Fuqiang Liu

 Montreal, Canada   ✉ fuqiang.liu@mail.mcgill.ca   ☎ +1 438 765 4906   🔗 fuqliu.github.io

Brief Statement

I am a Ph.D. at McGill University, Canada. My research focuses on **AI safety**, specifically, to identify the potential risks hidden in powerful AI models and construct resilient solutions for practical intelligent systems. Research Expertise includes:

- Adversarial attack and defense against transformers and large language models in time series
- Foundation models of time series forecasting
- Spatiotemporal data modeling

Education

Doctor of Philosophy (Ph.D.) — Sep 2019 – Oct 2025
McGill University — *Montreal, Canada*

- Faculty: Center for Intelligent Machines & Civil Engineering
- Advisor: Prof. Lijun Sun and Prof. Luis Miranda-Moreno
- Sponsor: Fonds de recherche du Québec - Nature et technologie (FRQNT) No. 306529
- Research Area: Accurate and Reliable AI-based Intelligent Transportation System

Master of Engineering (M.Eng.) — Sep 2017 – Aug 2018
Clarkson University University — *New York, USA*

- Faculty: Electrical and Computer Engineering
- Advisor: Prof. Chenchen Liu
- Sponsor: Teaching Assistantships (TA) from Electrical & Computer Engineering Department
- Research Area: Spiking Convolutional Neural Networks based on Neuromorphic Computing

Master of Science (M.S.) — Sep 2014 – July 2016
Beijing Institute of Technology — *Beijing, China*

- Faculty: Electronic and Communication Engineering
- Advisor: Prof. Liang Chen
- Research Area: Efficient Remote Sensing Image Registration

Bachelor of Engineering (B.Eng.) — Sep 2010 – July 2014
Beijing Institute of Technology — *Beijing, China*

- Faculty: Electrical and Electronic Engineering
- GPA: 88/100 (Ranked 2nd out of 31)

Work Experience

High-Performance Computing Engineer — *June 2016 – Aug 2017*
Ricoh Research Center — *Beijing, China*

- Designed a partially-binarized VGG network (2X speedup and 4X memory saving with 20% accuracy drop)
- Implemented a compressed VGG-based multi-resolution video abstract extraction system (4X speedup)

Selected First-Author Publications

Please check the full publication list in my Google Scholar ↗.

[1] Liu, Fuqiang, et al. "Error adjustment based on spatiotemporal correlation fusion for traffic forecasting." *Information Fusion*, 2025.

[2] Liu, Fuqiang, et al. "Adversarial Vulnerabilities in Large Language Models for Time Series Forecasting." *International Conference on Artificial Intelligence and Statistics*, 2025.

[3] Liu, Fuqiang, and Sicong Jiang. "Temporally Sparse Attack for Fooling Large Language Models in Time Series Forecasting." *ICLR Workshop on Building Trust in Language Models and Applications*, 2025

[4] Liu, Fuqiang, et al. "Adversarial danger identification on temporally dynamic graphs." *IEEE Transactions on Neural Networks and Learning Systems*, 2023.

[5] Liu, Fuqiang, et al. "A universal framework of spatiotemporal bias block for long-term traffic forecasting." *IEEE Transactions on Intelligent Transportation Systems*, 2022.

[6] Liu, Fuqiang, and Chenchen Liu. "Towards accurate and high-speed spiking neuromorphic systems with data quantization-aware deep networks." *Proceedings of the 55th Annual Design Automation Conference* (**Oral**), 2018.

[7] Liu, Fuqiang, et al. "Feature-area optimization: a novel SAR image registration method." *IEEE Geoscience and Remote Sensing Letters*, 2016

Academic Reviewer

AI Conferences:

Conference on Neural Information Processing System (NeurIPS)	*2022 - 2025*
International Conference on Machine Learning (ICML)	*2022 - 2024*
International Conference on Learning Representation (ICLR)	*2024*
International Conference on Artificial Intelligence and Statistics (AISTATS)	*2025 - 2026*
Conference on Language Modeling (COLM)	*2025*
International Joint Conferences on Artificial Intelligence (IJCAI)	*2023 - 2024*

Journals:

IEEE Transactions on Neural Networks and Learning System	*2022 - 2025*
IEEE Transactions on Fuzzy System	*2024*
IEEE Transactions on Intelligent Transportation System	*2023*
Information Fusion	*2024 - 2025*
Transportation Research Part C	*2020*
Pattern Recognition	*2025*

Professional Skills

Experienced in C/C++, Python, Pytorch, Tensorflow, Docker

AWARDS & HONORS

"Best Reviewer Award"	4/2025
AISTATS	*Mai Khao, Thailand*
"Doctoral Research Scholarship B2X"	4/2021
Fonds de recherche du Québec	*Montreal, Canada*
"Engineering Doctoral Award"	9/2019
McGill University	*Montreal, Canada*