Malo Leroy

Seeking a 6-month IT or Research internship in Quantum Computing – Available February – August 2026

malo.leroy@student-cs.fr +33 7 67 55 35 14 linkedin.com/in/leroy-malo github.com/maloleroy

Experience

Research Scientist Intern | IBM Quantum — August 2025 - November 2025

Theoretical and experimental research in Quantum Error Mitigation (QEM) — **Qiskit, SciPy, NumPy**

- Conducted research on a novel QEM technique in a mixed approach of quantum computing theory & data science
- Collaborated with IBM researchers to implement and benchmark the technique on real quantum hardware

Software Engineer | Paris Digital Lab — February 2025 - July 2025

Highly selective gap year program developing three 7-weeks innovative projects for companies — **Rust, C++, Flutter, Docker**

- Programmed a peformance-focused, Cloud-native Fully Homomorphic Encryption framework for BPCE Group
- Engineered a secure phone dialer and messaging app with identity verification based on the european eIDAS / EUDI standard

Quantum Computing Research Intern | INRIA — November 2023 - February 2025

Part-time intern in INRIA's QuaCS team — **QASM, C++, GoogleTest, CMake**

- Theorized an innovative data structure to represent quantum states & circuits
- Started writing a scientific paper on the subject, detailing the mathematical background and properties of the data structure
- Created and implemented algorithms for fast classical simulation of quantum circuits

Core Member | ViaRézo (IT association) — September 2023 - February 2025

Technical administrator of France's largest student ISP — **Kubernetes, Ansible, OpenStack, Ceph**

- Operated 400+ Unifi APs and 50+ Juniper switches to provide Internet to 2.5k+ students
- Administered a 200+ virtual machines OpenStack cluster and a 150+ pods Kubernetes cluster

Head of training — **Bash, Git, Python, LaTeX, Docker, Ansible**

- Devised and conducted public training sessions and internal workshops on various technical topics

General Secretary — **GDPR, NIS2, PostgreSQL, MySQL**

- Managed administrative and legal operations, ensuring compliance with national & european regulations
- Held responsibility for database administration across all services (13M+ rows)

Network Infrastructure Intern | Paris-Saclay University — June 2024 - July 2024

- Troubleshooted and secured a university library's network infrastructure — **Cisco IOS, Wireshark, VLANs**

Projects

Metaheuristics for the TSPTW problem | CentraleSupélec — January 2024

- Developed & extensively benchmarked an approximative solution to the TSPTW problem — **Jupyter, Numba**

C/C++ Unit testing library | Personal project — August 2022

- Developed a fast and memory-safe library leveraging the preprocessor, with a stack-based approach — **C, GitHub Actions**
- Engineered pipelines for continuous integration and live documentation deployment

Classical simulation of quantum algorithms | Chateaubriand Highschool — February 2022 - June 2022

- Created a formal algebra library to enable exact scalar and matrix computations — **Python**
- Programmed a standalone proof-of-concept implementation of Shor's algorithm on up to 10 qubits

MP3 player and meta-data reader | Personal project — June 2021

- Implemented a pure-Dart MP3 meta-data reading library directly from the ID3 standard — **Flutter, Dart**
- Created a multi-platform MP3 player with a custom UI seamlessly running on Android, iOS, Linux and the web

Education

CentraleSupélec – Paris-Saclay University — 2023-2027

Master of Engineering (MEng), GPA 3.97

- CentraleSupelec is an elite French engineering school part of Paris-Saclay University (12th in the Shanghai Ranking)
- **Relevant Coursework:** networks & security, information theory, microarchitecture design & assembly, linear algebra, general algebra, design and verification of critical systems, quantum physics, quantum computing

Chateaubriand Highschool — 2021-2023

Selective post-secondary school

- Intensive two-year preparatory program for competitive entrance exams to French Grandes Ecoles, with a focus on mathematics

Languages: French (native), English (fluent), Spanish (conversational)