiDoRA: Bi-level optimization-based weight-decomposed low-rank adaptation. Under review at ICLR2025.

Research Experience

Online Learning and Concept Drift SUSTech
Supervised by Prof. Xin Yao *Sep 2022 – Jan 2024, Member*

- Focused on online learning and data stream mining, especially concept drift (i.e., changes in data distribution over time) and class imbalance learning.
- Collaborated with other group members and conducted a comprehensive literature review.

Online Learning with Varying Feature Space SUSTech
Supervised by Prof. Xin Yao, Dr. Liyan Song *Jun 2023 – Oct 2023*

- Identified a research gap within the domain of online learning with varying feature spaces and formulated a novel problem in this area.
- This paper has been accepted as a conference paper at 13th International Conference on Intelligent Information Processing.

Evolutionary Algorithms for Online Imbalance Learning SUSTech

Supervised by Prof. Xin Yao, and Dr. Siang Yew Chong *Sep 2023 – Jan 2024*

- Solved the research gap of non-optimality in current online class imbalance classification work and used evolutionary algorithms to bridge them.
- This paper has been accepted as a journal paper at Transactions on Machine Learning Research.

Natural Language Processing UC San Diego

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

- Improve one recently proposed parameter-efficient fine-tuning method named DoRA by bi-level optimization technique, which enhances the learning capacity effectively.
- The paper is currently under review as a conference paper at ICLR 2025.

Learning-based Control UC San Diego

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

- We accelerate solving input delay control problems with machine learning methods.
- We designed a novel temporal neural operator architecture to learn the mapping between function spaces with time dependency modeling. We also applied conformal prediction to ensure the reliability of predictions.

Image discrete representation learning SUSTech

Supervised by Prof. Jianguo Zhang *August 2024 – October 2024*

- We identified three issues of the well-known VQ-VAE method. We applied the meta-learning method to learn the discrete representation and showed how this simple but cohesive framework can solve the three issues.
- The paper is currently under review as a conference paper at ICLR 2025.

Academic Services

- Reviewer: ICLR