

HUSSEIN FAWAZ

PhD Student

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📍 Lugano, Switzerland



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

Recepient 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](#)