Ali Azami

Embedded Systems Engineer. Embedded AI, Signal Processing, Digital Design (VHDL/FPGA)

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Open to relocation in France and abroad.

PROFILE

Embedded systems engineer working on signal processing and artificial intelligence on constrained targets. I built a complete radar chain, from signal acquisition to real-time classification on an ARM microcontroller, and I now develop the onboard electronics and safety systems used in offshore racing and yachting at Ocean Data System. Background in VHDL and FPGA digital design.

PROFESSIONAL EXPERIENCE

Embedded Systems Engineer (permanent contract)

Ocean Data System (ODS), Lorient, France. September 2026 to present

- Firmware development and maintenance (C# on .NET Micro Framework and TinyCLR, ARM9 GHI G400-D target) for the onboard systems used in offshore racing and yachting.
- Embedded safety systems: heel monitoring and anti-capsize detection, alarms and degraded modes, under the reliability constraints of equipment that cannot be serviced at sea.
- Multi-sensor acquisition chain: inertial attitude unit, wireless sensors, CAN/J1939, NMEA 0183 and 2000, serial and BLE links: drivers, timestamping, logging and monitoring.
- Joint hardware and software debugging: oscilloscope and logic analyser work, bus integrity, noisy 12/24 V supply, then firmware correction.
- Integration and validation on board, in real sea conditions.

Embedded AI and Radar Engineer (apprenticeship, M2)

Vitesco Technologies / Schaeffler France, Toulouse, France. September 2024 to October 2025

- Design and implementation of a complete embedded UWB radar chain, from raw signal acquisition to decision: preprocessing, FFT, feature extraction and real-time CNN classification on an ARM Cortex-M33.
- Reimplementation in C of the signal processing chain initially prototyped in Python, to fit the real-time and memory constraints of the target and remove the dependency on a host PC.
- Training, INT8 quantization and on-target deployment of the models, arbitrating between inference latency, memory footprint and detection quality.
- Field measurement campaigns, analysis of the performance gap between laboratory and real conditions, correction of the chain, technical documentation and daily work in English with international teams.

Embedded AI Engineer (internship, M1)

NXP Semiconductors, Toulouse, France. May 2024 to September 2024

- End-to-end Edge AI workflow: sensor acquisition, model training, quantization and deployment on the eIQ Neutron NPU.
- Optimization of inference on constrained targets, comparison of NPU against CPU execution, and writing of the deployment guide used internally.

Electronics and IoT Engineer (research internship)

EHTP, Casablanca, Morocco. April 2022 to October 2022

- Distributed embedded architecture (Arduino Mega and Raspberry Pi 4) for a tracked mobile robot with a 6-axis arm, YOLOv5 computer vision for object detection and MQTT-monitored autonomous charging.

SKILLS

Programming. C, C++, Python, C#

Embedded systems. Real-time systems, ARM microcontrollers (Cortex-M, ARM9), bare-metal and RTOS, sensor drivers and buses (SPI, I2C, UART, CAN/J1939, NMEA 0183/2000, BLE)

Signal processing. Radar (UWB), FFT and filtering chains, feature extraction, fixed-point and memory-constrained implementation

Embedded AI. CNN training and deployment on MCU, NPU and DSP, INT8 quantization, latency and memory trade-offs, PyTorch, TensorFlow Lite, computer vision (YOLO, OpenCV)

Digital design. VHDL, Verilog, FPGA/SoC, HLS, PSPICE, Simulink

Tools. Git, GitLab, CI/CD, Docker, Linux, CMake, Keil, MCUXpresso, TinyCLR / .NET Micro Framework, oscilloscope and logic analyser

EDUCATION

Engineering Degree, Electronics and AI for Embedded Systems

ENSEEIHT, Toulouse, France. September 2023 to September 2025. Double degree with my home institution in Morocco

Engineering Degree, Electrical Engineering and Electronics

Hassania School of Public Works (EHTP), Casablanca, Morocco. September 2021 to September 2025

Preparatory Classes (MPSI/MP)

IBN Ghazi Preparatory Classes, Rabat, Morocco. September 2018 to June 2020

LANGUAGES AND INTERESTS

Languages. French (bilingual), English (advanced), Spanish (intermediate)

Interests. Offshore sailing, mobile robotics and computer vision, long-distance running

Volunteer work. Erasmus Student Network Toulouse, EHTP Electro-Power (vice president), Enactus EHTP