

QUI LOC PHAN

ENS & Dauphine - PSL

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Vietnamese

Education

Université PSL & Université Paris-Saclay

2023 – 2025

Master of Computer Science - Operations Research, **Rank 6th/20 (1st year)**

Paris, France

Ho Chi Minh University of Education

2019 – 2023

Honours Bachelor of Mathematics - Combinatorics, **Rank 1st/300**

Ho Chi Minh, Vietnam

Experience

ENSTA Paris, IPParis

May 2024 – Aug 2024

Research Intern

Paris, France

- Study quantum optimization, construct efficient ansatz for near-term variational algorithms to address those problems
- Create a method for encoding Hamiltonian of binary optimization problems into gate-based quantum computers

QUACS, INRIA Saclay

Feb 2024 – Apr 2024

Research Student

Paris, France

- Study Quantum Fast-Forwarding on Markov Process, applications in decision and graph optimization problems
- Simulate Spatial Search problem on different types of graphs, compare efficiency between quantum and classical scheme

Vietnam Academy of Science and Technology

May 2023 – Aug 2023

Research Scholar

Ha Noi, Vietnam

- Study mathematical foundation of Structural Equation Modeling, focus on statistical optimization and factor analysis
- Construct mathematical structure for model estimation and assessment, discover potential risks in quantitative analysis

Laboratory of Computer Algebra, HCMUE

10 months

Research Intern

Ho Chi Minh, Vietnam

- Study fundamental aspects of combinatorics and abstract algebra, model and address combinatorial problems
- Design or develop, and evaluate algebraic algorithms both in theory and practice mathematically

Project

Quantum Machine Learning

2024

- Implement Variational Quantum Eigensolver, evaluate performance with different optimizers and hyperparameters
- Build Variational Quantum Classifier for IBM-birds dataset, evaluate on different types of hardware-efficient ansatz

Deep Learning in Computer Vision

2024

- Build and deepen network with more layers and variational SGDs, reach accuracy 97% from 92% on MINIST dataset
- Build VAE (without and with CNN) and GAN to generate images, evaluate performance with different hyperparameters

Quantum Combinatorial Optimization

2023

- Code end-to-end variant QAOA algorithms for QUBO, test performance with different number of layers and parameters
- Study different heuristic optimizations (COBYLA and Genetic) on cost function and test on various QUBO problems

Technical Skill

Language: Vietnamese (Native), English (C1), French (currently study B1)

Programming Language: Python (2 years), C++ (1 year), Matlab (2 years)

Quantum Frameworks: Qiskit, Cirq

Solver: CPLEX, Gurobi

Achievement (from 2019)

- Excellence scholarships from ENS + IPParis + HCMUE, with addition 3 yearly national merit awards
- Full scholarship to European Quantum Technology Summer School 2024, by Centre Européen de Sciences Quantiques
- Mathematics: 1 silver medal + 1 bronze medal in national competitions, 2 gold medals in regional competitions
- Informatics: top 3%/2000 in Quantum IBM Challenge, 1 bronze medal in regional competition
- Research: 2 silver medals + best thesis award in university contests, 2 poster presentations at international workshops