Tiexin Qin

PhD Candidate at CityU
My research interests include machine learning for non-stationary environments, dynamical systems, complex networks, transfer learning, and their applications.

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Education

City University of Hong Kong, Doctor of Philosophy — 2021 - now
Department of Electrical Engineering
Supervisor: Haoliang Li

Nanjing University, Master of Computer Technology — 2018 - 2021
Department of Computer Science and Technology
Supervisor: Yinghuan Shi
Thesis title: A Study of Data Augmentation-Based Few-Shot Learning Algorithms

China University of Mining and Technology, Bachelor of Engineering — 2014 - 2018
Department of Computer Science and Technology
Graduated with Outstanding Honor

Experience

University of Oxford, Mathematical Institute, Visiting student — Feb 2024 - Apr 2024
Characterization of molecular dynamics, supervised by Terry Lyons

Meituan, AI lab, Research Intern — Jul 2020 - Nov 2020
Video keyframe extraction for content review, supervised by Lin Ma

Awards and Honors

Research Tuition Scholarship — 2024
Student with outstanding academic performance in City University of Hong Kong

Outstanding Undergraduate — 2018
Awarded to Top 10% students in China University of Mining and Technology

China National Scholarship — 2016
The highest scholarship for undergraduate students studying in China

Publications

1. **Tiexin Qin**, Shiqi Wang, Haoliang Li. "Evolving Domain Generalization via Latent Structure-Aware Sequential Autoencoder". *IEEE Transactions on Pattern Analysis and Machine Intelligence,* ***(TPAMI, 2023)***
2. **Tiexin Qin**, Shiqi Wang, Haoliang Li. "Generalizing to Evolving Domains with Latent Structure-Aware Sequential Autoencoder". *International Conference on Machine Learning,* ***(ICML 2022)***
3. **Tiexin Qin**, Ziyuan Wang, Kelei He, Yinghuan Shi, Yang Gao, Dinggang Shen. "Automatic Data Augmentation via Deep Reinforcement Learning for Effective Kidney Tumor Segmentation". *IEEE International Conference on Acoustics, Speech and Signal Processing,* ***(ICASSP 2020)***

4. Benjamin Walker, Andrew D McLeod, **Tiexin Qin**, Yichuan Cheng, Haoliang Li, Terry Lyons. "Log Neural Controlled Differential Equations: The Lie Brackets Make a Difference". *International Conference on Machine Learning,* ***(ICML 2024)***
5. Kecheng Chen, **Tiexin Qin**, Victor Ho-Fun Lee, Hong Yan, Haoliang Li. "Learning Robust Shape Regularization for Generalizable Medical Image Segmentation". *IEEE Transactions on Medical Imaging* ***(TMI 2024)***
6. Wenbin Li, Chuanqi Dong, Pinzhuo Tian, **Tiexin Qin**, Xuesong Yang, Ziyi Wang, Jing Huo, Yinghuan Shi, Lei Wang, Yang Gao, Jiebo Luo. "LibFewShot: A Comprehensive Library for Few-shot Learning". *IEEE Transactions on Pattern Analysis and Machine Intelligence,* ***(TPAMI 2023)***
7. Ziteng Liu, Yinghuan Shi, Hongwei Chen, **Tiexin Qin**, Xuejie Zhou, Jun Huo, Hao Dong, Xiao Yang, Xiangdong Zhu, Xuening Chen, Li Zhang, Mingli Yang, Yang Gao, Jing Ma. "Machine Learning on Properties of Multiscale Multisource Hydroxyapatite Nanoparticles Datasets with Different Morphologies and Sizes". ***npj Computational Materials 2021***
8. **Tiexin Qin**, Mengxu Zhu, Chunyang Li, Terry Lyons, Hong Yan, Haoliang Li. "Deep Signature: Characterization of Large-Scale Molecular Dynamics". *arXiv:2410.02847*
9. **Tiexin Qin**, Benjamin Walker, Terry Lyons, Hong Yan, Haoliang Li. "Learning Dynamic Graph Embeddings with Neural Controlled Differential Equations". *In submission to IEEE Transactions on Pattern Analysis and Machine Intelligence,* ***(TPAMI, Under Review)***
10. **Tiexin Qin**, Hong Yan, Haoliang Li. "Generalize to New Dynamical Systems via Frequency Domain Adaptation". *In submission to IEEE Transactions on Pattern Analysis and Machine Intelligence,* ***(TPAMI, Under Review)***
11. **Tiexin Qin**, Wenbin Li, Yinghuan Shi, Yang Gao. "Diversity Helps: Unsupervised Few-shot Learning via Distribution Shift-based Data Augmentation". *arXiv:2004.05805*
12. Yinghuan Shi, **Tiexin Qin**, Yong Liu, Jiwen Lu, Yang Gao, Dinggang Shen. "Automatic data augmentation by learning the deterministic policy". *arXiv:1910.08343*

Teaching

CityU EE5434, Machine Learning for Signal Processing Applications — 2022, 2023
Teaching Assistant

CityU EE5811, Topics in Computer Vision — 2022
Teaching Assistant

CityU EE3206, Java Programming & Application — 2021,2024
Teaching Assistant

Academic Service

- **Conference Reviewer**
  SIGKDD (2022), ICME (2022), ICASSP (2023, 2024), WACV (2023, 2024), MMSP (2022), WWW (2024), NeurIPS (2024), ICLR (2025)
- **Journal Reviewer**
  IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
  Journal of Intelligent & Fuzzy Systems

Professional Skills

Programming language: Python, C++, Java, MATLAB, Latex.
Deep learning frameworks: Pytorch, Keras.