Qui Loc PHAN

ENS & Dauphine - PSL | qui-loc.phan@dauphine.eu | linkedin.com/in/loc2001 | 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 combinatorial optimization on gate-based quantum computers, construct efficient ansatz for these problems
- Code end-to-end solution dealing with binary polynomial optimization problems, test performance on different templates

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, optimize quantum circuit on various environments

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 (1.5 years), C++ (1 year), Matlab (2 years) **Solver**: CPLEX, Gurobi

Achievement (from 2019)

- Excellence scholarships for all school years (ENS + IPParis + HCMUE), with addition 3 yearly national merit awards
- Mathematics: 1 silver medal + 1 bronze medal in national competitions, 2 gold medals in regional competitions
- Informatics: top 3%/2000 in International IBM Challenge, 1 bronze medal in regional competition
- Research: 2 silver medals + best thesis award in university contests, 2 poster presentations at international workshops
- Full travel grants: 1 European summer school, 2 French summer schools

Reference

M1 IPParis: Prof. Andrea Simonetto & Prof. Sourour Elloumi (intern co-supervisors), Res. Marcella Bonazzoli (lecturer)