# Victor (Yanfei) Wei

## CONTACT INFORMATION

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## EDUCATION

**McGill University, Montreal** Sep. 2020 – May 2023

B. Sc in Joint Honors Physics and Computer Science

CGPA 3.92/4.00

## RESEARCH EXPERIENCE

**Institute for Quantum Computing, University of Waterloo** May 2023 – Present

Undergraduate Research Assistant / Group Project Manager

- Supervised by Prof. Christine Muschik, collaborated with Quantum Optics and Spectroscopy group at University of Innsbruck.
- Worked on experimentally relevant variational state reconstruction with randomized measurements.
- Group project manager.

**Department of Physics, McGill University** Sep. 2022 – Apr. 2023

Undergraduate Thesis Project

- Supervised by Prof. Christine Muschik (Waterloo), Prof. Pooya Ronagh (Waterloo), and Prof. Bill Coish (McGill).
- Worked on neural network quantum state tomography with classical shadows.
- Manuscript submitted.

**Institute for Quantum Computing, University of Waterloo** May 2022 – Aug. 2022

Undergraduate Research Assistant

- Supervised by Prof. Christine Muschik, collaborated with Prof. Randy Lewis and IBM Quantum.
- Worked on experimental simulation of fundamental interactions with a quantum computer.
- Manuscript accepted by Physical Review Research.

**Department of Physics, McGill University** May 2021 – Apr. 2022

Undergraduate Research Assistant

- Supervised by Prof. Bill Coish.
- Worked on excited states and linear response dynamics with neural network quantum states.
- Manuscript accepted by Wiley's Advanced Physics Research as Editor's Choice.

## PUBLICATIONS

[1] **Victor Wei**, Alev Orfi, Felix Fehse, and William A. Coish, "Finding the Dynamics of an Integrable Quantum Many-Body System via Machine Learning", Advanced Physics Research, 2300078 (2023). (Editor's Choice)

[2] **Victor Wei**, William A. Coish, Pooya Ronagh, and Christine A. Muschik, "Neural-Shadow Quantum State Tomography", arXiv preprint arXiv:2305.01078 (2023). (Submitted and under review)

[3] Y. Y. Atas, J. F. Haase, J. Zhang, **V. Wei**, S. M.-L. Pfaendler, R. Lewis, and C. A. Muschik, "Simulating one-dimensional quantum chromodynamics on a quantum computer: Real-time evolutions of tetra- and pentaquarks", Phys. Rev. Research 5, 033184 (2023).

## RESEARCH PRESENTATIONS

**Perimeter Institute Quantum Intelligence Lab (PIQuIL) Seminar – Perimeter Institute, Waterloo**

- Nov. 10th, 2023. In-person talk.

**Transdisciplinary Institute for Quantum Information (INTRIQ) Fall 2023 Meeting – Montreal**

- Oct. 17th to Oct. 18th, 2023. Poster presentation.

**Coherent Quantum Dynamics – OIST, Okinawa**

- Sep. 26th to Oct. 5th, 2023. Poster presentation.

**Machine Learning for Quantum Many-Body Systems – Perimeter Institute, Waterloo**

- Jun. 12th to Jun. 16th, 2023. Poster presentation.

**Quantum Simulators of Fundamental Physics – Perimeter Institute, Waterloo**

- Jun. 5th to Jun. 9th, 2023. Poster presentation.

## AWARDS AND HONORS

**E. R. Pounder Prize in Physics – McGill University, Montreal**

- Awarded in 2021, valued at $395 CAD.

**Dean's Honor List – McGill University, Montreal**

- Awarded in 2021.

**Excellence Bursary for Computer Science – McGill University, Montreal**

- Awarded in 2021, valued at $1000 CAD.

**NSERC Undergraduate Research Award – McGill University, Montreal**

- Awarded in 2021, valued at $6000 CAD.

**J. W. McConnell Scholarship – McGill University, Montreal**

- Awarded in 2020, 2021, and 2022, valued at $5000 CAD per year.

## SKILLS

**Programming Languages**

- Python, C++, Julia, Java, Mathematica, Matlab, LaTeX.

**Languages**

- Proficient or native: English, Mandarin Chinese.