Lina ABBOUD
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.

ACADAMIC PROJECTS

- **Malware Classification Pipeline**   *Oct-Dec 2025*
  Big Data & Cybersecurity Project

  Designed an end-to-end **big data pipeline for malware classification**. Collected and preprocessed large-scale malware datasets, performed **feature engineering** on static and behavioral attributes, and trained machine learning models for malicious vs benign classification. Implemented distributed data processing concepts and evaluated models using **precision, recall, F1-score**, with a focus on scalability, class imbalance, and robustness against evolving malware patterns.

- **SDN & Détection d'anomalies/intrusions**   *Oct-Dec 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.

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 (in progress)
- Cyber Security 101 – TryHackMe
- Web Fundamentals – TryHackMe (in progress)
- 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

Selected Mentee – ELLE'IT Program *2025*
Sofrecom (Orange Group) Tunisia

- Selected to represent **ENIT** among a national cohort of **20 female engineering students** from leading Tunisian engineering schools.
- Participating in a **10-month structured mentorship program** led by senior experts in **IT, cybersecurity, cloud, and digital transformation**.
- Engaging in career development workshops, technical mentoring, and leadership training within an international telecom group.

Webmaster *2023 – 2025*
IEEE Computer Society 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 *2024*
TUNED Tunis

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

LANGUAGES

- **Arabic:** Native
- **French:** Fluent
- **English:** Fluent
- **German:** Basic