Qui Loc PHAN

ENS & Dauphine - PSL | qui-loc.phan@dauphine.eu | locphan2001.github.io | 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

Dassault Systèmes **Mar 2025 – Sep 2025**
Research Intern (Incoming) *Paris, France*

- Study variational and annealing algorithms on quantum computers for combinatorial optimization and machine learning
- Explore their current challenges and develop these methods, compare them to classical solvers and different hardwares

ENSTA Paris, IPParis **May 2024 – Aug 2024**
Research Intern *Paris, France*

- Study how to construct efficient ansatz for variational algorithms to address binary polynomial optimization problems
- Create ansatz for encoding those problems into gate-based quantum computers with minimal number of CNOT gates

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 European Center for Quantum Sciences
- 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

Updated: October 2024