VELARD Quentin

Engineer in Applied Mathematics
Mines Nancy Engineering Department,
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Quentin Velard
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Education

•**Master of Engineering Degree in applied mathematics at Mines Nancy Engineering Department**
Nancy, France

- **Applied maths department course work:** Quantitative Finance - Stochastic calculus - Time series Analysis: Stationary Models (AR, MA, ARMA) and Non-Stationary Models (ARIMA, SARIMA) - Monte-Carlo Method and Application to Random Processes - Data Analysis - Partial Differential Equations - Machine Learning (linear and logistic regression, ridge, lasso, K-means, Bayesian classifier, bagging and boosting, support vector machines) using Keras - Deep Learning (gradient descent, CNN, RNN, padding, backpropagation, regularization using Keras)
- **Common core courses:** Numerical analysis - Probabilities - Statistics - Quantum Mechanics - Statistical Physics - Continuum Mechanics - General Economy

•**Master of Mathematical Engineering for Data Science at University of Lorraine** *September 2024 - June 2025*
Nancy, France

•**Bachelor of Science at Sorbonne University** *September 2018 - June 2021*
Paris, France

Preparatory Coursework for Engineering Schools. Three years of intensive and advanced courses in mathematics, physics and chemistry dedicated to the preparation for the highly competitive entrance examinations to French Engineering schools. Ranking: 676 out of 3494 candidates (Mines-Ponts PC 2021).

Experience

•**RMIT University Laboratory** *February 2024 - July 2024*
Quantum Machine Learning Intern Melbourne, Australia

Research work involves collaborating with researchers and doctoral candidates on machine learning algorithms for quantum computers. The focus includes Quantum Kernel Machine Learning, PyTorch qGan Implementation, Quantum Autoencoder, Variational Quantum Eigensolver, Quantum Approximate Optimization Algorithm, and CHSH inequality. Libraries such as PaddlePaddle and IBM Qiskit.

•**Bpifrance, Corporate and Investment Banking** *June 2023 - December 2023*
R&D Analyst Intern Paris, France

Venture capital for digital R&D projects to deploy French government strategies (energy transition and reindustrialization of the country). This role immerses you in upcoming digital initiatives, involving their execution and integration within France's financial strategies: electronics, blockchain, cloud, 5G, quantum, AI and cybersecurity.

Projects

–**Barrier option pricing uses branching processes**
Academic project *September 2022 - May 2023*

9-month academic project learning vanilla and exotic option with a focus on barrier option pricing and numerical simulation based on Notes on Stochastic Finance by Nicolas Privault and Barrier Option Pricing by Branching Processes by Georgi Mitov and all. **Tools:** Python & Excel to simulate Galton-Watson process and Branch Process on Random Environment.

Technical Skills and Interests

Languages: Native in French, Fluent in English (IELTS 7/9)
Tools: Python (Numpy, Pandas, Matplotlib, Scikit-learn, Qiskit, PaddlePaddle, Beautifulsoup), machine learning on PyTorch and Tensorflow, R, Microsoft Office Suite, MATLAB, SQL, Excel-VBA, Git/Github

Positions of Responsibility

–**Student Scientific Convention on Hydrogen** *November 2023*

Participation in a student and industry professionals' convention on hydrogen: engaging in discussions, debates, and collaborative efforts on key issues. Attended conferences with renowned experts, interacted with industry professionals, and actively participated in practical workshops.

Volunteer, The Shift Project

* The Shift Project is a French think tank advocating the shift to a post-carbon economy. As a non-profit organization committed to serving the general interest through scientific objectivity, they are dedicated to informing and influencing the debate on energy transition in Europe.

Director of New Student Orientation Weeks *January 2021 - September 2022*

Hobbies

· **Sport:** Half marathon (Paris, Nancy), gym, trekking, mountaineering

· **Music :** Head of Mines Nancy's DJ Association (Sonomines), electronic music production