

ANAS M. N. S. ALQADHI

Mechatronics Engineer | Autonomous Systems, Swarm Intelligence & Embedded AI

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PROFILE SUMMARY

Mechatronics Engineering graduate (Ranked 1st in class, GPA 3.50/4.00) from Fırat University, with hands-on experience leading complex, multi-phase technical projects from simulation through to real hardware deployment. Islamic Development Bank (IsDB) scholarship recipient, admitted to a research internship at ISR-Lisboa (Instituto Superior Técnico), one of the world's leading robotics and AI research centers. Experienced in translating rigorous technical requirements into reliable, real-world operational systems — integrating multi-vendor hardware (LiDAR, RGB-D cameras, flight controllers, embedded AI platforms) into unified, efficient workflows. Brings strong cross-cultural communication skills from delivering corporate training to global professionals across multiple countries, along with fluency in Arabic, advanced English (TOEFL iBT 100), and fluent Turkish — well suited to an international, fast-paced operational environment such as Turkish Airlines' Take-Off International program (Operations track).

EDUCATION

Mechatronics Engineering — Fırat University, Elazığ

2022 – June 2026

GPA: 3.50/4.00 · Ranked 1st in Department · Islamic Development Bank (IsDB) Scholar

Research Internship — ISR-Lisboa, Instituto Superior Técnico

Lisbon, Portugal

Admitted to a research internship at one of the world's leading autonomous systems and robotics research laboratories.

PROFESSIONAL EXPERIENCE

Robotics & AI Lab Intern — TÜBİTAK 1001 Project

Jun 2025 – Oct 2025

RAI Laboratory, Fırat University · Elazığ, Türkiye · Full-time

- Integrated multi-vendor hardware — Go2 quadruped, Velodyne LiDAR, RGB-D camera, and Pixhawk flight controller — onto a Jetson AGX Orin platform, delivering a unified embedded AI system on schedule.
- Designed and optimized ROS2 operational workflows for mapping, perception, and robot control, improving overall system efficiency and reliability.
- Developed SLAM and sensor-fusion pipelines for disaster-response scenarios, coordinating across hardware, software, and testing stages.

Summer Intern

Jul 2024 – Oct 2024

RAI Laboratory, Fırat University · Elazığ, Türkiye

- Contributed to ROS-based robotic software development processes and implemented foundational AI integration tasks.

Corporate Trainer — goFLUENT

Aug 2024 – Present

Geneva, Switzerland · Remote / Part-time

- Delivered corporate communication training to a global client base, including CEOs, directors, and team leaders across multiple countries and industries.
- Designed and led sessions to strengthen presentation skills and professional English performance for international teams.

PUBLICATIONS & CONFERENCE PAPERS

Alqadhi, A. M. N. S., Bajhaw, M. A. M. S., El Muhammed, M., & Ucar, A. (2026). "Drift-Resilient Indoor 3D Mapping in GPS-Denied Environments Using RKO-LIO with Velodyne–Pixhawk Integration in ROS 2." 8th International Congress on Human-Computer Interaction, Optimization and Robotic Applications (ICHORA 2026), Ankara, Türkiye, 21–23 May 2026.

Status: Published on IEEE Xplore (ieeexplore.ieee.org/document/11537209) · Supported by IEEE Türkiye Section & Tokat Gaziosmanpaşa University · Paper No: 331

Alqadhi, A. M. N. S., et al. "PV-STAM: Velocity-Aware Attention for Mapless Deep Reinforcement Learning Navigation in Dynamic Environments." Springer, Autonomous Robots.

Status: Under Peer Review

PROJECTS

TÜBİTAK 2209-A — Autonomous Navigation & DRL-Based Obstacle Avoidance

Ongoing

Project Lead

- Developed a real-time autonomous navigation system on TurtleBot3 + Jetson AGX Orin, integrating SAC/PPO-based deep reinforcement learning with SLAM algorithms.
- Designed an autonomous architecture for path planning and decision-making in complex, dynamic environments, moving systems from simulation to real hardware through a staged curriculum approach.

Multi-Agent DRL — MEC Task Offloading Simulation

Apr 2025 – May 2025

- Built a custom multi-agent simulation environment to train PPO and MADDPG policies under energy/latency QoS constraints.
- Analyzed multi-agent coordination and convergence behavior over long-horizon episodes, gaining experience in system dynamics modeling.

ROS2-YOLO-LiDAR Fusion

Nov 2025 – Jan 2026

github.com/AnasAlqadhi

- Combined YOLO object detection with LiDAR depth projection to build a distance-aware, multi-sensor perception pipeline.

Obstacle-Avoiding Mobile Robot

Feb 2024 – Aug 2024

- Built an autonomous obstacle-avoidance system using TurtleBot3, ROS, and Python, integrating thermal sensor, 2D LiDAR, and camera inputs.

3D ReMaker — Multi-Function 3D Printer Conversion

- Repaired a damaged 3D printer and converted it into a multi-function system capable of paper drawing, wood engraving, and plastic printing.

CERTIFICATIONS & ACHIEVEMENTS

- Islamic Development Bank (IsDB) Scholarship Program — Islamic Development Bank (2022 – Present)
- National Technology Academy — AI Specialization Program — Turkish Ministry of Industry and Technology (Dec 2025 – Present)
- National Technology Academy — Autonomous Driving Technologies — Turkish Ministry of Industry and Technology (2024/2025)
- Reinforcement Learning Specialization — University of Alberta, Coursera (In Progress)
- Machine Learning Specialization — DeepLearning.AI / Stanford / Coursera (Jun–Oct 2024)
- 3rd Place — Undergraduate Engineering Competition (Türkiye) — YDDD (Jul–Sep 2025)
- TOEFL iBT — Score: 100 — ETS (Oct 2025)
- CS50: Introduction to Computer Science — Harvard Online (Jul 2023)

TECHNICAL SKILLS & LANGUAGES

Software & Algorithms: Python, C, C++, ROS/ROS2, SLAM, DRL (SAC, PPO, MADDPG, DDPG), Path Planning, Multi-Agent Systems, YOLO, OpenCV

Systems & Hardware: Embedded AI (Jetson AGX Orin), Velodyne VLP-16 LiDAR, Intel RealSense RGB-D, Pixhawk, Raspberry Pi, Servo Control

Simulation & Modeling: Gazebo, RViz, Linux (Ubuntu), Custom Multi-Agent Simulation Environments, System Dynamics Modeling

Industrial: Robotic Automation, Systems Integration, Sensor Fusion, Industrial Communication

Leadership: Team Captaincy, Project Management, Technical Documentation, Corporate Communication

Languages: Arabic (Native) | English (Advanced – TOEFL 100) | Turkish (Fluent)

REFERENCES

Prof. Dr. Ayşegül UÇAR

Professor, IEEE Senior Member — Founder, RAI Laboratory & Principal Investigator, TÜBİTAK 1001 Project

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