EL HILALI NABIL

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Profile

I'm a second-year **Engineering student** in **Network and Computer Security** at ENIAD Berkane, passionate about solving real world challenges, cybersecurity, system administration, and networking. I've built robust intrusion detection systems, secured **SDN ecosystems with IOTA 2.0 smart contracts**, and developed machine learning/deep learning models including earthquake prediction. Driven by curiosity and a commitment to impact, I'm eager to secure a **PFA (Final-Year Internship)** where I can apply my technical expertise, teamwork, and innovative mindset to real world challenges.

Skills

Networking & Security

- **Blockchain & Smart Contracts:** IOTA 2.0, IOTA Tangle, smart contract development for SDN security
- **Intrusion Detection & Monitoring:** Zeek (formerly Bro), Elastic Stack (Elasticsearch, Kibana, Filebeat)
- **Protocols:** TCP/IP, VLAN, VPN
- **Security:** Firewalls, IDS/IPS, penetration testing with Suricata, Wireshark
- **Tools:** Gns3, Cisco Packet Tracer, Wireshark

Development

- **Languages:** Python, C++, Java (OOP)
- **Web Development:** Proficient in HTML, CSS, JavaScript, PHP; experienced with React for modern front-end frameworks.
- **Databases:** MySQL, Oracle SQL
- **Version Control:** Git, GitHub

System Administration

- **Linux Administration:** Shell scripting (Bash), user management, system security
- **Virtualization & Containerization :** VMware and Docker for deploying and managing virtual environments and applications.
- **Windows Administration :** PowerShell, service management, Group Policy

Machine Learning & Data Analytics

• **ML Libraries & Tools:** Scikit-learn, Pandas, NumPy, Matplotlib, and Seaborn for data visualization and analysis.

• **Projects & Techniques:** Development of data analysis, classification, and regression models; experience includes hyperparameter tuning (e.g., using grid search) and advanced ensemble methods (RandomForest, Gradient Boosting).

• **Deep Learning:** Familiarity with Keras and TensorFlow for developing deep learning models

Projects

IOTASDN – IOTA 2.0 Smart Contracts for Securing SDN Ecosystem

Working with a team to enhance Software-Defined Networking (SDN) security using IOTA 2.0 smart contracts to ensure scalability, efficiency, and robust protection against cyber threats such as unauthorized access and DoS attacks.

- **Smart Contract Implementation:** Developed smart contracts for access control, authority management, and DoS detection.
- **System Simulation:** Simulated and tested the system using Mininet and iotaEVM to validate performance and security.

NETWORK INTRUSION DETECTION SYSTEM (NIDS)

Team-based project focused on developing an open-source NIDS for real-time threat detection.

Key Technologies:

- **Suricata:** Configured and optimized for deep packet inspection and intrusion detection.
- **Zeek (formerly Bro):** Deployed for network security monitoring, providing detailed log analysis for forensic investigation.

- **Elastic Stack (Elasticsearch, Kibana, Filebeat):** Integrated for real-time log analysis and interactive security monitoring dashboards.

EARTHQUAKE MAGNITUDE PREDICTION (Machine Learning)
Developed regression models using Scikit-Learn to predict earthquake magnitudes.
• **Data Handling:** Employed Pandas and NumPy for data preprocessing and exploratory data analysis on seismic datasets.
• **Model Selection and Tuning:** Utilized grid search to fine tune hyperparameters, and implemented RandomForest and Gradient Boosting regression models.
• **Visualization:** Leveraged Matplotlib to compare and evaluate model performances.

AGRICULTURAL MONITORING SYSTEM – MQTT & TLS (ThingsBoard + ESP32)
IoT-based smart farming solution developed in a team
- **ESP32 & soil sensors** to collect real-time data
- **ThingsBoard & MQTT over TLS** for secure communication
- **Strong authentication & encryption** to protect sensitive agricultural data

Education

2023 – present **Engineering Degree in Network and Computer Security**
National School of Artificial Intelligence and Digital (ENIAD) Berkane

2021 – 2023 **DEUST in Mathematics, Computer Science, and Physics (MIP)**
Faculty of Science and Technology, Al Hoceima

Organisations

Online Instructor – Introduction to Bash (Linux)
Platform: *Google Classroom*
Designed and delivered an online course covering fundamental Linux concepts and shell scripting using Bash. Led virtual sessions, and provided hands on exercises to help students master Linux command ine operations.

In-School Instructor – Introduction to Git and GitHub
Institution: *National School of Artificial Intelligence and Digital at Berkane (ENIADB)*
Taught a comprehensive course on v**ersion control using Git and GitHub**. Organized in person workshops, guided students through real world collaborative coding projects to enhance their understanding of distributed version control systems.

INTERESTS

Cybersecurity and Network Defense
Linux enthusiast, CTF challenges,, ethical hacking

Languages

FRANCAIS	ANGLAIS	ARABIC
Professional Working Proficiency	Professional Working Proficiency	Native