

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 ≈ 10 S/W teams 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
• <i>DD2380 - Artificial Intelligence</i> under Prof. Patric Jensfelt	

Volunteering

Computer Vision Engineer · PANDORA Robotics , Thessaloniki GR	Oct 2013 – Jul 2014
• Increased survivor rescue probability and gained 2 nd 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