

# Lina ABOUD

ICT Engineer • Cybersecurity & AI

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## PROFILE

Motivated and reliable individual with strong skills in cybersecurity and AI. Gained over **3 years of experience** through academic programs, developing solid expertise in **system security** and **secure network architecture**, effectively connecting theory to practical implementation. Recognized for being **creative**, **decisive**, and **adaptable**, with a strong sense of **responsibility** and a results-driven mindset. Eager to apply technical expertise and problem-solving abilities to contribute to **innovative** and **secure** solutions.

## EDUCATION

National School of Engineers of Tunis (ENIT)

2023 – Present

Information and Communication Technology Engineering Degree – Telecommunications & Cybersecurity

Tunis

ESST Hammam Sousse

2021 – 2023

Preparatory Cycle in Engineering Sciences – MPSI

Sousse

## PROFESSIONAL EXPERIENCE

Information Security Research Intern

Jul - Sep 2025

Zitouna Bank - Network and Security Department

Tunis

- Designed a honeypot-based fraud data collection system using **T-Pot on AWS EC2**, capturing real-world attack traces.
- Enhanced datasets with **GAN-based augmentation**, simulating adversarial scenarios for anomaly detection.
- Proposed a novel **federated learning framework** for Tunisian banks to securely share cyber threat intelligence.

Computer Vision Intern

Jul - Aug 2024

SDSNT - IT Department

Kairouan

- Developed a **real-time YOLOv8-based safety system** to detect unconscious individuals for healthcare services.
- Optimized models for **lightweight IoT/edge deployment**, balancing accuracy and latency.

## ACADEMIC PROJECTS

• SDN & Détection d'anomalies/intrusions

Oct 2025

Network Security Project

Designed an SDN-powered architecture using **Ryu** and **OpenFlow** to monitor and evaluate firewall behavior in real time. Implemented flow-level inspection on **Mininet** and built a controller module to detect misconfigurations, latency issues, and security anomalies. Analyzed the impact of controller decisions on **QoS**, rule propagation time, and network resilience under simulated attack scenarios.

• Federated Learning for Intrusion Detection System

Oct 2024 - May 2025

End of Year Research Project (PFA)

Built a containerized **Federated IDS** using **Flower**, **TensorFlow Federated (TFF)**, and **Docker**. Implemented **aggregation algorithms** (**FedAvg**, **FedProx**) across simulated IoT institutions. Integrated **Differential Privacy**, ensuring GDPR compliance. Achieved **98.7%** recall on attacks.

• Optimisation de Firmware par RL avec Simulateur Génératif

2025-2026

AIoT / Reinforcement Learning Project

Built a PoC where a **Reinforcement Learning agent** optimizes IoT firmware parameters using a **Generative AI-based simulator** acting as a digital twin (ESP32). Designed the action space, engineered a constrained technical prompt for JSON performance estimations, and implemented a Q-Learning/PPO agent to converge toward an energy-latency optimal configuration.

• Network Simulation with eNSP and Packet Tracer

2023 - 2025

Academic Projects

Configured VLANs, OSPF, and firewalls in enterprise networks. Simulated **MAC protocols** (**CSMA**, **TDMA**, **FDMA**) to study link-layer efficiency and **security challenges in 5G**.

## TECHNICAL SKILLS

**Cybersecurity:** IDS/IPS, Threat Intelligence, Malware Detection, Network Traffic Analysis, Security Compliance, Secure Network

**AI/ML:** Federated Learning, Aggregation Algorithms (FedAvg, FedProx), GANs, Differential Privacy, Anomaly Detection, DL/NLP basics

**Cloud & Edge:** AWS (EC2, Lambda, VPC Security), Docker, Elastic Stack (Kibana, Elasticsearch), Cloud-Native IDS

**Telecom/Networking:** 5G Security, VLANs, OSPF, Firewalls, Link-Layer Protocols (CSMA, TDMA, FDMA), Secure Protocols

**Programming:** Python (advanced), C/C++, Java, Bash    **Tools:** Git, Linux, Metasploit, Oracle, Matlab, LaTeX

## CERTIFICATIONS

Cybersecurity

- Certified Network Security Practitioner – SecOps Group
- Pre Security – TryHackMe
- Jr Penetration Tester – TryHackMe

- Cyber Security 101 – TryHackMe
- Web Fundamentals – TryHackMe
- Cybersecurity Job Simulation – Forage (MasterCard)

## AI & Machine Learning

- Rapid Application Development with LLMs – NVIDIA
- Fundamentals of Deep Learning – NVIDIA

## Cloud & Systems

- AWS Concepts – DataCamp
- Containerization & Virtualization – DataCamp
- Linux & Unix Systems – Udemy

## EXTRACURRICULAR ACTIVITIES

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### Webmaster

*IEEE Computer Society*

2023 – 2025

Tunis

- Managed distributed task flows and coordinated technical operations across teams.
- Organized workshops and events, strengthening communication and planning skills.

### Team Leader – VIS-À-VIS

*TUNED*

2024

Tunis

- Led a technical team and oversaw operational planning.
- Managed workloads under time-sensitive constraints and evolving requirements.

## LANGUAGES

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• **Arabic:** Native

• **French:** Fluent

• **English:** Fluent

• **German:** Basic