

HUSSEIN FAWAZ

PhD Student

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ABOUT ME

A Ph.D. student in Informatics at the USI-SUPSI. My research interests lie at the intersection of machine learning and security, with a focus on trustworthy machine learning for network intrusion detection.

EDUCATION

Ph.D. Explainable and Privacy-Preserving Cybersecurity

Università della Svizzera italiana (USI) - Scuola universitaria professionale della italiana (SUPSI)

Sept 2024 – ongoing Lugano, Switzerland

Research Area: Network Intrusion Detection - Explainable AI - Trustworthy AI - Uncertainty Quantification

Advisors: Prof. Marc Langheinrich, Prof. Silvia Giordano, Dr. Omran Ayoub

Receipient of the *Swiss Government Excellence Scholarship (ESKAS)*

M.Sc. Information Systems and Data Intelligence

Lebanese University

Oct 2021 – Oct 2023 Beirut, Lebanon

Thesis title: Lightweight Lightpath Quality of Transmission Estimation Through SHAP-based Feature Selection

Advisors: Prof. Ihab Sbeity, Dr. Omran Ayoub

Thesis Grade: 83 (Ranked 1st)

B.Sc. Computer Science

Lebanese University

Oct 2018 – Sep 2021 Beirut, Lebanon

EXPERIENCE

Software Engineer

AGParts

April 2024 – Sept 2024 U.S - Remote

- Develop full stack application using technologies such as Python, NestJS, ReactJS, NextJS, Prisma and Typescript.

Software Engineer

CloudGate Consulting DWC-LLC

Jan 2022 – April 2024 Dubai - Remote

- Develop web-based network services using latest technologies such as Python, MongoDB, ReactJS, NextJS.
- Implementing security best practices on frontend applications to safeguard against vulnerabilities.


Instructor


Lebanese International University (LIU)


Feb 2024 – Aug 2024 Beirut - Onsite

- Teaching courses including AI, Web Programming, Java, Computer Networks and Security, and Software Engineering.

PUBLICATIONS

 H. Fawaz, O. Ayoub, D. Andreoletti, and S. Giordano, "Energy Cost of Enhancing Reliability of Machine Learning Models for Edge IoT Security " *2026 21th Wireless On-Demand Network Systems and Services Conference (WONS). IEEE, 2026.*

 H. Fawaz, F. Ezzeddine, S. Giordano and O. Ayoub, "Towards Better-Calibrated ML Models for Reliable Network Intrusion Detection via Calibration-Aware SHAP-Based Feature Selection" *2025 21th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Marrakesh, Morocco, 2025*

 H. Fawaz, F. Arpanaei, D. Andreoletti, I. Sbeity, J. A. Hernández, D. Larrabeiti, O. Ayoub, "Reducing Complexity and Enhancing Predictive Power of ML-based Lightpath Quality of Transmission Estimation via SHAP-Assisted Feature Selection." *International Conference on Optical Network Design and Modelling (ONDM), IEEE 2024.*

ACTIVITIES

Teaching Assistant

- Business Process Modeling, Management and Mining (Prof. Cesare Pautasso, USI Spring 2025-2026)
- Algorithmic Design 2024 (Dr. Omran Ayoub, SUPSI Fall 2024-2026)

Web Chair:

- (IFIP) Networking 2026 Conference (NETWORKING 2026)
- 2nd International Workshop on Trustworthy and eXplainable Artificial Intelligence for Networks (TX4Nets 2025)

SKILLS

Programming: Python Matlab Javascript PHP C C++ Java

ML Frameworks: NumPy Pandas Scikit-learn PyTorch OpenCV Keras TensorFlow SHAP

Frontend: ReactJS NextJS AngularJS

Backend: NodeJS NestJS Django

Databases: MySQL MSSQL MongoDB Pocketbase SurrealDB

APIs: REST gRPC Swagger GraphQL

Mobile: Android React Native

Testing: Jest Cypress

Network and Security: Wireshark Cisco Packet Tracer Nmap OWASP

Other: Typescript tRPC GIT Github Gitlab Linux Elastic Search Nifi