

Xin Qiao

Ph.D. Candidate, Memorial University
St. John's, NL, A1B 3X5, Canada
(709)-986-6791 | xqiao@mun.ca | [linkedin.com/in/xin](https://www.linkedin.com/in/xin)

EDUCATION

Memorial University of Newfoundland

Ph.D. Candidate in Electrical Engineering

NL, Canada

Sep. 2021 – Present

Zhejiang University

Master in Engineering

ZJ, China

Sep. 2018 – Jun. 2021

Dalian Maritime University

Bachelor in Engineering

LN, China

Sep. 2014 – Jun. 2018

EXPERIENCE

Research Internship

Verafin, Mitacs Accelerate Program

Sep. 2022 – Dec. 2022

NL, Canada

- Develop a transformer-based model for credit card fraud detection

PROJECTS

New Transformer-Based Methods for Hyperspectral Image Classification

Memorial University, Seed, Bridge and Multidisciplinary Fund Project

Jun. 2023 – Jun. 2025

NL, Canada

- Develop a novel transformer-based network to implement the extraction of multi-scale spatial features
- Rethink HSIs feature extraction from the frequency domain and design a frequency domain transformer network for HSIs classification

PUBLICATIONS

Journal

1. **X. Qiao**, and W. Huang, "WaveTransNet: A Transformer-Based Network for Global Significant Wave Height Retrieval From Spaceborne GNSS-R Data," *IEEE Trans. on Geosci. and Remote Sens.*, vol. 62, 2024, Art. no. 4208011.
2. **X. Qiao**, S. K. Roy, and W. Huang, "3-D Sharpened Cosine Similarity Operation for Hyperspectral Image Classification", *IEEE J. Sel. Topics Appl. Earth Observ. Remote Sens.*, vol. 17, pp 1114-1125, 2024.
3. **X. Qiao**, and W. Huang, "A Dual Frequency Transformer Network for Hyperspectral Image Classification," *IEEE J. Sel. Topics Appl. Earth Observ. Remote Sens.*, vol. 16, pp 10344-10358, 2023.
4. **X. Qiao**, S. K. Roy, and W. Huang, "Multiscale Neighborhood Attention Transformer With Optimized Spatial Pattern for Hyperspectral Image Classification," *IEEE Trans. on Geosci. and Remote Sens.*, vol. 61, 2023, Art. no. 5523815.
5. **X. Qiao**, S. K. Roy, and W. Huang, "Rotation is All You Need: Cross Dimensional Residual Interaction for Hyperspectral Image Classification," *IEEE J. Sel. Topics Appl. Earth Observ. Remote Sens.*, vol. 16, pp 5387-5404, 2023.
6. M. Tang, Z. Tang, **X. Qiao**, K. Lang, Y. Sun, and X. Wang, "Extension of refocus depth range in digital holographic microscopy," *Appl. Opt.*, vol. 59, pp 8540-8552, 2020.
7. Y. Sun, H. Cai, **X. Qiao**, and X. Wang, "High-performance polarization control modulated surface plasmon resonance sensor based on monolayer graphene/Au-NPs architecture for detection of DNA hybridization," *Meas. Sci. and Technol.*, vol 30, 2019.

Conference

1. **X. Qiao**, and W. Huang, "An Attention-Aided Convolutional Neural Network for Global Sea Surface Wind Speed Estimation from GNSS-R Data," *Proc. IEEE Int. Geosci. Remote Sens. Symp.*, Athens, Greece, Jul. 2024.
2. **X. Qiao**, and W. Huang, "Global Significant Wave Height Retrieval From Spaceborne GNSS-R Using Transformers," *OCEANS 2024-MTS/IEEE Singapore*, Apr. 2024.
3. **X. Qiao**, S. K. Roy, H. Wu, and W. Huang, "Hyperspectral image classification based on 3d sharpened cosine similarity operation," *Proc. IEEE Int. Geosci. Remote Sens. Symp.*, Pasadena, California, USA, Jul. 2023, pp 7669-7672.

4. **X. Qiao**, and W. Huang, "Spectral-Spatial-Frequency Transformer Network for Hyperspectral Image Classification," *Proc. IEEE Sensors Appl. Symp.*, Ottawa, Canada, Jul. 2023, pp. 1–6.
5. **X. Qiao**, and W. Huang, "Hyperspectral Image Classification Using Multi-scale Neighborhood Attention Transformer," *IEEE NECEC Conference*, St. John's, Canada, Nov. 2023.
6. **X. Qiao**, and W. Huang, "Sharpened Cosine Distance Convolutional Network for Hyperspectral Image Classification," *IEEE NECEC Conference*, St. John's, Canada, Nov. 2022.
7. **X. Qiao**, M. Tang, Z. Tang, K. Lang, and X. Wang, "Classification of phytoplankton digital holograms using transfer learning," *Seventh Symp. on Novel Photoelectronic Detection Technol. and Appl.*, Vol. 11763, SPIE, 2021.
8. Z. Tang, M. Tang, **X. Qiao**, K. Lang, and X. Wang, "Research on improving reconstruction quality from holograms of marine algae in digital holographic microscopy," *Seventh Symp. on Novel Photoelectronic Detection Technol. and Appl.*, Vol. 11763, SPIE, 2021.
9. Y. Sun, H. Cai, **X. Qiao**, B. Zhang, S. Zhan, and X. Wang, "Axial spatial refractive index distribution of surface plasmon resonance sensor based on multi-wavelength angular interrogation structure," *Opt. Sensors*, Vol. 11028, SPIE, 2019.

AWARDS

- Best Student Poster Paper Competition Finalist, MTS/IEEE Oceans Conference, Singapore, 2024
- Chinese Government Award for Outstanding Self-financed Students Abroad, China Scholarship Council, 2023
- Research Excellent Award, Graduate Student Union, Memorial University, 2023
- Best presenter from the Electrical & Computer Engineering Session (Oral), 24th Annual Aldrich Multidisciplinary Conference, Memorial University, Nov. 2023.
- Wally Read Best Student Paper Award, 31st IEEE Newfoundland Electrical and Computer Engineering Conference (NECEC), St. John's, Canada, Nov. 2022.

SERVICES

- Reviewer, IEEE Transactions on Geoscience and Remote Sensing (TGRS)
- Reviewer, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)
- Reviewer, Frontiers in Marine Science
- Remote Sensing Session Chair, IEEE Sensors Applications Symposium, Ottawa, Canada, Jul. 2023.

TECHNICAL SKILLS

- Programming Language: Python, MATLAB, C
- Deep Learning Framework: Pytorch, Keras, TensorFlow
- Misc: LaTeX