

HARSHANA RUNJEET

2751, rue Crépeau, Sherbrooke, QC, J1E 3Y6

Tel. (+1) 438-341-1693

harshanar.jdb.382@gmail.com, runh1501@usherbrooke.ca

SKILLS

- Bsc. Physics
- Python (Advanced), C++ (In progress)
- Contribution to SCIL github repository-quantum Tractography project
- Vulgarization of scientific projects
- Version control with Git and code sharing on GitHub
- Bilingual (French/English)
- Medical Imaging
- Qiskit – Quantum Variational Algorithms
- Condensed matter physics

PHYSICS AND COMPUTER SCIENCE EXPERIENCE:

Summer School:

TOPOLOGICAL EXCITED STATES AND NON-CRYSTALLINE SYSTEMS,
UNIVERSITY OF THE BASQUE COUNTRY, SPAIN (SUMMER 2025)

Internships:

QUANTUM ALGORITHM DEVELOPER: MITACS GLOBALINK & FRQNT AWARD,
LTS5, ÉCOLE POLYTECHNIQUE DE LAUSANNE, SWITZERLAND (FALL 2024)

- Developed new ideas for implementing Quantum Algorithms to Tractography classical algorithms (Python, IBM-Qiskit)
- Elaborated research questions on how to scale up QAOA performances on large-scale graphs
- Learnt on theoretical aspects of Ising Hamiltonians
- Worked with computational aspects of parametrized optimisation such as evaluation of cost landscapes for a compact set of parameters
- Reflected on how to construct graph with diffusion imaging data
- Scientific presentations and writings of my work

QUANTUM ALGORITHM DEVELOPER (QAOA),
SCIL GROUP, UNIVERSITÉ DE SHERBROOKE (WINTER 2024)

- Used of scilpy library and Qiskit-IBM library
- Learnt of diffusion MRI theory and tractography
- Applied quantum computing in neuroinformatics, focusing on combinatorial problems in graphs (Shortest path, QUBO, Ising Hamiltonian, NP-hard problems)
- Presented Scientific talks and scientific reports
- Contributed to Github in automatization of process: from random adjacency matrix to running QAOA and output of the optimal path in graph (Python)

RESEARCH ASSISTANT IN SEMICONDUCTOR PHYSICS,

PR.MATHIEU JUAN'S GROUP, QUANTUM INSTITUTE (COOP TO, SUMMER 2023)

- Programmed 3D simulation software QTCAD and Gmsh with Python
- Analysed theoretical and experimental comparative tests
- Learnt about semiconductor physics
- Wrote scientific reports

Work experience in Computer Science:

TEACHER - ANIMATOR,

ÉCOLES ESTIME, OBNL (2024- 2025)

- Did one-hour animations of Scratch Activities to kids from 6-12 years old
- Vulgarized informatics concepts like loop, variables and conditions

ADMINISTRATIVE AND LOGISTICS EXPERIENCE:

ADMINISTRATIVE ASSISTANT,

SAATVIK CUISINE VÉGÉ, FAMILY BUSINESS (2018-ONGOING)

- Automated recipe calculations via Excel
- Managed financial reports and expense tracking lists
- Prepared payroll sheets
- Researched concepts in finance and investments

LIBRARIAN:

BIBLIOTHÈQUE GEORGETTE-LEPAGE, BROSSARD (2020-2022)

- Welcomed and assisted users
- Took care of book loans and returns
- Classified books and documents according to the Dewey Decimal Classification
- Organised Activities and Animations for kids

EDUCATION :

BACHELOR OF PHYSICS,

UNIVERSITÉ DE SHERBROOKE, SHERBROOKE, QC (AOÛT 2022 – ONGOING)

- GPA: 3.5/4.0. Relevant courses: Quantum Mechanics III, Subatomic physics, General Relativity, Quantum Computing and Information, Group Theory for condensed matter physics, Riemann Surfaces research etc.

COLLEGE DIPLOMA IN PURE AND APPLIED SCIENCES,

CEGEP ÉDOUARD-MONTPETIT, LONGUEUIL, QC (2020 – 2022)

- Relevant projects: Creation of a classic video game in HTML and JavaScript
- Relevant courses: Introduction to Theoretical Physics, Multivariable Calculus

SCHOLARSHIPS :

- QSciTech Scholarship for a research internship on quantum wells in semiconductors
- Algo-Lab Scholarship for a quantum computing application internship in quantum tractography
- MITACS Globalink Research Award Abroad with partnership FQRNT (Internship at EPFL, Switzerland in Signal Processing Laboratory)
- Bourse d'études Desjardins (Fall 2025 semester)

PROJECTS AND WRITING:

GitHub : [harshana20011 \(github.com\)](https://github.com/harshana20011) ,

Chronicles :

[Harshana Runjeet, auteur sur Le Val-Ouest,](#)

[Tracer la route de l'information dans le cerveau avec QAOA - Institut quantique - Université de Sherbrooke](#)

Summer School Certificate :

[resume/cert-A-Z17-25-90354-37.pdf at main · harshana20011/resume](#)

Project article for Initiation to Research : Solutions to KP equation with Riemann Surfaces

[resume/runh1501_H2025_rapport_final_KP.pdf at main · harshana20011/resume](#)
