

Adam Bouafia

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Education

Vrije Universiteit Amsterdam

Master's in Global Software Engineering (GSEEM) in Computer Science

Sept 2024 – Dec 2025

- Specialization: Software Engineering & Green IT
- Thesis: Towards Greener Clouds: Evaluating Hybrid Log Management System

Università degli Studi dell'Aquila

Master's in Global Software Engineering in Computer Science

Sept 2023 – June 2024

Higher Institute of Computer Science of Mahdia

Bachelor's in Computer Science in Software Engineering & Information System

Sept 2019 – June 2022

- Final Grade: 15.2/20
- Thesis: Flutter Mobile Security App 'M3ak'

Experience

Software Developer

Atomic IT-Pro

Mahdia, Tunisia

Jan 2022 – June 2022

- Developed Flutter mobile security application called 'M3ak'
- App reached top 5 on PlayStore with 10,000+ downloads with high ratings

Software Developer

Euromed Organization

Paris, France

July 2022 – Dec 2022

- Developed Dhayen, a mobile security app for a national campaign
- Contributed to the Algerian national awareness campaign: 'Dhayen, Yakfi, Stop!'

Researcher

Vivieb

Pescara, Italy

Nov 2023 – Feb 2024

- Optimized energy efficiency in Kubernetes clusters
- Visualized metrics using Grafana, utilized Kubegreen

Master's Thesis Researcher

Vrije Universiteit Amsterdam

Amsterdam, Netherlands

Mar 2025 – Dec 2025

- Designed and evaluated a hybrid log management system combining MySQL, ELK, and IPFS for improved integrity, performance, and energy efficiency in cloud computing.
- Applied content based algorithm (CBR) and reinforcement learning (Q-learning and A2C) for intelligent log routing, addressing regulatory compliance (GDPR, HIPAA) and sustainability in data centers.
- Delivered a reproducible, containerized pipeline for testing routing strategies, focusing on latency and energy consumption.

Projects

LCT - LLM Comparative Tool with Energy Profiling

Oct 2025

- Developed open-source framework for evaluating 500,000+ HuggingFace LLMs across 17 research-backed algorithms (BLEU, ROUGE, BERTScore, G-Eval, HumanEval, GSM8K) with 15+ integrated datasets, featuring real-time energy profiling via CodeCarbon and hardware-level RAPL counters.

- Architected multi-evaluation system combining traditional NLP metrics, semantic embeddings (Sentence-BERT), LLM-as-judge approaches, and task-specific benchmarks (code generation, mathematical reasoning, safety alignment) with full environmental impact tracking across 35+ global regions.
- Built containerized deployment with Docker (CPU/GPU variants) and automated CI/CD pipeline using GitHub Actions for multi-version testing (Python 3.9-3.12), Docker builds, and continuous deployment to Docker Hub, supporting reproducible experiments with CSV exports and carbon footprint analytics (tokens/joule, kg CO₂).

CO2 Consumption Monitor — GNOME Shell Extension

2025-9

- Developed an open source GNOME Shell extension available on Gnome Store to estimate real-time CO₂ emissions based on system usage, using pure JavaScript/GJS.
- Integrated various online carbon intensity providers (ElectricityMaps, Smart Auto) and built features for auto country detection and live data updates.
- Implemented advanced UX features like per-application CO₂ tracking, historical data export, and intuitive preferences for end-users.

Think Before You Save (Green Waves Hackathon Winner at TU Delft)

2025-1

- Developed a Chrome extension to calculate and display CO₂ emissions from cloud file storage, promoting sustainable digital practices.
- Awarded winner at the Green Waves Hackathon at TU Delft University for innovative approach to environmental impact awareness.
- Implemented features including file emissions estimation, history tracking, interactive eco-tips, and user notifications using JavaScript, Chrome Extensions API, and @tgwf/co2.

Create a Serverless Kubernetes-based Resource Manager

2024-11 - 2025-1

- Designed a serverless Kubernetes control plane using on-premise solutions like Knative
- Benchmarked system performance under real-world Kubernetes deployment patterns
- Evaluating scalability and elasticity using latency, throughput, and resource usage metrics

Comparative Evaluation of Energy Efficiency in LLMs

Oct 2024

- Analyzed energy consumption across LLM versions
- Utilized Experiment Runner and DeepEval tools

Smart Fan Project

Sept 2024

- Controlled environmental conditions in real-time
- Used MQTT, InfluxDB, Grafana for data processing

GramApp-Detect-API

July 2024

- Developed API for grammar checking and sentiment analysis
- Leveraged NLP techniques for efficient text analysis

Vehicle Routing Problem Optimization

Dec 2023

- Solved VRPHLB using MILP for delivery optimization
- Applied network optimization techniques

Gas Monitoring System

Feb 2024

- Built a gas monitoring system using Node-RED and InfluxDB
- Integrated Telegram notifications for safety alerts

Certifications

JNCIA-DevOps (Juniper Networks Certified Associate - DevOps)

Nov 2024

IELTS Academic - English B2

May 2023

Skills

Programming Languages: Python, Java, JavaScript, C++, Dart

Containerization and Orchestration: Kubernetes, Knative, Docker

Serverless and Cloud Technologies: Serverless architecture, AWS Lambda, Knative

Distributed Systems: Consistency, fault tolerance, performance benchmarking

Benchmarking and Performance Evaluation: Experiment Runner, DeepEval, latency, throughput analysis

Data Monitoring and Visualization: InfluxDB, Grafana, Node-RED

Optimization and Algorithms: Mixed-Integer Linear Programming (MILP), Network optimization

Natural Language Processing (NLP): Grammar checking, sentiment analysis, API development

IoT and Real-time Control: MQTT, environmental control systems, data processing

Frameworks & Libraries: Flutter, Spring Boot, Node.js

Tools & Technologies: API Development, NLP, IoT, ML frameworks

Languages

Arabic: Native

French: Intermediate

English: Fluent

Italian: Proficient