FILOTHEOU, Alexandros

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github.com/li9i · Portfolio · References

Robotics and Electrical Engineer specialising in the full product lifecycle, from conception and simulation to continuous system integration, field testing, and delivery. With 9+ years of experience in integration, state estimation, sensor fusion, SLAM, localisation, autonomous navigation, control, perception, computer vision, and troubleshooting on real hardware. Engineered 50% boost in localisation accuracy for fleet of RFID-based inventory robots, achieving centimeter accuracy. Proven ability to work independently and materialise research into real-world results, 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

Experience

Robotics Software Engineer · ITI-CERTH, Thessaloniki GR — Sep 2023 – Present

- Owner of software integration, DevOps, and git repository maintainer of R&D project RoBétArmé
- Engineered development and deployment principles for 9 partners and >50 Dockerised ROS packages
- Orchestrated fleet of concrete- and metal-additive manufacturing robots with Behaviour Trees
- Identified bottlenecks and reduced deployment time >10x across fleet by utilising advanced 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

Robotics & Control Engineer · ECE Dept., Aristotle University of Thessaloniki GR — Sep 2018 – Mar 2023

- Technical Leader of robotics division in large-scale R&D projects RELIEF and CultureId
- 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 at the AMTh museum by deploying human-robot applications
- Delivered production-grade 2D/3D SLAM and collision-avoiding navigation pipelines with intuitive user GUIs using Qt, teb planner, rtabmap, and karto
- Developed and integrated modular codebases for 18+ publications in top-tier IEEE journals/conferences, enabling multi-team experiments, translating novel robotics and RFID research to real-world opportunities

Teaching Assistant · KTH Royal Institute of Technology, Stockholm SE — Sep 2016 – Nov 2016

- *DD2380 - Artificial Intelligence* under Prof. Patric Jensfelt

Volunteering

Computer Vision Engineer · PANDORA Robotics, Thessaloniki GR — Oct 2013 – Jul 2014

- Increased survivor rescue probability and gained 2nd place in the 2015 International RoboCup Rescue competition by developing a C++ wall-hole detection system using a Microsoft Kinect RGB-D camera sensor

Links

Software packages	Global Localisation · LiDAR Odometry · `ros2-utils` · `lama-odom` · `pandora-hd`
Demos/Videos	Global Localisation · LiDAR Odometry · Robust Path-tracking · RELIEF · CultureId
Publications	[Global Localisation] · [LiDAR Odometry] · [Multi-agent navigation] · [Navigation survey]

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