ZENG QIUHAO

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Professional Summary

Fourth-year PhD candidate at the University of Western Ontario, Machine Learning Group, supervised by Prof. Charles Ling (Fellow, Canadian Academy of Engineering) and Prof. Boyu Wang. Research focuses on:

- Efficient transformer architectures utilizing Triton kernels.
- Transfer learning in dynamic temporal domains.

Previous experience as a Research Associate in the Brain-Computer Interface Group at Nanyang Technological University under IEEE Fellow Prof. Cuntai Guan, focusing on EEG signal processing and classification.

Education

- **PhD in Computer Science**, University of Western Ontario — Jan 2022 – Present
- **M.Sc in Electrical Engineering**, National University of Singapore — Aug 2017 – Jun 2018
- **Bachelor in Engineering Mechanics**, Harbin Institute of Technology — Sep 2013 – Jul 2017

Work Experience

- **Associate Researcher**, Huawei Noah's Ark Lab NLP Team, Montreal — Jul 2024 – Present
  - Researching efficient attention architecture for next-generation Large Language Models.
- **Software Engineer**, LITEON Singapore — Jul 2018 – Mar 2019
  - Developed machine vision algorithms for camera manufacturing testing and validation.
- **Research Associate**, Nanyang Technological University — Mar 2019 – Jun 2021
  - Developed rehabilitation games based on EEG brain-computer interfaces.

Publications

- **ZETA: Leveraging Z-order Curves for Efficient Top-k Attention**
  Qiuhao Zeng, *Jerry Huang, Peng Lu, Gezheng Xu, Boxing Chen, Charles Ling, Boyu Wang*
  International Conference on Learning Representations (ICLR), 2025.
  [Efficient Attention] [Transformers]

- **Calibrated Language Models and How to Find Them with Label Smoothing**
  Jerry Huang, Peng Lu, ***Qiuhao Zeng***
  International Conference on Machine Learning (ICML), 2025.
  [LLMs] [Model Calibration]

- **Towards Understanding Evolving Patterns in Sequential Data**
  Qiuhao Zeng, *Long-Kai Huang, Qi Chen, Charles Ling, Boyu Wang*
  Conference on Neural Information Processing Systems (NeurIPS), 2024 (Spotlight, Top 2.1%)
  [Sequential Data] [Temporal Dynamics]

- **On the Benefits of Attribute-Driven Graph Domain Adaptation**
  Ruiyi Fang, Bingheng Li, Zhao Kang, ***Qiuhao Zeng***, *Nima Hosseini Dashtbayaz, Ruizhi Pu, Boyu Wang, Charles Ling*
  International Conference on Learning Representations (ICLR), 2025.
  [Graph ML] [Domain Adaptation]

- **Homophily Enhanced Graph Domain Adaptation**
  Ruiyi Fang, Bingheng Li, Jingyu Zhao, Ruizhi Pu, ***Qiuhao Zeng***, *Gezheng Xu, Charles Ling, Boyu Wang*
  International Conference on Machine Learning (ICML), 2025.
  [Graph ML] [Homophily]

- **Latent Trajectory Learning for Limited Timestamps under Distribution Shift over Time**
  Qiuhao Zeng, *Changjian Shui, Long-Kai Huang, Peng Liu, Xi Chen, Charles Ling, Boyu Wang*
  International Conference on Learning Representations (ICLR), 2024 (**Oral, Top 1.2%**).
  [**Temporal Data**] [**Distribution Shift**]

- **Generalizing across Temporal Domains with Koopman Operators**
  Qiuhao Zeng, *Wei Wang, Fan Zhou, Gezheng Xu, Ruizhi Pu, Changjian Shui, Christian Gagné, Shichun Yang, Charles Ling, Boyu Wang*
  AAAI Conference on Artificial Intelligence (AAAI), 2024.
  [**Domain Generalization**] [**Koopman Theory**]

- **Foresee What You Will Learn: Data Augmentation for Domain Generalization in Non-Stationary Environments**
  Qiuhao Zeng, *Wei Wang, Fan Zhou, Charles Ling, Boyu Wang*
  AAAI Conference on Artificial Intelligence (AAAI), 2023.
  [**Domain Generalization**] [**Data Augmentation**]

- **Episodic Task-Agnostic Contrastive Training for Multi-Task Learning**
  Fan Zhou, Yuyi Chen, Jun Wen, ***Qiuhao Zeng****, Changjian Shui, Charles X. Ling, Shichun Yang, Boyu Wang*
  Neural Networks, 2023.
  [**Multi-Task Learning**] [**Contrastive Learning**]

- **LGGNet: Learning from Local-Global-Graph Representations for Brain-Computer Interface**
  Yi Ding, Neethu Robinson, Chengxuan Tong, ***Qiuhao Zeng****, Cuntai Guan*
  IEEE Transactions on Neural Networks and Learning Systems (IEEE TNNLS), 2023.
  [**BCI**] [**Graph Neural Networks**]

Patent

- **Mental Arousal Level Regulation System and Method**, PCT Patent no. PCT/SG2022/050243 (2022).

Research Activities

- Reviewer: AISTATS, ICLR, ICML, NeurIPS (Top Reviewer), TNNLS, TMLR.
- Teaching Assistant: CS3346 (AI), CS2210 (Data Structures), CS3357 (Networks).