Haider Marouf

4th-Year Cryptography, Coding & Security Student

ensmmarouf@gmail.com haider.marouf@nhsm.edu.dz +213 6 74 92 57 32
linkedin.com/in/haider-marouf-1149b1316 github.com/Marouf-Haider
Souk Ahras / Algiers, Algeria

Professional Summary

Fourth-year engineering student specializing in Cryptography, Coding and Security at the National Higher School of Mathematics, Algiers. Experienced in cryptographic algorithm implementation, numerical analysis, and software development. Passionate about applying mathematical knowledge and programming skills to solve complex problems through competitive programming and hackathon participation.

Education

National Higher School of Mathematics (NHSM) *2021 – 2026*
Ingénieur en Cryptographie, Coding & Security (4th Year) Sidi Abdellah, Algiers

- Specialization in cryptographic algorithms, secure coding practices, and information security
- Advanced coursework in networking, algorithm design, and security protocols
- Currently completing final year with focus on practical cryptographic implementations

National High School of Mathematics *2018 – 2021*
Baccalauréat, Mathematics Kouba, Algiers

- Graduated with Mention — Very Good
- Strong foundation in mathematics

Professional Experience

Drone Pilot Trainee – Leisure Drones (UAVs) *June 2025*
Centre de Recherche en Technologies Industrielles (CRTI) Bou Ismaïl, Tipaza, Algeria

- Completed intensive 4-day hands-on and theoretical training in piloting leisure drones at Algeria's first civil drone training center

Intern *June 25 – July 3, 2024*
Center for Development of Advanced Technologies (CDTA), ASM Division Algiers, Algeria

- Conducted comprehensive survey of cryptography and security research initiatives at CDTA

Technical Skills

Programming Languages: Python (advanced), MATLAB, Maple
Development Tools: Visual Studio Code, Git version control, Jupyter Notebooks
Documentation & Presentation: LaTeX/Beamer (strong proficiency)
Specialized Areas: Numerical Analysis & Problem Solving, Cryptography, Information Security, Algorithm Implementation, UAV Operations
Creative Skills: Digital design, Photography
Research Skills: Mathematical modeling, algorithm analysis, cryptographic protocol implementation
Technical Certifications: Drone piloting (leisure UAVs)(aviation principles, meteorology fundamentals)

Projects & Hackathon Experience

MATHIX Hackathon Participant
Mixing and Unmixing Problem Challenge

- Participated in mathematical modeling and algorithm development for complex mixing and unmixing problems
- Collaborated with team members to develop innovative solutions under time constraints

Key Technical Projects:

- **Qary-Huffman-Encoder:** Python GUI application for Q-ary Huffman encoding with frequency analysis, tree visualization, and compression metrics evaluation
- **Support-Vector-Machine:** Stock direction prediction model using SVM with comprehensive evaluation through confusion matrices (Jupyter Notebook implementation)
- **Arnold-Cat-Map:** Mathematical exploration and Python simulation of Arnold's Cat Map in collaboration with Bahidj Nafaa
- **RSA image encryption:** MATLAB app for image encryption/decryption using RSA.

Languages

Arabic: Native
French
English

Additional Information

Research Interests: Mathematics, Cryptography research, Open-source development, Algorithm optimization

Professional Development: Actively engaged in cryptographic research and practical implementations through academic and internship experiences

Availability: Flexible schedule for hackathon participation and intensive collaborative projects