Otman Mouhib

+33 7 73 35 51 03 | 44300 Nantes, France | otman.mouhib@univ-nantes.fr | mouhib.otm@gmail.com | linkedin.com/in/otmanmouhib

Ingénieur en Informatique – Développeur Logiciel, Web Full-stack, AI/ML, BIGDATA, IOT, Robotics

Recherche CDI/CDD ou Alternance ou Stage Bac+5

Summary

Polyvalent Computer Engineer (Bac+5) with end-to-end experience in embedded systems, artificial intelligence (AI), full-stack software development, system programming, automation, and data engineering. Skilled in Python, C++, and modern web frameworks (Next.js, MongoDB, Tailwind CSS). Currently conducting research in multicore performance optimization at LS2N (CNRS). Seeking CDD/CDI roles involving software engineering, embedded development, AI/ML pipelines, or systems programming.

Technical Skills

Languages & Frameworks: Python, C++, C, C#, Java, JavaScript, TypeScript, Node.js, Bash, HTML, CSS, SCSS, SQL, NoSQL, JSON, YAML, XML, JSX, TSX, Markdown, Arduino, Assembly (ARM), Django, Flask, ASP.NET, Spring Boot, Express.js, Next.js, React , Angular, JEE

AI & ML: Machine Learning, Deep Learning, Computer Vision, NLP, OCR, Transformers, LLMs, Model Training, PyTorch, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Streamlit

Embedded & IoT: Node-RED, ESP32, Arduino, LoRa, OTA updates, Sensor Integration, MQTT, Serial Communication, Embedded C, Real-Time Systems

Web Development: Next.js, React, Tailwind CSS, Node.js, Express.js, REST APIs, MongoDB, Mongoose, JWT Authentication, WebSockets, Responsive Design

DevOps & Cloud: Azure DevOps, AWS (VPC, EC2), Git, GitHub, GitLab CI/CD, Docker (basics), Shell Scripting, Ubuntu Server, Raspbian, Linux Command Line

Data Engineering: Data Cleaning, Feature Engineering, Power BI, Data Visualization, Dashboards, RStudio (MILP Optimization), MongoDB Compass

Big Data & HPC: Hadoop, Spark, PySpark, MapReduce, Distributed Computing, Parallel Programming, ARM Cortex-A53, PMU, Linux Perf, Scientific Benchmarking, Instruction Counting

Automation & Testing: Automation Scripts, Ranorex (basics), Jira, Jira SCRUM Projects, Agile/Scrum Methodology, Test-Driven Development (TDD), Bash Automation

Other Tools: Visual Studio, VS Code, Postman, Figma, Trello, Notion, Draw.io, Latex, Markdown, SIMULINK, Matlab

Operating Systems: Linux, Ubuntu, Windows, Raspbian

Languages: French (Fluent), English (Fluent), Arabic (Native)

Experience

AI & Embedded Systems Research Engineer – Multicore Performance Modeling 2025
Research Internship – LS2N (CNRS) *Nantes, France*

- Developed predictive AI models to estimate instruction throughput and memory interference in ARM Cortex-A53 multicore systems
- Implemented low-level C++ instrumentation using Performance Monitoring Units (PMUs) under Linux
- Designed modular benchmarking pipelines simulating robotic and parallel workloads for real-time system analysis
- Trained Python-based machine learning models to predict contention patterns from hardware performance data
- Integrated AI-driven insights into embedded environments to support autonomous system optimization
- Collaborated on AI-augmented performance monitoring strategies for intelligent embedded and robotic systems

Embedded AI Systems Engineer – IoT & Autonomous Monitoring 2024
Atlantic Dunes *Tangier, Morocco*

- Developed an autonomous embedded system using ESP32 microcontrollers to collect environmental data (pH, EC, temperature) and actuate pumps and valves based on intelligent logic
- Designed closed-loop perception-action cycles simulating robotic behavior, integrating sensors and actuators for autonomous decision-making
- Built a full-stack IoT architecture with OTA firmware updates, MQTT messaging, and a self-hosted backend server for real-time monitoring and control
- Created a responsive web interface for system supervision, status visualization, and manual override control

- Engineered a modular C++ library for managing sensors, relays, and communication protocols, enabling rapid prototyping for embedded AI applications
- Implemented automated testing and fault-tolerant design principles to ensure robustness and scalability in industrial deployment scenarios

AI Research Engineer – Deep Learning & Diagnostic Assistance 2024
AI & Healthcare Project *Morocco*

- Developed and trained deep learning models, including RNN architectures, on annotated medical image datasets to assist real-time diagnostic workflows
- Simulated perception-to-decision pipelines, transferable to real-time vision tasks in robotics (e.g., defect detection)
- Built a functional prototype with AI-driven visual outputs and explainable diagnostics
- Pitched the system to investors with live demos and performance analysis dashboards
- Demonstrated integration of AI perception and assistive intelligence, aligned with industrial robotics and smart operator support

Expert Consultant – Robotics & AI Systems (UPF Robotics Club) 2025
Université Privée de Fès *Fez, Morocco*

- Led the robotics club team and mentored members in embedded systems, AI, and robotic design for national competitions
- Organized and delivered hands-on training in real-time image processing, autonomous control, and robotic arm coordination
- Supervised the design and integration of an autonomous mobile robot equipped with a robotic arm and AI-based vision
- Directed the internal staff and coordinated logistics for a national robotics competition hosted at the university
- Coached the competition team that won **1st prize nationally**, demonstrating excellence in autonomous robotic systems

AI Engineer – Document Understanding & Intelligent Interfaces 2024
Nokia *Salé, Morocco*

- Built a local AI pipeline using OCR and NLP to extract structured data from noisy or handwritten scanned documents
- Implemented on-premise Named Entity Recognition (NER), custom parsing, and automated preprocessing modules
- Developed a secure internal web interface for users to interact with AI-generated results, simulating operator-assistive robotic workflows
- Optimized the solution for edge privacy and local inference, aligned with industrial autonomy and embedded AI deployment
- Applied AI perception to unstructured visual inputs—transferable to real-time robotic vision and fault detection

AI/NLP Engineer – Privacy-Aware Language Models & Automation 2024
Nokia (International) *Remote*

- Designed a real-time LLM input anonymization pipeline using Named Entity Recognition (NER), pattern matching, and contextual redaction
- Focused on AI-augmented user input sanitization, relevant to secure chatbot and operator-assistive applications
- Benchmarked system performance under competition conditions; validated feasibility of edge deployment
- Ranked top 3 out of 50+ international teams, demonstrating robust AI/NLP problem-solving under pressure
- Showcased relevance of NLP and LLMs in secure, interactive human-AI systems such as robotic operator interfaces

Computer Vision Engineer – Real-Time Detection & Edge AI 2023
Welyne *Tunis, Tunisia*

- Built modular command-line pipelines in Bash and Python for developing and evaluating computer vision models
- Integrated YOLOv8 for real-time forest fire detection from camera feeds, simulating industrial visual inspection tasks
- Optimized full CV workflow (data prep, training, inference) for robust, resource-efficient edge deployment
- Applied vision models in constrained environments, aligned with embedded robotic perception use cases
- Contributed to real-time perception and detection systems relevant to aerospace robotics and automation

Embedded Systems Engineer – IoT & Wireless Automation 2022
Atlantic Dunes *Tangier, Morocco*

- Developed a smart irrigation system using ESP32 and LoRa for low-power, long-range data transmission across distributed field nodes
- Integrated soil moisture and temperature sensors with autonomous logic to control irrigation actuators in real time
- Implemented robust LoRa communication architectures (point-to-point and star) for reliable edge-to-central data flow
- Designed a backend dashboard for remote monitoring, manual control, and performance analytics
- Extended a reusable ESP32 C++ library to support LoRa networking, modular sensor integration, and intelligent actuation

Experience applicable to embedded robotics, wireless perception systems, and autonomous field deployments

Technical Team Lead – Student Robotics & Innovation Club Oct 2021 – Oct 2022
ID Club – Université Privée de Fès *Fez, Morocco*

- Organized technical workshops, hackathons, and inter-university training sessions focused on robotics, AI, and embedded systems
- Facilitated peer collaboration on hands-on projects under time and resource constraints, simulating real-world engineering challenges
- Promoted extracurricular R&D engagement and acted as liaison between students and faculty for technical innovation support
- Developed leadership, mentoring, and communication skills applicable to multidisciplinary engineering teams

Software Engineer – Real-Time Inventory Systems & Operator Interfaces Jul 2021 – Oct 2021
SEBN-MA *Tangier, Morocco*

- Designed and developed a web application (**Stock App**) for inventory management using industrial barcode scanners
- Automated component tracking on the production floor with real-time scan-based updates to ensure accurate logistics data
- Provided support for internal IT tools and assisted with diagnostics and production system improvements
- Built user interfaces to improve system usability for non-technical operators, relevant to operator-assistive robotics

Robotics Engineer – Embedded Systems & Autonomous Logic (SPARKY Team) Sep 2020 – Nov 2021
Robotics Club – Université Privée de Fès *Fez, Morocco*

- Participated in embedded system design for autonomous mobile robots in national robotics competitions
- Developed real-time logic strategies and control sequences for robotic actuation and task execution
- Worked with microcontrollers, sensors, and actuators to build functional robotic prototypes
- Collaborated in team-based design and testing cycles, simulating real-world robotic development under constraints

Competitions and Awards

First Prize – 1st AUROBAT Robotics Competition, Al Akhawayn University (Mar 2021)

Winners – 2nd UPF Robotics Competition, Université Privée de Fès (Feb 2021)

Winners – 1st UPF Robotics Competition, Université Privée de Fès (Jan 2020)

Participant – 4th National UPF Robotics Competition (May 2021)

Animator – English Speaking Engineer Competition, UPF (May 2022)

Animator – Let's Speak English Contest, UPF (Mar 2022)

Participant – 3rd on the initial scoreboard in the Nokia Privacy-Guard Hackathon (2024)

Certifications

Artificial Intelligence Analyst – IBM (Jun 2024)

Data Analysis with Python – IBM

MongoDB Basics – MongoDB University

Machine Learning Pipelines with Azure ML Studio – Coursera

Machine Learning with ChatGPT: Image Classification – Coursera

Machine Learning with PySpark: Customer Churn – Coursera

Build a ML Web App with Streamlit and Python – Coursera

Analyser vos données avec Python – Coursera

Build Dashboards in Power BI – Coursera

Create a Sales Dashboard using Power BI – Coursera

Getting Started with Power BI Desktop – Coursera

Prepare, Clean, Transform, and Load Data using Power BI – Coursera

Create a Virtual Private Cloud (VPC) Using AWS – Coursera

Getting Started with Azure DevOps Boards – Coursera

How to Create a Jira SCRUM Project – Coursera

Business Model Canvas – Coursera

Creating a Product-Market Fit with Value Proposition Canvas – Coursera

Blockchain Basics – Coursera

Scripting Bash – Découverte du Langage de Programmation – Coursera

Education

Université Privée de Fès — Fez, Morocco
Engineer Degree in Computer Science (BAC+5) – DATA, IOT, AI, Software Engineering — *2022 – 2025*

Preparatory Classes for Engineering Studies — Fez, Morocco
CPGE – Maths, Physics, and Computer Science (MPSI/MP) — *2020 – 2022*

Languages

Arabic: Native proficiency

French: Fluent – CEFR Level C1 (Advanced professional proficiency)

English: Fluent – CEFR Level C1 (Advanced professional proficiency)