Qui Loc PHAN

Dauphine & Mines Paris, PSL | qui-loc.phan@dauphine.eu | locphan2001.github.io | Vietnamese

Education

Dauphine - PSL & Mines Paris - PSL **2023 – 2025**

Master of Computer Science for Decision and Management *Paris, France*

- Awarded Excellence Scholarship from partner institution ENS Paris Saclay and ENS Paris for 2 consecutive years
- Data Science (18.5/20), Industrial Management (17/20), Integer Programming (16/20), Machine Learning (16/20)

Ho Chi Minh University of Education **2019 – 2023**

Honours Bachelor of Mathematics *Ho Chi Minh, Vietnam*

- Graduated with Valedictorian Achievement (rank 1st/150)

Experience

Dassault Systèmes **Mar 2025 – Sep 2025**

Research Intern *Vélizy-Villacoublay, France*

- Study quantum optimization algorithms for constraint programming: Tree-Search, Branch-and-Bound, Branch-and-Cut
- Develop and implement for practical use cases in long-term, explore near-term challenges, conduct comparative analysis
- Practical case study on Healthcare Staff Scheduling at Paris Saint-Joseph Hospital with multi-objectives

Pôle Aide à la Décision, LAMSADE, Dauphine - PSL **Mar 2025 – Jun 2025**

Research Student *Paris, France*

- Thoroughly study the connection of operations research and AI challenges, make minor scientific contribution
- Research Project 1 (5 ECTS): Explainable AI with new methods in multi-criteria decision analysis
- Research Project 2 (5 ECTS): Graph-based energy minimization methods in computer vision

Optimization and Control Team, UMA, ENSTA Paris - IPParis **May 2024 – Aug 2024**

Research Intern *Palaiseau, France*

- Study how to optimize resources used in quantum circuit with two objectives: number of gates and depth of circuit
- Understand and constuct mathematical programming model and graph optimization model for the problems
- Design heuristics algorithms that produce good solutions and benchmark the results with available open-source libraries

QUACS, INRIA Saclay **Feb 2024 – Apr 2024**

Research Student *Palaiseau, France*

- Thoroughly study the connection of operations research and quantum computing, make minor scientific contribution
- Research Project (5 ECTS): Quantum Markov process for decision-making problems

Algebra Group of Research, 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

Production Problem **2024**

- Construct mathematical programming model for the resource allocation problem, inspired from the Flowshop Scheduling
- Implement Campbell - Dudek - Smith algorithm, with variant on preprocessing stage and postprocessing stage
- Perform clustering algorithms on preprocessing and local search methods on postprocessing to improve the solution

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**

- Encode the mathematical programming model of Max-Cut and Maximum Independent Set into quantum computers
- Code end-to-end QAOA algorithms for the problem, test performance with different number of layers and parameters
- Benchmark with evolutionary algorithms on cost function and introduce some heuristic function for better solutions

Technical Skill

Language: Vietnamese (Native), English (C1), French (Expected DELF B2 at the end of 2025)
Programming Language: Python (2 years), C++ (2 years), Matlab (2 years)
Solver: GLPK, CPLEX, Gurobi

Achievement (from 2019)

- Mathematics: 1 silver medal + 1 bronze medal in national competitions, 2 gold medals in regional competitions
- Informatics: top 3%/2000 in Quantum Operations Research Challenge (organized by IBM)

Updated: May 2025