

OUSSAMA SACI

Robotics Engineer

PROFILE

Versatile and detail-oriented embedded systems and robotics engineer with a strong foundation in low-level programming, system integration, and autonomous systems. Passionate about IoT, cybersecurity, and emerging technologies like blockchain. Currently focusing on large language models (LLMs) and intelligent agents, exploring how they can enhance real-world automation and decision-making. Experienced in designing and developing robust hardware-software solutions for practical robotics applications.

TECHNICAL SKILLS

- **Programming Languages:** C/C++, Python, Java, Assembly.
- ROS1/ROS2.
- Firmware & Embedded Systems Engineering, Embedded Linux, Yocto, RTOS.
- Linux Kernel Modules/Drivers Development.
- Linux System Administration, Docker.
- Artificial Intelligence & Machine Learning – LLMs, AI Agents, Computer Vision.
- Offensive Security & Reverse Engineering.
- **Soft Skills:** Leadership, Independent, Analytical Skills, Adaptable, Meticulous.

EDUCATION

Engineer's degree - "Ambient, Mobile and Embedded Systems/Software" specialization

Private Higher School of Engineering and Technology - ESPRIT
2018 - 2022

LANGUAGES

- English (Proficient)
- Spanish (Intermediate)
- French (Native)
- Arabic (Native)

PROFESSIONAL EXPERIENCE

Enova Robotics - Sousse, Tunisia

Project Manager and Autonomous Navigation Lead Jul 2024 - Ongoing

- Managed robotics projects (AMRs & cobots), overseeing cross-functional R&D teams, resources, and client coordination:
 - Delivered a cobot solution with **intuitive motion teaching** and **collision avoidance**.
 - Directed deployment and lifecycle support of indoor AMR systems.
- Led development of autonomous navigation stacks for AMRs, outdoor robots, and cobots—covering software architecture, hardware integration, and technology selection
- Participated in early-stage project studies, defining technical requirements, feasibility, and solution roadmaps.
- Engaged with suppliers to identify and source components for integration into robotic solutions.
- Oversaw logistics and resource planning to support timely project execution.
- Supervised system deployment, validation, and field support across industrial and service environments.

Keywords: ROS - Mobile Robots - Cobots - Project Management.

Robotics R&D Engineer : Autonomous Navigation Mar 2023 - Ongoing

- Developed navigation stacks integrating **SLAM** and **GPS-RTK**, with custom algorithms and state machines for mobile robots.
- Designed hardware drivers and tuned motor controllers for reliable indoor/outdoor performance.
- Built **Gazebo** and CARLA simulations for navigation, cobots, and synthetic dataset generation.
- Supervised students on **Camera-LiDAR fusion** for perception and **multi-robot coordination** with Open-RMF.

Keywords: ROS - Mobile Robots - Cobots - SLAM - Gazebo - CARLA - Python - C/C++

Robotics R&D Engineer Intern Feb 2022 - Aug 2022

Autonomous Navigation in Outdoor GNSS-Denied Environments for Surveillance Robots

- Developed **6DOF SLAM** with **Cartographer/ROS**, fused GPS-RTK via EKF for localization, and implemented ROS Navigation Stack for path planning.

Keywords: ROS - SLAM - Cartographer - Sensor Fusion - VLP16

Esprit - Tunis, Tunisia

Academic Research Internship - R&D: Pentesting Tool Prototyping (HW&SW) Jul 2021 - Oct 2021

- Investigated WPA2 and USB attack vectors, reverse-engineered ESP32 Wi-Fi driver to enable custom frame injection, and designed a prototype pentest PCB.

Keywords: ESP32 - radare2 - openOCD - GDB - KICAD