Alaa **El Jawad**

SENIOR ROBOTICS SOFTWARE ENGINEER · PRODUCT OWNER

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"Ce que l'on conçoit bien s'énonce clairement, Et les mots pour le dire arrivent aisément."

Summary

Full-stack robotics software engineer and system architect with 8+ years of experience in ROS/ROS2.
Skilled at building localization, SLAM, navigation, and simulation frameworks, from low-level drivers to field deployment.
Practical, hands-on, passionate about robotics, and committed to clean, maintainable code and architecture.

Skills

Programming	C/C++, Python, Typescript, Node.js, MATLAB
Robotic Middleware	ros, ros2, rtmaps, moos
Localization	Kalman Filter, Extended Kalman Filter, UKF, Graph-SLAM, fuse, Ceres, g2o
ROS Stacks	Nav2, MoveIt2, ros2_control, Gazebo (classic & modern)
DevOps	GitHub Actions, JFrog, Docker, git, linux
Project Management	JIRA, Codebeamer, Trello, Gantt, Agile and Scrum practices
Languages	French, English, Arabic, Spanish

Experience

Navya Mobility
Paris, France

SENIOR ROBOTICS ENGINEER & PRODUCT OWNER – LOCALIZATION — *Jun. 2024 - Present*

- Refactored and modularized legacy stack; reduced debugging time by 40%
- Designed localization KPIs and developed framework to track their evolution across releases.
- Built MCAP + Foxglove-based log visualizer with monitoring dashboards
- Improving LiDAR ICP pipeline for better edge-case resilience and multi-sensor fusion.
- Currently designing a new SLAM framework to benefit both localization and mapping teams.

FORSSEA Robotics
Paris/Frontignan, France

LEAD ROBOTICS ENGINEER — *2019 - 2024*

- Led the migration from ROS1 to ROS2 and re-architected the robotic software stack for a commercial underwater ROV.
- Adapted Nav2 and MoveIt2 for full 3D navigation and autonomous docking, enabling rapid algorithm experimentation.
- Migrated codebase to modern C++, introduced unit tests, and set up CI/CD with GitHub Actions, JFrog, and Docker.
- Maintained Gazebo simulation, authored custom plugins, and contributed fixes upstream.
- Participated in sea trials and real-world deployments in Brazil and Norway.
- Guided hiring and mentorship of new engineers; advised CTO on roadmap priorities using JIRA epics.

FORSSEA Robotics
Paris/Frontignan, France

ROBOTICS ENGINEER — *2017 - 2019*

- Owned software architecture in ROS1 for autonomous ROV: path following, visual docking, and localization.
- Developed a flexible EKF implementation used to test various sensor set configurations.
- Implemented visual SLAM with fiducial markers (Aruco).
- Wrote and improved low-level drivers for work-class ROV hardware.

Fiverr / Upwork
Remote

FREELANCE ROBOTICS CONSULTANT — *2018 - Present*

- Supported integration of ROS2 Fleet Management (RMF) for a client's logistics robot prototype.
- Built simulation environments for robotic arms and integrated them with MoveIt2.
- Supported agricultural robotics development, including sensor integration and localization
- Developed and debugged custom hardware drivers.
- Providing ROS2_control training to engineers and teams.

Education

ENSTA Bretagne / Tongji University   *Brest, France / Shanghai, China*

Engineering Diploma - Mobile Robotics   *Sep. 2013 - Oct. 2017*

- Mobile Robotics Engineering
- Exchange Year in Shanghai focused on Software Engineering
- Gap Year as a founding member of Sendinaden

Jean Perrin Lycée   *Lyon, France*

CPGE: Mathematics and Physics   *Sep. 2010 - Oct. 2013*

Three-year intensive post-secondary school preparation in advanced Mathematics and Physics for the competitive entrance examinations to French Graduate Engineering Schools

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