Alexandros FILOTHEOU

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github.com/li9i · Portfolio

Senior Robotics Engineer specialising in the full product lifecycle, from concept and simulation to continuous system integration and field deployment. With 9+ years of experience in integration, state estimation, sensor fusion, SLAM, localisation, autonomous navigation, control, perception, computer vision, and troubleshooting on real hardware. Delivered a 50% boost in localisation accuracy for a fleet of RFID-based inventory robots, achieving centimeter precision. Proven ability to conduct research independently and materialise it into real-world development and deployment, bridging the two worlds to deliver cutting-edge systems with repeatable behaviours.

Skills

English	Native / Fluent (IELTS 8.5 - C2 Proficiency)
Languages	`C/C++`, `Python`, `shell`, `MATLAB/Octave`
Robotics/OS	`Linux`, `ROS/ROS 2`
Tools/Frameworks	`git`, `Docker`, Eigen, Behavior Trees, Gazebo, `CI/CD`, `Qt/Tkinter`, `OpenCV`
Control Techniques	MPC, PID, LQR

- Owner of software integration and git repository maintainer of large-scale R&D projects RoBétArmé, RELIEF, CultureId
- Orchestrated fleet of concrete- and metal-additive manufacturing robots with Behaviour Trees
- Identified bottlenecks and reduced deployment time >10x across fleet by utilising tmux features
- Ensured code quality via googletest and cpplint, continuous integration/deployment via CI/CD pipelines
- Achieved robust ROS-ROS 2 interoperability and communication across multiple machines using Zenoh
- Developed and deployed autonomous ground and aerial platforms in libraries, museums, and outdoors
- Boosted RFID-tag localisation accuracy by >2x by robustifying LiDAR-based filtering via Fourier analysis
- Engaging 2,000+ visitors annually since 2023 by deploying human-robot applications at the AMTh museum
- Delivered production-grade 2D/3D SLAM and collision-avoiding navigation pipelines with intuitive user GUIs using Qt, teb planner, rtabmap, and karto
- Increased survivor rescue probability and gained 2nd place in the international RoboCup Rescue competition of 2015 by developing a C++ wall-hole detection system using a Microsoft Kinect RGB-D camera sensor

Experience

Robotics Software Engineer	ITI-CERTH, Thessaloniki GR	Sep 2023 – Present
Robotics & Control Engineer	ECE Dept., Aristotle University of Thessaloniki GR	Sep 2018 – Mar 2023
Computer Vision Engineer	PANDORA Robotics (Volunteer) Thessaloniki GR	Oct 2013 – Jul 2014

Links

Fast Global Localisation	Code · Demo · Publication
Robust Lidar Odometry	Code · Demo · Publication
Robust and Safe Multi-agent Navigation	Demo· Publication
Software packages	`ros2-utils` · `lama-odom` · `pandora-hd`
Demos/Videos	RELIEF · CultureId

Education

Doctorate · Electrical & Computer Engineering · Aristotle University of Thessaloniki	Sep 2018 – Jun 2023
Master of Science · Systems, Control, and Robotics · KTH Royal Inst. of Technology	Sep 2015 – Jun 2017
Diploma · Electrical & Computer Engineering · Aristotle University of Thessaloniki	Sep 2005 – Jul 2013