ANTHONY WROBLEWSKI

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SUMMARY

I am an eager to learn second years student in a unique B.Sc. program dedicated to Quantum Information Science. Driven by the desire to know and understand, I have made it my mission to help paved the gap between quantum theory and real-world applications. I am a firm advocate of hard work over innate talent and believe that the most valuable skill is ability to learn.

ACADEMIC BACKGROUND

B.Sc. in Quantum Information Science

Université de Sherbrooke

📅 Sept. 2024 - May. 2027   📍 Sherbrooke, Canada

- New interdisciplinary bachelor's program (Physics, Mathematics, Computer Science) designed to train quantum algorithm developers.
- Core coursework in Quantum Information, Quantum Algorithms, and Quantum Mechanics, with multiple project-based courses.
- Additional coursework in Project Management, Entrepreneurship in STEM, and professional development.

WORK EXPERIENCE

Research Assistant in Quantum Chemistry

University of Sherbrooke – Armand Soldera's Group

📅 Apr. 2025 - Jul. 2025   📍 Sherbrooke, Canada

- Performed molecular simulations of polymer systems using classical computational methods on Compute Canada HPC clusters.
- Developed and implemented fermionic translation operators using a mix of creation/annihilation operators and Trotter's algorithm.
- Analyzed and validated simulation and algorithmic results in a research-oriented environment.
- **Technologies used**: Python · Qiskit · LAMMPS · Compute Canada HPC · Git

College Research Internship in Chemistry

Cégep de Sherbrooke

📅 Jul. 2024   📍 Sherbrooke, Canada

- Performed laboratory experiments as part of a research project in materials and polymer chemistry under Prof. Pierre Baillargeon.
- Prepared samples, followed experimental protocols, and applied laboratory safety procedures.
- **Technologies used**: X-ray Diffraction (XRD) · Infrared Spectroscopy (IR) · High-Performance Liquid Chromatography (HPLC)

STRENGTHS

Autonomy   Communication   Curiosity   Teamwork

Quantum Chemistry
Quantum Variational Algorithms
Quantum Annealing

Qiskit   Git   LaTeX

PROGRAMMING

Python   ●●●●○

C++   ●●●○○

Java   ●●◑○○

LANGUAGES

French   ●●●●◑

English   ●●●●○

AWARDS & SCHOLARSHIPS

- Laboratory Work Scholarship for Chemistry Internship (2024)
- Faculty Entrance Scholarship for Academic Excellence, based on college results (2024)
- Selected as Cadet of the Camp among 2,500 Air Cadets (2019)
- Athlete of Excellence Award – Men's Youth Volleyball (2022)
- Student-Athlete Award – Men's Collegiate Volleyball (2024)

WORK EXPERIENCE (CONT.)

Intervention Officer (Safety & Support)
Val-du-Lac Rehabilitation Center (Public Healthcare Network)

📅 May 2023 - Present 📍 Quebec, Canada

- Student job at a residential rehabilitation and care facility within the public healthcare system.
- Ensured safety and well-being of residents through monitoring, de-escalation, and intervention support.
- Responded to crisis situations and assisted healthcare staff during incidents.
- Communicated effectively with multidisciplinary teams in a high-responsibility environment.
- Applied strict protocols related to safety, confidentiality, and ethical conduct.
- **Skills developed**: Crisis management · Communication · Teamwork · Responsibility

OTHER QUALIFICATIONS

- National Lifeguard Certification (Pool and Waterfront)
- Basic First Aid Certification
- Advanced First Aid and CPR Certification
- Training in Crisis Intervention and De-escalation Techniques (public healthcare setting)

NOTABLE PROJECTS

Quantum Chemistry – QAOA for Ground-State Estimation
Course Project

📅 Fall 2025 📍 Sherbrooke, Canada

- Implemented QAOA and Adapt-QAOA as a proof of concept for molecular ground-state energy estimation using the LiH molecular Hamiltonian, evaluating the applicability and limitations of QAOA beyond combinatorial optimization frameworks.

Quantum Optimization - Rydberg Atom Simulations
Course Project

📅 Fall 2025 📍 Sherbrooke, Canada

- Studied and optimized a Pulser-based code to understand analog quantum simulations with neutral atoms, exploring annealing pulse design, system emulation with Qutip, and evaluation of Maximum Independent Set solutions.

Quantum Simulation - Trotterization of Time-Independent Hamiltonians
Course Project

📅 Winter 2024 📍 Sherbrooke, Canada

- Implemented Trotterization methods to approximate and estimate the time evolution of a time-independent Hamiltonian, and analyzed the accuracy and limitations of the approach for quantum simulation.

Quantum Chemistry - VQE for Molecular Ground-State Estimation
Course Project

📅 Winter 2024 📍 Sherbrooke, Canada

- Implemented the Variational Quantum Eigensolver (VQE) from fermionic creation and annihilation operators using the Jordan–Wigner mapping, and validated its functionality by estimating the ground-state energy of the dihydrogen (H_2) molecule.