

# Ahmed-Rafik-El Mehdi BAAHMED

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## EDUCATION

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<b>National Higher School of "Arts et Métiers" (ENSAM) - Doctoral School SMI 432</b>	<b>Paris, France</b>
<b>CESI, CESI LINEACT UR 7527</b>	<b>Strasbourg, France</b>
<i>Ongoing Computer &amp; Engineering Sciences Ph.D. degree</i>	<i>December 2023 – December 2026</i>
<b>Higher School of Computer Science 08 May 1945 - Sidi Bel Abbes (ESI SBA)</b>	<b>Sidi Bel Abbes, Algeria</b>
<i>Systems engineering Master degree   State Engineer Diploma in Systems engineering</i>	<i>September 2018 – July 2023</i>
<b>El Nadjah High School</b>	<b>Sidi Bel Abbes, Algeria</b>
<i>Baccalaureate in Mathematics field - graduation with honors</i>	<i>July 2018</i>

## WORK EXPERIENCE

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<b>National Higher School of "Arts et Métiers" (ENSAM) - Doctoral School SMI 432</b>	<b>Paris, France</b>
<b>CESI, CESI LINEACT UR 7527</b>	<b>Strasbourg, France</b>
<i>Ph.D. Student/Candidate in Computer &amp; Engineering Sciences</i>	<i>December 2023 – December 2026</i>
<ul style="list-style-type: none"><li>• Thesis Title: "Computational Efficiency of Federated Learning techniques on Edge-Cloud Infrastructures"</li></ul>	
<b>CESI Engineering school</b>	<b>Strasbourg, France</b>
<i>Adjunct Lecturer in Computer Science</i>	<i>September 2024 – April 2026</i>
<ul style="list-style-type: none"><li>• "Artificial Intelligence" Course</li><li>• "Object-Oriented Design and Programming" Course</li><li>• "Computer Networks &amp; System Administration" Course</li><li>• "Arithmetic &amp; Cryptography" Course</li><li>• "Programming Paradigms" Course</li><li>• "Python for Signal Processing" Course</li></ul>	
<b>INSA Lyon – LIRIS Laboratory</b>	<b>Villeurbanne, France</b>
<i>Deep Learning Intern – Engineering &amp; Master thesis</i>	<i>February – July 2023</i>
<ul style="list-style-type: none"><li>• Master Thesis Title: "eXplainable Artificial Intelligence on Graph Neural Network-Based Network Intrusion Detection Systems"</li><li>• Engineer Thesis Title: "E-GNNExplainer: Single-Instance Explanation of Edge-Classification Graph Neural Networks-based Network Intrusion Detection Systems"</li></ul>	
<b>HASNAOUI Group of Companies</b>	<b>Sidi Bel Abbes, Algeria</b>
<i>Network Engineer Intern</i>	<i>September 2021</i>

## LEADERSHIP EXPERIENCE, ACTIVITIES & SCIENTIFIC PRODUCTION

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<b>Internet of Things Journal [ISSN 2542-6605] [Q1, IF 7.6]</b>	<b>Online</b>
<i>Authorship and Publication in the prestigious Internet of Things Journal</i>	<i>January 2026</i>
<ul style="list-style-type: none"><li>• Published article: "HiFEL-OCKT: Hierarchical Federated Edge Learning with Objective Congruence and Multi-Level Knowledge Transfer for IoT Ecosystems"</li></ul>	
<b>IWCMC 2024 [rank B Conference]</b>	<b>Ayia Napa, Cyprus</b>
<i>Authorship, presentation and participation in the 20<sup>th</sup> IWCMC Conference</i>	<i>May 2024</i>
<ul style="list-style-type: none"><li>• Published article: "Hyperparameter Impact on Computational Efficiency in Federated Edge Learning"</li></ul>	
<b>ECML PKDD 2023 [rank A Conference]</b>	<b>Turin, Italy</b>
<i>Authorship, presentation and participation in the ECML PKDD Conference</i>	<i>September 2023</i>
<ul style="list-style-type: none"><li>• Published article: "Using Graph Neural Networks for the Detection and Explanation of Network Intrusions"</li></ul>	
<b>Project Manager &amp; Developer of "Alzheimer-AI" project</b>	
<ul style="list-style-type: none"><li>• A Computer Vision and Deep Learning-Based "Early Detection of Alzheimer's Disease System" using multiple approaches</li></ul>	<i>November 2022 – February 2023</i>

## COC'2022

Authorship and presentation in the international Connected Objects and Systems Conference

Online

May 2022

- Published article: “Computer Vision and Deep Learning-Based support system for Visually Impaired People in an outdoor environment”

## Project Manager & Developer of an “ArtificialEye” project

- A Computer Vision and Deep Learning-Based support system for Visually Impaired People in an outdoor environment

March – July 2022

## CICT'2022

Presentation in the 1st national Conference on Information and Communication Technology

February 2022

Project Manager & Web Developer of “LECTIO” An e-book Website

December 2021 – March 2022

Web Developer and Quality Insurance Manager of "HEALTHLINE" project A health web application

April – September 2021

Developer & Organizer in the national AlphaBit Coding Challenge Event (3rd Edition)

March – June 2021

## COC'2021

Authorship and presentation in the international Connected Objects and Systems Conference

Online

March 2021

- Published article: “CONCEPTION D'UNE STATION MÉTÉO INTELLIGENTE”

Cybersecurity Instructor & Trainer in AlphaBit Scientific Club

March – October 2021

Vice-President of AlphaBit Scientific Club

January – October 2021

Project Manager & Developer of “ESI Weather” project an AI-based weather station

March – October 2020

## SKILLS & INTERESTS

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### IT Skills

- Machine Learning, Deep Learning, Federated Learning and Computational Intelligence paradigms.
- Neural Networks Development (Attention, RNN, GraphNN, CNN, DNN, Reservoir Computing, Spiking NN).
- Data mining and Data analytics.
- Explainable Artificial Intelligence.
- Computer vision and Image processing.
- IoT Development and Solution Architecture (Edge-Fog-Cloud).
- Arduino and Raspberry Pi.
- Graph theory and Geographic Information Systems.
- Problem solving and automating tasks.
- **Programming:** Python, C/C++, Pascal, JavaScript — TensorFlow, Keras, PyTorch, sickit-learn, numpy, pandas, matplotlib, multiprocessing, multithreading, SQL, Git, GitHub, Docker.
- **Technologies:** WSN, LoRa, Sigfox, MQTT Protocol, Kafka Broker, IoT Cloud Platforms.

### Soft Skills

- Leadership and project management.
- Critical thinking and problem solving.
- Public speaking, sense of communication, listening, organization and team spirit.
- Time management, punctual, determined, flexible and dynamic.

**Languages:** English, French, Arabic.

### Interests:

- Efficient AI, edge intelligence, learning paradigms and collaborative IoT.
- Data science, neuroscience, astronomy and astrophysics.
- Traveling, learning, reading and drawing.

## CONTACTS

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**Portfolio:** <https://eagleeye1107.github.io/>

**LinkedIn:** <https://linkedin.com/in/ahmed-rafik-el-mehdi-baahmed-7552311a0>

**GitHub:** <https://github.com/EagleEye1107>