

# Abdessamed Seddiki

Ecole nationale Supérieure d'Informatique, Algiers, Algeria

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## Profile

I am a fifth-year Computer Systems (SIQ) student at ESI Algiers, with a strong interest in infrastructure (networking, security, IoT), applied artificial intelligence (AI), and optimization. With strong expertise gained through academic studies and hands-on internships, I have developed practical skills and am eager to apply my knowledge to drive innovation in research fields.

## Areas of Expertise

Computer Systems, Artificial Intelligence, Optimization, Infrastructure

## Projects & Experience

**Compiler Optimization for Fully Homomorphic Encryption** [New York University Abu Dhabi](#) July 2024 - Now

- Working on designing and optimizing compiler code for Fully Homomorphic Encryption (FHE) using e-graph methods and machine learning techniques, under the supervision of Dr. Riyadh Baghdadi and Dr. Eduardo Chielle.

**Anomaly-Based IDS Development for IoT** [Al Yamamah University Riyadh](#) May 2024 – July 2024

- Developed an anomaly-based Intrusion Detection System (IDS) for IoT environments using machine learning (ML) and deep learning (DL) techniques, applied on academic publicly available datasets, in order to improve detection accuracy, under the supervision of Dr. Mourad Benmalek

**Network Security (SIEM Configuration Project)** [ESI](#) March 2024 – June 2024

- Designed and implemented a secure network topology, incorporating firewalls and segmented network zones to enhance security. Configured a SIEM system to collect and analyze security event logs from various network devices and applications. Configured Virtual Network using VMware Workstation to simulate ESI infrastructure.

**Web Development Internship** [NBQ Bab Ezzouar](#) June 2023 – October 2023

- Completed an internship at NBQ to implement a web application for managing their financial transactions, utilizing web technologies such as HTML, CSS, JavaScript, Next.js and Node.js to develop an intuitive user interface and robust backend functionalities.

**Backend Development for Tourism Website in Algeria** [ESI](#) March 2023 – June 2023

- Completed an internship at NBQ to implement a web application for managing their financial transactions, utilizing web technologies such as HTML, CSS, JavaScript, Next.js and Node.js to develop an intuitive user interface and robust backend functionalities.

## Publications

- "Bias in Federated Learning: Factors, Effects, Mitigations, and Open Issues", accepted in " [Ingénierie des Systèmes d'Information](#) " journal (published in December 2024).
- "PSO-enhanced Machine Learning and Deep Learning for IoT Intrusion Detection", under revision in " [Data Science and Management](#) " journal
- "SNN-IoMT: A Stacking Ensemble of Deep Learning Models for Intrusion Detection in Internet of Medical Things (IoMT) Environments", under revision in " [Computer Modeling in Engineering & Sciences](#) " journal.
- "CHEHAB: An Auto-optimizing Compiler for Homomorphic Encryption", under submission to the " [PLDI 2025](#) " conference.

## Some Online Courses & Certifications

- System Administration and IT Infrastructure Services - [Google Career Certificates](#)
- Ethical Hacker - [Cisco](#)
- Introduction to IoT and Digital Transformation- [Cisco](#)
- Arduino Platform and C programming- [Coursera](#), [UCI](#)

- Supervised Machine Learning: Regression and Classification - [Coursera](#)

## Education

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**Computer Science Student** *Higher National School of Computer Science*

**Algiers, Algeria** 2020-2025

Major: Systèmes Informatiques SIQ - Infrastructures

**Remark:** Attending the **best computer science school in Algeria**, renowned for its excellence in education.

Relevant Courses: Mathematics, Stochastic Processes, Data Analysis, Machine Learning, Optimization, Networking, Operating Systems, Internet of Things, Software and Hardware.

**High School Student** *Abdellah Benaissa High School*

**Tlemcen, Algeria** 2017-2020

Option: Electrical Engineering and Electronics

**Achievements:** Achieved a score of **19.20/20** in the Baccalaureate Exam, ranking **1st nationally among 637,538 candidates**. **Honored by the President of Algeria, Abdelmadjid Tebboune, for this accomplishment.**

## Skills

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- **Software & Hardware:** Networking, Security, Cryptography, Optimization
- **Machine Learning and Data Science:** Python (NumPy, Pandas, Matplotlib, TensorFlow, PyTorch, etc.), Machine learning, Neural Networks, Reinforcement Learning
- **Web Development:** HTML, CSS, JavaScript, Frameworks (React.js, Next.js, Node.js, Django, etc.), Database Management(MySQL, PostgreSQL, Oracle, MongoDB)