OUSSAMA SACI

Robotics Engineer | Autonomous Systems | AI | Project Lead

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PROFILE

Versatile and detail-oriented Artificial Intelligence 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.

PROFESSIONAL EXPERIENCE

Agentic AI Engineer
Jan 2026 - Mar 2026
📍 TUNISIA

- Designed and developed an **AI engine** for automated company research and information gathering, leveraging coordinated Large Language Model (LLM) agents for structured research and analysis.
- Architected **multi-agent pipelines** for scalable data discovery, web intelligence, and knowledge extraction to generate structured insights for business intelligence and decision support.
- Implemented **validation and structured output mechanisms** to ensure reliability, consistency, and production-ready **knowledge generation**.
- Designed and implemented a **ROS project analysis pipeline** to ensure reliability, consistency, and production-ready **knowledge generation**.
- Built a full-stack **ROS code analysis platform** that ingests GitHub projects and produces architecture-aware analysis. Designed an **agentic pipeline** for project discovery, package discovery, static code analysis, launch aggregation, and rules checking. Implemented source code analyzers to extract ROS entities/relations, then collapsed them into queryable interaction graphs. Added agentic tooling and chat over source code and analysis artifacts.

Keywords: LLMs - Data Analysis - Multi-Agent Systems

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Project Manager & Autonomous Navigation Lead
Jul 2024 - Dec 2025
Enova Robotics
📍 Sousse, TUNISIA

- Led cross-functional R&D teams delivering autonomous mobile robots (AMRs) and collaborative robotic (cobot) solutions, overseeing technical strategy, execution, resource allocation, and client alignment.
- Delivered a cobot solution, developing intuitive **motion teaching**, **trajectory planning** and **collision avoidance** algorithms and designed communication framework linking the cobot controller with a Human–Machine Interface (HMI).
- Directed the development, deployment, and lifecycle support of autonomous navigation stacks across AMRs, outdoor robots, and cobots, covering **software architecture**, **hardware integration**, and **technology selection**.
- Worked cross-functionally with AI and Electrical Engineering teams on **system integration**, **sensor calibration**, and **performance optimization** across hardware–software boundaries.
- Participated in early-stage project studies, defining **technical requirements**, **risk assessments**, and **solution roadmaps**.
- Managed **supplier evaluation and component sourcing**, ensuring compatibility, performance, and long-term maintainability of robotic systems.
- 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.

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PROFESSIONAL EXPERIENCE

Robotics R&D Engineer: Autonomous Navigation Mar 2023 - Dec 2025

Enova Robotics 📍 Sousse, TUNISIA

- Architected and implemented **autonomous navigation stacks**, integrating **SLAM**-based localization with **custom algorithms** and **state machines/behavior trees** to manage decision-making and mission execution for mobile indoor/outdoor robots.
- Engineered **low-level control software and hardware drivers** for GPS-RTK and IMU sensors, and architected battery management integration over CAN communication, ensuring robust real-time state estimation, system monitoring, and safety enforcement.
- Designed **hardware drivers** and tuned **motor controllers** to ensure reliable indoor/outdoor performance across varying terrain and environmental conditions.
- Built **Gazebo and CARLA simulations** for navigation, cobots, and synthetic dataset generation for AI model training and evaluation.
- Supervised students on **Camera–LiDAR fusion** for perception and multi-robot coordination with **Open-RMF**.
- Designed and delivered a certified **ROS & Mobile Robotics course at ENISo university**, combining lectures, hands-on workshops, and real-world robot testing, covering simulation, teleoperation, and mobile robot navigation.

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

Robotics R&D Engineer Intern Feb 2022 - Aug 2022

Enova Robotics 📍 Sousse, TUNISIA

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

Academic Research Internship - R&D Jul 2021 - Oct 2021

ESPRIT 📍 Tunis, TUNISIA

Pentesting Tool Prototyping (HW&SW)
- 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

EDUCATION

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

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