Qiao Xiao [Homepage] [Google Scholar]
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Address: Eindhoven, Netherlands

EDUCATION

Research Visiting in ETH Zurich, Switzerland Jun. 2025 - Aug. 2025

- Department of Computer Science
- Researches: LLMs Sparse Pretraining
- Supervisors: Torsten Hoefler

Research Visiting in University of Luxembourg, Luxembourg Jan. 2025 - Apr. 2025

- Department of Mathematics and Computer Science
- Researches: Model Sparsity, LLMs Efficiency

Ph.D. in Eindhoven University of Technology, Netherlands Oct. 2021 - Sept. 2025 (Expected)

- Department of Mathematics and Computer Science
- Researches: Dynamic Sparse Training, Data Pruning, Efficiency AI
- Supervisors: Decebal Constantin Mocanu and Mykola Pechenizkiy

MPhil. in Harbin Institute of Technology, China Sept. 2015 - Jan. 2018

- Faculty of Electronic and Information Engineering
- Researches: Computer Vision, Deep Learning

BEng. in Shenzhen University, China Sept. 2010 - Jun. 2014

- Faculty of Information Engineering

RESEARCH INTERESTS

• Sparse Neural Networks • Data Pruning • LLMs Efficiency • Federated Learning

PUBLISHED PAPERS

(* denotes equal contribution)

1. Boqian Wu*, **Qiao Xiao***, Shunxin Wang, Nicola Strisciuglio, Mykola Pechenizkiy, Maurice Van Keulen, Decebal Constantin Mocanu, Elena Mocanu. *Dynamic Sparse Training versus Dense Training: The Unexpected Winner in Image Corruption Robustness.* (**ICLR**), 2025. [Link]

2. Jinjing Zhu, Feiyang Ye, **Qiao Xiao**, Pengxin Guo, Yu Zhang, and Qiang Yang. *A Versatile Framework for Unsupervised Domain Adaptation based on Instance Weighting*. IEEE Transactions on Image Processing (**TIP**), 2024. [Link]

3. Boqian Wu*, **Qiao Xiao***, Shiwei Liu, Lu Yin, Mykola Pechenizkiy, Decebal Constantin Mocanu, Maurice Van Keulen, Elena Mocanu. *E2ENet: Dynamic Sparse Feature Fusion for Accurate and Efficient 3D Medical Image Segmentation*. (**NeurIPS**), 2024 [Link]

4. **Qiao Xiao**, Boqian Wu, Lu Yin, Christopher Gadzinski, Tianjin Huang, Mykola Pechenizkiy, Shiwei Liu, Decebal Constantin Mocanu. *Are Sparse Neural Networks Better Hard Sample Learners?* (**BMVC**), 2024. [Link]

5. **Qiao Xiao***, Pingchuan Ma*, Adriana Fernandez-Lopez, Boqian Wu, Lu Yin, Stavros Petridis, Mykola Pechenizkiy, Maja Pantic, Decebal Constantin Mocanu, Shiwei Liu. *Dynamic Data Pruning for Automatic Speech Recognition.* (**InterSpeech**), 2024. [Link]

6. Adriana Fernandez-Lopez, Honglie Chen, Pingchuan Ma, Lu Yin, **Qiao Xiao**, Stavros Petridis, Shiwei Liu, Maja Pantic. *MSRS: Training Multimodal Speech Recognition Models from Scratch with Sparse Mask Optimization.* (**InterSpeech**), 2024. [Link]

7. **Qiao Xiao**, Yu Zhang, Qiang Yang. *Selective Random Walk for Transfer Learning in Heterogeneous Label Spaces.* IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2024. [Link]

8. Shiwei Liu, Tianlong Chen, Xiaohan Chen, Xuxi Chen, **Qiao Xiao**, Boqian Wu, Mykola Pechenizkiy, Decebal Mocanu, Zhangyang Wang. *More ConvNets in the 2020s: Scaling up Kernels beyond 51x51 using Sparsity.* The International Conference on Learning Representations (**ICLR**), 2023. [Link]

9. **Qiao Xiao***, Boqian Wu*, Yu Zhang, Shiwei Liu, Mykola Pechenizkiy, Elena Mocanu, Decebal Constantin Mocanu. *Dynamic Sparse Network for Time Series Classification: Learning What to "See"*. In 36th Conference on Neural Information Processing Systems (**NeurIPS**), 2022. [Link]

10. Feiyang Ye, Baijiong Lin, Zhixiong Yue, Pengxin Guo, **Qiao Xiao**, Yu Zhang. *Multi-objective meta learning*. In 35th Conference on Neural Information Processing Systems (**NeurIPS**), 2021. [Link]

11. **Qiao Xiao**, Yu Zhang. *Distant transfer learning via deep random walk*. Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**), 2021. [Link]

WORKING PAPERS

1. (Under Review) **Qiao Xiao**, Alan Ansell, Lu Yin, Boqian Wu, Mykola Pechenizkiy, Shiwei Liu, Decebal Constantin Mocanu. *Leave it to the Specialist: Repair Sparse LLMs with Sparse Fine-tuning via Sparsity Evolution.* [Link]

2. (Under Review) **Qiao Xiao**, Boqian Wu, Andrey Poddubnyy, Elena Mocanu, Phuong Nguyen, Mykola Pechenizkiy, Decebal Constantin Mocanu. *Addressing the Collaboration Dilemma in Low-Data Federated Learning via Transient Sparsity.* [Link]

3. (Under Review) Bram Grooten, Farid Hasanov, Chenxiang Zhang, **Qiao Xiao**, Boqian Wu, Zahra Atashgahi, Ghada Sokar, Shiwei Liu, Lu Yin, Elena Mocanu, Mykola Pechenizkiy, Decebal Constantin Mocanu. *NeuroTrails: Merging Sparse Backbones as the Key to Efficient Ensembling.* [Link]

4. (Under Review) **Qiao Xiao**, Fanghui Liu, Boqian Wu, Maurice Van Keulen, Elena Mocanu, Decebal Constantin Mocanu, Mykola Pechenizkiy. *Sharpness-driven Pruning from Transformers to LLMs: A Loss Landscape Perspective.*

5. (Under Review) Boqian Wu, **Qiao Xiao**, Maurice Van Keulen, Mykola Pechenizkiy, Shiwei Liu, Decebal Constantin Mocanu, Elena Mocanu. *Sift the Wheat from the Chaff: Push the Limit of Dynamic Sparse Training.*

WORK EXPERIENCE

Southern University of Science and Technology
Research Assistant **Apr. 2020 - Jul. 2021**

- **Supervisor:** Associate Prof. Yu Zhang
- **Topic:** Distant Transfer Learning and Semi-supervised Learning. I mainly focused on developing novel algorithms that utilize transfer learning and semi-supervised learning techniques to harness the potential of unlabeled datasets.

PingAn Tech. AI Lab
Researcher **Mar. 2018 - Mar. 2020**

- **Topic:** Text Recognition and Detection. I am responsible for implementing CRNN-based and transformer-based models in scene text recognition and detection, and deploying them to the cloud.

ACTIVITIES

- **(Tutorial)** Elena Mocanu, Zahra Atashgahi, Ghada Sokar, Boqian Wu, **Qiao Xiao**, Bram Grooten, Shiwei Liu, Decebal Constantin Mocanu. Sparse Training for Supervised, Unsupervised, Continual, and Deep Reinforcement Learning with Deep Neural Networks. **IJCAI 2023** (Macao, S.A.R) [Website] **Aug. 2023**
- Member at Reading Group organized by Google, MIT and University of Calgary **Feb.2022 - Present**
- Reviewer at NeurIPS 2025, ICML 2025, CPAL 2025, NeurIPS 2023, ICLR SNN 2023, ECAI 2023, CVPR 2021.