

Yifan Qu – Curriculum Vitae

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Education

University of Toronto

Ph.D. Computer Science

- Supervisor: Professor Christina Christara

Toronto, ON, Canada

2025 – present

University of Waterloo

B.Sc. Honours Applied Math and Computational Math, Co-op Program (Dean's Honour)

Waterloo, ON, Canada

2020 – 2025

Publications

- P1. **Yifan Qu**, Armina Soleymani, Denise Sudom and Katharine Andrea Scott. “Learnable Weight Graph Neural Network for River Ice Classification”, Proceedings 2024, 110(1), 30; <https://doi.org/10.3390/proceedings2024110030> [pdf]
- P2. Denise Sudom, Corwin MacMillan, Armina Soleymani, **Yifan Qu** and K. Andrea Scot “Penalty and Penalty-Like Methods for HJB PDEs”, Proceedings of the 23rd Workshop on the Hydraulics of Ice Covered Rivers. CGU HS Committee on River Ice Processes and the Environment (CRIPE), St. John's. [pdf]
- P3. **Yifan Qu** and Armina Soleymani. “Enhanced Underwater Image Dehazing Using an Improved Dark Channel Prior Method”, Preprint Available at SSRN: <https://ssrn.com/abstract=5004880>. [pdf]
- P4. **Yifan Qu**, Oliver Krzysik, Hans De Sterck, and Omer Ege Kara. “First-order PDES for Graph Neural Networks: Advection And Burgers Equation Models”, Preprint available at: arXiv:2404.03081 [pdf]

Talks

- T1. *Learnable Weight Graph Neural Network for River Ice Classification*, presented at the 2024 Geoinformatics, August 15, 2024, Toronto Metropolitan University, Toronto, ON, Canada.

Awards

Undergraduate Level

Mathematics Undergraduate Research Award (\$6,000)

2023

University of Waterloo President's Scholarship (\$2,000)

2020

Research Experience

Intern, Department of Mechanical and Mechatronics Engineering at University of Waterloo Jan. 2024 - Sept. 2024

Supervisor: Professor Andrea Scott

- Worked on GNN-based method for river ice classification to support automated monitoring in Montreal.

Intern, Department of Applied Mathematics at University of Waterloo

Apr. 2023 - Sept. 2023

Supervisor: Professor Hans De Sterck

- Worked on first-order partial differential equations and graph neural networks to handle over-smoothing problems and enhance performance in deep graph neural network architectures.

Intern, Institute Of Semiconductors, Chinese Academy of Science

Sept. 2021 - Dec. 2021

Supervisor: Professor Xinwei Wang

- Worked on dark channel prior based underwater image dehazing methods.

Teaching Experience

Teaching Assistant, University of Waterloo

2022

I have been a Teaching Assistant (TA) at University of Waterloo for three (3) terms, and my responsibilities involved grading, and answering students questions for the following courses:

- Math 115 (Linear Algebra), Sep - Dec 2022, Jan - Apr 2023, Sep - Dec 2023.

Other Work Experience

Data Scientist, Beijing StarViewer Technology

Jan – Aug 2025

Image Algorithm Engineer, Aqrose Technology

May – Aug 2022