

Lotfi Zeghmi

Robotics Software Developer

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LinkedIn | ResearchGate

Profile

Software developer specializing in mobile robotics, with experience developing, integrating, and commissioning autonomous mobile robots (AMRs). My work spans localization, navigation, control, fleet management, and the software that supports these systems. I also hold software product management responsibilities, including requirements definition, feature prioritization, and development coordination.

Professional Experience

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Software Product Owner

Dec. 2025 – Present

Robotics Developer / Team Lead

Apr. 2021 – Present

- Develop and integrate navigation, localization, and control features for autonomous mobile robots (AMRs) using ROS.
- Contribute to the development and integration of SoftPLC-based automation solutions.
- Contribute to the development of a web application for mobile robot fleet management.
- Serve as Mobile Robotics Team Lead and coordinate the teams involved in development.
- Define software product scope, organize features, and help prioritize them with development teams.
- Help structure the product development process using a Stage-Gate approach, from requirements definition through development planning.

Research Assistant

Jan. 2021 – Present

Université du Québec à Trois-Rivières (UQTR)

- Support students in developing research ideas, structuring their projects, and carrying out work for scientific publications.
 - Provide technical support in robotics, ROS, and simulation for research projects.
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Skills

Software development: C++, Python, ROS, ROS 2.

Simulation and robotics tools: Gazebo, RViz, Foxglove.

Industrial automation: Structured Text (IEC 61131-3), CODESYS, SoftPLC.

Systems and development tools: Linux, Git, CI/CD.

Development practices: Agile methods, version control, and AI-assisted software development.

Education

Master's degree in Electrical Engineering – UQTR	2020
Thesis: robust indoor localization architecture for an automated guided vehicle.	
Master's degree in Automation and Control Systems – USTHB, Algiers	2017

Languages

French, English, and Arabic.

Selected Publications

1. **L. Zeghmi**, A. Amamou, S. Kelouwani, J. Boisclair, K. Agbossou. A Kalman-Particle Hybrid Filter For Improved Localization of AGV In Indoor Environment. *RAAI*, 2022.
2. M. Mohammadpour, **L. Zeghmi**, S. Kelouwani, M. Gaudreau, A. Amamou, M. Graba. An Investigation into the Energy-Efficient Motion of Autonomous Wheeled Mobile Robots. *Energies*, 2021.
3. M. Mohammadpour, S. Kelouwani, M. Gaudreau, **L. Zeghmi**, A. Amamou, H. Bahmanabadi, B. Allani, M. Graba. Energy-efficient motion planning of an autonomous forklift using deep neural networks and kinetic model. *Expert Systems with Applications*, 2024.
4. M. Graba, S. Kelouwani, **L. Zeghmi**, A. Amamou, K. Agbossou, M. Mohammadpour. Investigating the Impact of Energy Source Level on the Self-Guided Vehicle System Performances, in the Industry 4.0 Context. *Sustainability*, 2020.
5. M. Graba, A. Amamou, S. Kelouwani, B. Allani, **L. Zeghmi**, K. Agbossou, M. Mohammadpour. Toward Safer and Energy Efficient Global Trajectory Planning of Self-Guided Vehicles for Material Handling System in Dynamic Environment. *IEEE Access*, 2023.
6. M. Mohammadpour, S. Kelouwani, M. Gaudreau, B. Allani, **L. Zeghmi**, A. Amamou, M. Graba. Energy-Efficient Local Path Planning of a Self-Guided Vehicle by Considering the Load Position. *IEEE Access*, 2022.
7. G. Triki, M. Mohammadpour, S. Kelouwani, **L. Zeghmi**. Energy Efficient and Conflict-Free Path Planning for Autonomous Mobile Robot Fleets via Obstacle Persistence Evaluation and Smart Zoning. *IEEE Access*, 2026.