DINA ELMNAJJA

Second-year master's student in cryptology and cybersecurity.

As a student actively pursuing a master's degree in Cryptology and Cybersecurity, I am deeply immersed in courses covering cryptographic algorithms and network security. Aspiring to apply my expertise to real-world challenges, I am committed to delivering innovative solutions and advancing the field of information security.

CONTACTS

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https://github.com/dinaelmnajja

https://dinaelmnajja.github.io/Portfolio_dina/

SKILLS

- Python
- C++
- Java
- Html/Css
- Cybersecurity

LANGUAGES

- English
- French
- Arabic

PASSIONS

- Reading
- Photography
- Travel

CERTIFICATIONS

- Essential career elements in cybersecurity by Microsoft and LinkedIn.
- Network security (Cisco).

EXPERIENCE

JULY 2024 - SEPTEMBER 2024

NETWORK SECURITY INTERNSHIP - ONDA (NATIONAL AIRPORTS AUTHORITY), AL HOCEIMA

- Participation in the study and implementation of security solutions for the Moroccan Air Navigation IP Network (RINAM).
- Configuration and securing of network communications using protocols such as VPN (IPsec) and SSH.
- Analysis of existing tools for network supervision and proposal of improvements.

Network simulation in GNS3 and use of VirtualBox to test and secure connections between different operating systems (Linux, Ubuntu, Windows).

PROJECTS

TIME SERIES FORECASTING USING DEEP LEARNING.

- Conducted time series analysis using deep learning on Yahoo Finance data.
- Compared ARIMA and LSTM models for price prediction.
- Developed a user-friendly web interface to adjust parameters and visualize prediction results.

DEVELOPED A DESKTOP APPLICATION FOR GENERATING AND VALIDATING JSON WEB TOKENS (JWT).

- Used the Qt framework and C++ to develop the desktop application.
- Integrated the OpenSSL library to implement algorithms such as HS256.

ENCRYPTION OF DATA AND COMMUNICATIONS USING SSL/TLS AND IPSEC.

- Created a self-signed certificate using command-line tools in an Ubuntu virtual machine to establish a secure session between a client and a server using SSL/TLS.
- Simulated a network architecture in GNS3 to secure traffic via an IPsec-based site-to-site VPN.
- Captured and analyzed traffic with Wireshark to verify the Encapsulating Security Payload (ESP), ensuring the confidentiality and integrity of data exchanged over the network.

DEVELOPMENT OF A SECURITY APPLICATION.

- Developed a desktop application with a Python backend and an intuitive interface using Qt Designer, focused on various aspects of digital security.
- Key features include: detecting malicious links and analyzing files, identifying phishing emails, and hashing text using MD5 and SHA1 algorithms for integrity verification.
- Integrated machine learning models for effective threat detection.
- Designed a user-friendly interface with Qt Designer.

MUSHROOM CLASSIFICATION PROJECT USING MACHINE LEARNING.

- Developed a mushroom classification model using Support Vector Machines (SVM), K-Nearest Neighbors (KNN), and logistic regression.
- Optimized the models to maximize accuracy and evaluated performance using appropriate metrics.
- Created a flexible application with Flask and Python that allows users to make predictions after selecting the 5 most important parameters.

APPLICATIONS OF ERROR-CORRECTING CODES IN PYTHON AND PYQT5.

- Developed the first application: Message encryption using Goppa and cyclic codes.
- Developed the second application: Vernam encryption with one-time key cryptography.

EDUCATION

2023 - 2025

Master's in Cryptology and Cybersecurity.

2022 - 2023

Bachelor's degree in mathematics and computer science.

2019 - 2020

Baccalaureate in physical sciences and chemistry.