

# Qiao Xiao, Ph.D.

✉ [q.xiao@tue.nl](mailto:q.xiao@tue.nl)

🌐 [homepage](#)

☎ +31 626634742

🎓 [scholar](#)

🌐 [linkedin](#)

🔗 <https://github.com/QiaoXiao7282>



## Education

- Oct. 2021 – Sept. 2025 📖 **Ph.D., Eindhoven University of Technology**, Netherlands.  
Researches: *Sparse Training, Data Selection, AI Efficiency.*  
Supervisors: [Decebal Constantin Mocanu](#) and [Mykola Pechenizkiy](#)
- Sept. 2015 – Jan. 2018 📖 **M.Sc., Harbin Institute of Technology**, China.  
Faculty of Electronic and Information Engineering  
Researches: *Computer Vision, Deep Learning*
- Sept. 2010 – Jun. 2014 📖 **BEng., Shenzhen University**, China.  
Faculty of Information Engineering.

## Work Experience

- Oct. 2025 – Present 📖 **Postdoc Researcher, Eindhoven University of Technology**, Netherlands.  
Researches: *LLMs Efficiency and Safety, Model Sparsity*  
Supervisors: [Mykola Pechenizkiy](#) and [Decebal Constantin Mocanu](#)
- Jun. 2025 – Nov. 2025 📖 **Research Visitor, ETH Zurich**, Switzerland.  
Researches: *LLMs Sparse Pretraining, Model Sparsity.*  
Supervisors: [Torsten Hoefler](#)
- Jan. 2025 – Apr. 2025 📖 **Research Visitor, University of Luxembourg**, Luxembourg.  
Researches: *LLMs Efficiency, Federated Learning.*  
Supervisors: [Decebal Constantin Mocanu](#)
- Apr. 2020 – Jul. 2021 📖 **Research Assistant**, Southern University of Science and Technology.  
Researches: *I mainly focused on developing algorithms that utilize transfer learning and semi-supervised learning to harness the potential of unlabeled datasets.*  
Supervisors: [Yu Zhang](#)
- Mar. 2018 – Mar. 2020 📖 **Researcher**, PingAn Tech. AI Lab.  
Researches: *I am responsible for implementing algorithms in scene text recognition and detection, and deploying them to the cloud.*

## Research Interests

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

## Research Publications (\* indicates equal contribution)

### Conference Papers

- 1 Boqian Wu\*, **Qiao Xiao\***, Shunxin Wang, Strisciuglio Nicola, Mykola Pechenizkiy, Maurice Van Keulen, Decebal Constantin Mocanu, and Elena Mocanu, “[Dynamic Sparse Training versus Dense Training: The Unexpected Winner in Image Corruption Robustness](#),” in *ICLR*, 2025.
- 2 Boqian Wu\*, **Qiao Xiao\***, Shiwei Liu, Lu Yin, Mykola Pechenizkiy, Decebal Constantin Mocanu, Maurice Van Keulen, and Elena Mocanu, “[E2ENet: Dynamic Sparse Feature Fusion for Accurate and Efficient 3D Medical Image Segmentation](#),” in *NeurIPS*, 2024.

- 3 **Qiao Xiao**, Boqian Wu, Lu Yin, Christopher Gadzinski, Tianjin Huang, Mykola Pechenizkiy, and Decebal Constantin Mocanu, “[Are Sparse Neural Networks Better Hard Sample Learners?](#)” In *BMVC*, 2024.
- 4 **Qiao Xiao\***, Pingchuan Ma\*, Adriana Fernandez-Lopez, Boqian Wu, Lu Yin, Stavros Petridis, Mykola Pechenizkiy, Maja Pantic, Decebal Constantin Mocanu, and Shiwei Liu, “[Dynamic Data Pruning for Automatic Speech Recognition](#),” in *InterSpeech*, 2024.
- 5 Adriana Fernandez-Lopez, Honglie Chen, Pingchuan Ma, Lu Yin, **Qiao Xiao**, Stavros Petridis, Shiwei Liu, and Maja Pantic, “[MSRS: Training Multimodal Speech Recognition Models from Scratch with Sparse Mask Optimization](#),” in *InterSpeech*, 2024.
- 6 Shiwei Liu, Tianlong Chen, Xiaohan Chen, Xuxi Chen, **Qiao Xiao**, Boqian Wu, Mykola Pechenizkiy, Decebal Mocanu, and Zhangyang Wang, “[More ConvNets in the 2020s: Scaling up Kernels beyond 51x51 using Sparsity](#),” in *ICLR*, 2023.
- 7 **Qiao Xiao\***, Boqian Wu\*, Yu Zhang, Shiwei Liu, Mykola Pechenizkiy, Elena Mocanu, and Decebal Constantin Mocanu, “[Dynamic Sparse Network for Time Series Classification: Learning What to “See”](#),” in *NeurIPS*, 2022.
- 8 Feiyang Ye, Baijiong Lin, Zhixiong Yue, Pengxin Guo, **Qiao Xiao**, and Yu Zhang, “[Multi-objective meta learning](#),” in *NeurIPS*, 2021.
- 9 **Qiao Xiao** and Yu Zhang, “[Distant transfer learning via deep random walk](#),” in *AAAI*, 2021.

## Journal Articles

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

## Preprints and Under Review

- 1 **Qiao Xiao\***, Boqian Wu\*, Patrik Okanovic, Tomasz Sternal, Maurice van Keulen, Elena Mocanu, Mykola Pechenizkiy, Decebal Constantin Mocanu, and Torsten Hoefler, [Memory-Efficient LLMs Training with Dynamic Sparsity: From Stability to Practical Scaling](#). Under Review, 2026.
- 2 Boqian Wu\*, **Qiao Xiao\***, Patrik Okanovic, Tomasz Sternal, Maurice van Keulen, Mykola Pechenizkiy, Elena Mocanu, Torsten Hoefler, and Decebal Constantin Mocanu, [When Data Is Scarce: Scaling Sparse Language Models with Repeated Training](#). Under Review, 2026.
- 3 **Qiao Xiao**, Alan Ansell, Lu Yin, Boqian Wu, Mykola Pechenizkiy, Shiwei Liu, and Decebal Constantin Mocanu, [Leave it to the Specialist: Repair Sparse LLMs with Sparse Fine-tuning via Sparsity Evolution](#). arXiv:2505.24037, 2025.
- 4 **Qiao Xiao**, Boqian Wu, Andrey Poddubnyy, Elena Mocanu, Phuong Nguyen, Mykola Pechenizkiy, and Decebal Constantin Mocanu, [Addressing the Collaboration Dilemma in Low-Data Federated Learning via Transient Sparsity](#). arXiv:2506.00932, 2025.
- 5 Bram Grooten, Farid Hasanov, Chenxiang Zhang, **Qiao Xiao**, Boqian Wu, Zahra Atashgahi, Ghada Sokar, Shiwei Liu, Lu Yin, Elena Mocanu, Mykola Pechenizkiy, and Decebal Constantin Mocanu, [NeuroTrails: Merging Sparse Backbones as the Key to Efficient Ensembling](#). arXiv:2505.17909, 2025.
- 6 **Qiao Xiao**, Fanghui Liu, Boqian Wu, Maurice Van Keulen, Elena Mocanu, Decebal Constantin Mocanu, and Mykola Pechenizkiy, [Sharpness-driven Pruning from Transformers to LLMs: A Loss Landscape Perspective](#). Under Review, 2025.

## Skills

---

Languages	English, Mandarin Chinese, Cantonese.
Coding	Python (expert), C++/C (basic).
Tools	PyTorch, TensorFlow, Git, Slurm, Linux, Hugging Face.

## Grants and Funding

---

- 2025 **NWO SURF Grant**, Snellius, Netherlands  
Personal application EINF-13990 for 1 million SBU credits on the Netherlands' largest HPC.  
Amount: 15,000 GPU hours ( $\approx$  €19,500)
- 2025 **LuxProvide Compute Grant**, MeluXina HPC, Luxembourg  
Co-authored a successful grant application to Luxembourg's largest compute cluster.  
Amount: 80,000 GPU hours ( $\approx$  €104,000)
- 2024 **NWO SURF Grant**, Snellius, Netherlands  
Personal application EINF-12291 for 1 million SBU credits on the Netherlands' largest HPC.  
Amount: 15,000 GPU hours ( $\approx$  €19,500)
- 2022 **NeurIPS Travel Grant**  
Awarded a student travel grant to attend NeurIPS 2022, covering registration and accommodation.  
Amount:  $\approx$  €2,000

## Teaching and Mentoring

---

- 2025 **Teaching Assistant**, Intelligent System, Luxembourg  
I improved my teaching skills in classes of higher levels.
- 2022 **Teaching Assistant**, Machine Learning, Netherlands  
During the Education master I learned the teaching craft with this internship.
- 2025 **Supervisor**, Mustafa Ilerisoy, PhD student  
Robust distillation with model sparsity (in progress).
- 2024 **Supervisor**, Boqian Wu, PhD student  
Efficient and robust training of LLMs (in progress).

## Invited Talk

---

- Jan. 2026 **AAAI, Tutorial**, *Sparsity for Efficient, Scalable, and Robust AI: From CNNs to Generative Models.*
- Aug. 2025 **ETH, Zurich**, *Sparsity-Driven AI: Towards Greater Efficiency, Scalability, and Robustness.*
- Jul. 2025 **ParameterLab**, *Addressing the Collaboration Dilemma in Low-Data Federated Learning.*
- Aug. 2024 **TU/e**, *Dynamic Sparsity in Deep Learning: Towards Efficiency, Scalability, and Robustness.*

## Community

---

- Jan. 2026 **Organizer**. Elena Mocanu, Jafar Badour, Boqian Wu, **Qiao Xiao**, Decebal Constantin Mocanu.  
[A Decade of Sparse Training: Why Do We Still Stick to Dense Training?](#). **AAAI 2026 Tutorial**.

## Community (continued)

---

- Aug. 2023 **Organizer.** 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 Tutorial.**
- Present **Member.** Reading Group organized by Google, MIT and University of Calgary.
- 2025 **Reviewer** at ICML 2026, ICLR 2026, NeurIPS 2025, ICML 2025, CPAL 2025, NeurIPS 2023, ICLR SNN 2023, ECAI 2023, CVPR 2021.

## References

---

- Assoc. Prof. [Decebal Constantin Mocanu](#) (University of Luxembourg), [decebal.mocanu@uni.lu](mailto:decebal.mocanu@uni.lu)  
Full Prof. [Mykola Pechenizkiy](#) (Eindhoven University of Technology), [m.pechenizkiy@tue.nl](mailto:m.pechenizkiy@tue.nl)