

# Ahmad Mahmud

PHD STUDENT

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## Education

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### University of Strasbourg

PHD IN COMPUTER SCIENCE

Strasbourg, France  
Nov 2023 - present

- **Thesis:** Software Defined Low-Power and Lossy Wireless Networks
- **Advisors:** Julien Montavont & Thomas Noel

### University of Calabria

MS IN TELECOMMUNICATION ENGINEERING (GPA: 110 CUM LAUDE/ 110)

Calabria, Italy  
Oct 2021 - Oct 2023

- **First rank** over the 2 years of the degree.
- **Thesis:** Improving the Quality of Federated Learning using Programmable Networks
- **Advisors:** Antonio Iera & Pasquale Pace

### Latakia University (formerly: Tishreen University)

BS IN COMMUNICATIONS AND ELECTRONIC ENGINEERING (GPA: 93/100)

Latakia, Syria  
Sep 2014 - Sep 2019

- **First rank** over the 5 years of the degree.
- **Thesis:** Millimeter Waves (mmWs) Channel Simulation using MATLAB
- **Advisor:** Ghadir Madi

## Professional Experience

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2023-Now **PhD Student**, University of Strasbourg, ICube laboratory, France

2019-2021 **Workshop Trainer in Telecommunications and Programming**, BIT Institute, Syria

## Publications

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### INTERNATIONAL JOURNALS

**Mahmod, Ahmad**, Julien Montavont, and Thomas Noel. 2025. PENSIL: Programmable Network Stack for low-power lossy IoT networks using Lightweight-virtualization. *Internet of Things*: 101829.

**Mahmod, Ahmad**, Pasquale Pace, and Antonio Iera. 2024. The Role of SDN to Improve Client Selection in Federated Learning. *IEEE Communications Magazine*.

### INTERNATIONAL CONFERENCES

**Mahmod, Ahmad**, Julien Montavont, and Thoms Noel. 2025. Programmable Solutions for Low-power Lossy Wireless Networks: A Study of SDN and Femto Containers. *International Conference on Advanced Information Networking and Applications (AINA)*. Cham: Springer Nature Switzerland.

**Mahmod, Ahmad**, Pasquale Pace, and Antonio Iera. 2024. SDN-assisted client selection to enhance the quality of federated learning processes. *Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC)*. IEEE.

**Mahmod, Ahmad**, Pasquale Pace, and Antonio Iera.. 2023. Improving the quality of federated learning processes via software defined networking. *Proceedings of the 1st International Workshop on Networked AI Systems*.

### NATIONAL CONFERENCES

**Mahmod, Ahmad**, Julien Montavont, and Thomas Noel. 2024. Menu or a la carte? An architecture for programming the data plane of constrained wireless networks. *9èmes Rencontres Francophones sur la Conception de Protocoles, l'Évaluation de Performance et l'Expérimentation des Réseaux de Communication (CoRes 2024)*.

## Awards & Grants

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2023	<b>Excellence Prize for First Graduate</b> , University of Calabria	€3,500
2022	<b>Excellence Prize for First-ranked Student</b> , University of Calabria	€1,000
2021	<b>International Master Scholarship</b> , University of Calabria	€8,000
2019	<b>Excellence Certificate for First Graduate</b> , Latakia University	
2018	<b>Excellence Certificate for the Distinguished in Academic Study (Rank: First)</b> , Latakia University	
2017	<b>Excellence Certificate for the Distinguished in Academic Study (Rank: First)</b> , Latakia University	
2016	<b>Excellence Certificate for the Distinguished in Academic Study (Rank: First)</b> , Latakia University	
2015	<b>Excellence Certificate for the Distinguished in Academic Study (Rank: First)</b> , Latakia University	

## Teaching Experience

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### Wireless Networks

UNIVERSITY OF STRASBOURG - M1 (BAC+4)

Strasbourg, France

Spring 2025

- Volume: 16h (Lectures + Exercises + Practical sessions)
- Course Responsible: Ahmad Mahmud (me) & Fabrice Theoyler

### Internet of Things

UNIVERSITY OF STRASBOURG - M2 (BAC+5)

Strasbourg, France

Fall 2024 & Fall 2025

- Volume: 36h (Practical sessions)
- Course Responsible: Julien Montavont

## Supervision

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2026	<b>Charbel Gergès</b> , Master Research Project (TER), <i>Reliable and Efficient Over-the-Air Software Update Mechanisms for Wireless Networks</i> (Bac+4).	University of Strasbourg
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## Technical Skills

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PROGRAMMING C/C++, Python, Java, MATLAB, Linux Bash

MACHINE LEARNING XGBoost, scikit-learn, PyTorch, TensorFlow

SDN RYU Controller, OpenDayLight Controller, POX Controller

OPERATING SYSTEMS RIOT, Contiki-NG, Zephyr

TOOLS FIT IoT-LAB, Cooja, Mininet/Mininet-WiFi

## Projects

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### Extension of RPL protocol in RIOT OS to support Non-storing mode

UNIVERSITY OF STRASBOURG

2025

- Used Tools: C/C++, Git

### Improving the Quality of Federated Learning using Programmable Networks

UNIVERSITY OF CALABRIA

2022-2023

- Used Tools: Python, Federated Learning, GNS3, OpenDayLihgt Controller, Open V Switches, VMware, Virtual Box, OpenFlow

## **Performance Evaluation of Different Shortest-Path Algorithms in SDN using Different Cost Parameters**

UNIVERSITY OF CALABRIA

2023

- Used Tools: RYU Controller, OpenFlow, Networkx Library, Mininet, Dijkstra, Bellman-Ford, A\*, Floyd-Warshall.

## **Load Balancing Technique for Face Recognition Video Streaming in Wireless Networks**

UNIVERSITY OF CALABRIA

2023

- Used Tools: RYU Controller, OpenFlow, Networkx Library, Mininet, MininetWifi.

## **RSNA Screening Mammography Breast Cancer Detection**

UNIVERSITY OF CALABRIA

2023

- Used Tools: Machine learning, Deep learning, Computer vision, Image processing, Python, TensorFlow, Kaggle

## **Detecting contradiction and entailment in multilingual text**

UNIVERSITY OF CALABRIA

2022

- Used Tools: Machine learning, Natural language processing, Deep learning, Python, TensorFlow, Hugging Face, Kaggle

## **Skin Diseases Detector App**

UNIVERSITY OF CALABRIA

2022

- Used Tools: Android Studio, Java, TFLite, Deep Learning

## Languages

ENGLISH, FRENCH              Read, Written, Spoken

ITALIAN                        Spoken

ARABIC                        Mother Tongue