

# Alexandre Guechtouli

## Engineering Student in Computer Science & Cybersecurity

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**Objective:** Passionate about **Quantum Computing**, I aim to leverage my Software and Security Engineering skills within the **CERN OpenLab Summer Student Programme** to support scientific discovery through IT innovation.

## Education

### Hanoi University of Science and Technology (HUST)

International Exchange Semester – Excellence Scholarship

Sept 2025 – Present

Hanoi, Vietnam

- **Specialization:** Malware Analysis, Cryptography, Network Defense, Data Science, software Security, Digital Forensic
- **Achievement:** Successfully adapted to a research-oriented, multicultural academic environment.
- **Dual Competence:** Combined offensive/defensive security techniques with Data Science methodologies.

### Télécom SudParis (Institut Polytechnique de Paris)

Master of Science in Engineering (Diplôme d'Ingénieur)

Sept 2024 – Present

Evry, France

- **Major:** Computer Science
- **Member:** Kryptosphere (Blockchain & AI Association) and Xtrem (Running Club).

### Lycée Fénélon, Paris – CPGE MPSI/MP (Classes Préparatoires aux Grandes Écoles)

Sept 2022 – July 2024

- Intensive training in Advanced Mathematics (Linear Algebra, Modular Arithmetic, Probability) and Physics.

## Professional Experience

### BNP Paribas – IT Production & Security

Full Stack Developer & SecOps Intern (Summer Placement)

June 2025 – Aug 2025

Paris, France

- **Dev & Automation:** Engineered a **Python/Django** dashboard to visualize disabled firewall rules, replacing manual workflows. Implemented dynamic filtering and CSV exports using **JavaScript/jQuery**.
- **API Orchestration:** Integrated complex **REST APIs** (ServiceNow, Tufin, Playflows) to centralize incident data, ensuring secure authentication and data consistency.
- **Security by Design:** Enforced **RBAC** (Role-Based Access Control) and the Principle of Least Privilege across internal tools. Prepared codebase for strict security audits.
- **Agile/DevOps:** Operated in an Agile environment using **Jira** for sprint planning and **Bitbucket (Git)** for version control and code reviews.
- **Environment:** Linux Production Servers, CI/CD pipelines basics.

### Le Nautil / VVF France

Lifeguard (BNSSA) & Children's Leader

Summer 2024

France

- Demonstrated crisis management, high responsibility, and teamwork in high-pressure situations.

## Technical Projects & Leadership

### AI-Based Malware Detector (Research Project)

Deep Learning & Computer Vision applied to Security

2025

- **Architecture:** Designed a **CNN (Convolutional Neural Network)** using **TensorFlow/Keras** to detect malware by analyzing binary files as images (entropy mapping/Zigzag encoding).
- **Outcome:** Achieved high accuracy in classifying ransomware variants; project validated by faculty at HUST.

### Privacy-Preserving AI (Cassiopée Project)

Cryptography & Distributed Systems

2026

- **Architecture:** Implemented "Secure Aggregation" protocol for Federated Learning on encrypted data (Zero Trust).
- **Innovation:** Used Homomorphic Encryption (FHE) with **Python** (TenSEAL, PyTorch).

### Air Quality Predictive System

Data Engineering & Machine Learning

2025

- **Pipeline & Modeling:** Designed a full pipeline and optimized **Machine Learning** models (**LSTM** vs Random Forest) using GridSearch.

### Hackathon Org. (GenAI & Blockchain) – Logistics & Coordination

2025

- Managed logistics for major tech events including **"LLM to Agentic AI"** (100+ devs) and **"XRPL Commons"** (Web3), facilitating ecosystem interactions around **Generative AI** and **Blockchain**.

## Technical Skills

**Languages:** **Python** (Advanced - Django, NumPy, Pandas), Java, SQL, Bash.

**DevOps & Cloud:** **Linux** (Daily usage), **Docker**, **Kubernetes** (Concepts/Architecture), Git, CI/CD.

**Security:** Static/Dynamic Malware Analysis, Reverse Engineering, Network Security, RBAC, Cryptography (RSA, ECC, Lattice-based basics).

**AI/Data:** TensorFlow, Keras, PyTorch, Scikit-Learn, CNNs, Data Visualization.

**Soft Skills:** Adaptability (International Exchange), Technical Documentation, Teamwork (Agile).

## Interests

Triathlon, Combat Sports, DeepTech Watch (Blockchain Architectures, Generative AI, Post-Quantum Cryptography).