

Zihan Weng

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Education

McGill University, Montreal, Canada	2025 – Present
Doctor of Philosophy in the Integrated Program in Neuroscience	
Advisor: Prof. Pouya Bashivan	
McGill University, Montreal, Canada	2023 – 2025
Master of Science in the Integrated Program in Neuroscience, <i>Joint dual-degree program with UESTC</i>	
Research Focus: Evaluation and Fine-tuning of Large Multimodal Models	
Advisor: Prof. Pouya Bashivan	
University of Electronic Science and Technology of China (UESTC), Chengdu, China	2022 – 2025
Master of Science in Biomedical Engineering, <i>Joint dual-degree program with McGill University</i>	
Research Focus: EMG-based Hand Fine Motor Decoding using Deep Learning	
Advisor: Prof. Peng Xu	
Northeast Electric Power University (NEEPU), Jilin, China	2018 – 2022
Bachelor of Engineering in Computer Science	

Selected Publications

Zihan Weng, Lucas Gomez, Taylor Whittington Webb, and Pouya Bashivan. “Caption This, Reason That: VLMs Caught in the Middle”. In: *The Thirty-ninth Annual Conference on Neural Information Processing Systems*. **Spotlight**, Poster. 2025

Zihan Weng, Yang Xiao, Peiyang Li, Chanlin Yi, Pouya Bashivan, Hailin Ma, Guang Yao, Yuan Lin, Fali Li, Dezhong Yao, Jingming Hou, Yangsong Zhang, and Peng Xu. “Real-time fine finger motion decoding for transradial amputees with surface electromyography”. In: *Neural Networks* (2025), p. 107605. ISSN: 0893-6080. DOI: <https://doi.org/10.1016/j.neunet.2025.107605>

Zihan Weng, Xiabing Zhang, Yufeng Mou, Chanlin Yi, Fali Li, Pouya Bashivan, and Peng Xu. “A Hybrid CNN-Transformer Approach for Continuous Fine Finger Motion Decoding from sEMG Signals”. In: *2024 IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications (CIVEMSA)* (2024). Oral, pp. 1–6

Xiabing Zhang, Chen Liu, **Zihan Weng**, Bin Lu, Fali Li, and Peng Xu. “The corticomuscular coupling underlying movement and its application for rehabilitation: a review”. In: *Brain-Apparatus Communication: A Journal of Bacomics* 2.1 (2023), p. 2183096. DOI: 10.1080/27706710.2023.2183096. eprint: <https://doi.org/10.1080/27706710.2023.2183096>

Xiabing Zhang, Bin Lu, **Zihan Weng**, Yifeng Wang, Jingming Hou, Jing Qiu, Dezhong Yao, Fali Li, and Peng Xu. “Within and between electrophysiology networks for EEG and EMG under different thumb forces”. In: *Biomedical Signal Processing and Control* 86 (2023), p. 105249. ISSN: 1746-8094. DOI: <https://doi.org/10.1016/j.bspc.2023.105249>

Chanlin Yi, Jiamin Zhang, **Zihan Weng**, Wanjun Chen, Dezhong Yao, Fali Li, Zehong Cao, Peiyang Li, and Peng Xu. “Nonparametric Dynamic Granger Causality based on Multi-Space Spectrum Fusion for Time-varying Directed Brain Network Construction”. In: *IEEE Journal of Biomedical and Health Informatics* (2024), pp. 1–10. DOI: 10.1109/JBHI.2024.3477944

Teaching & Workshops

Cognitive Benchmarking in Large Models, MAIN 2025 (Montreal AI & Neuroscience Conference) Dec 2025
Co-designed and delivered a hands-on workshop covering LLMs, Vision-Language Models, and reasoning models.

Awards and Honors

Full Doctoral Fellowship, China Scholarship Council (\$105,600)	2025 – 2029
IPN Graduate Excellence Fellowship (\$15,000)	2025 – 2028
Excellent Master’s Thesis Award (Top 2%), UESTC	2025

National Scholarship (Top 0.7% of Chinese undergraduate students), Ministry of Education, China
Presidential Scholarship (10 recipients out of 15,000 students), NEEPU

2020
2021

Technical Skills

Programming: Python, C/C++, JavaScript

ML Stack: PyTorch, HuggingFace, scientific Python ecosystem

Systems: Linux, Git, SLURM/HPC, LaTeX

Languages: Chinese (native), English