

# FILOTHEOU, Alexandros

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[github.com/li9i](https://github.com/li9i) · Portfolio · References

Robotics and Electrical 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 50% boost in localisation accuracy for fleet of RFID-based inventory robots, achieving centimeter precision. Proven ability to work independently and materialise research 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

## Experience

<b>Robotics Software Engineer</b> · ITI-CERTH, Thessaloniki GR	Sep 2023 – Present
• Owner of software integration, DevOps, and git repository maintainer of R&D project <a href="#">RoBétArmé</a>	
• 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	
<b>Robotics &amp; Control Engineer</b> · ECE Dept., Aristotle University of Thessaloniki GR	Sep 2018 – Mar 2023
• Technical Leader of robotics division in large-scale R&D projects <a href="#">RELIEF</a> and <a href="#">CultureId</a>	
• Developed and deployed autonomous ground and aerial platforms in <a href="#">libraries</a> , <a href="#">museums</a> , and <a href="#">outdoors</a>	
• Boosted RFID-tag localisation accuracy by >2x by robustifying LiDAR-based filtering via Fourier analysis	
• Engaging 2,000+ visitors annually since 2023 at the <a href="#">AMTh</a> museum by deploying <a href="#">human-robot applications</a>	
• 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 codebases for 18+ publications in top-tier IEEE journals/conferences, enabling multi-team experiments, translating novel robotics and RFID research to real-world opportunities	
<b>Teaching Assistant</b> · KTH Royal Institute of Technology, Stockholm SE	Sep 2016 – Nov 2016
• <i>DD2380 - Artificial Intelligence</i> under <a href="#">Prof. Patric Jensfelt</a>	

## Volunteering

<b>Computer Vision Engineer</b> · <a href="#">PANDORA Robotics</a> , Thessaloniki GR	Oct 2013 – Jul 2014
• Increased survivor rescue probability and gained 2 <sup>nd</sup> place in the 2015 International RoboCup Rescue competition by developing a <a href="#">C++ wall-hole detection system</a> using a Microsoft Kinect RGB-D camera sensor	

## Links

Software packages	<a href="#">Global Localisation</a> · <a href="#">LiDAR Odometry</a> · <a href="#">ros2-utils</a> · <a href="#">lama-odom</a> · <a href="#">pandora-hd</a>
Demos/Videos	<a href="#">Global Localisation</a> · <a href="#">LiDAR Odometry</a> · <a href="#">Robust Path-tracking</a> · <a href="#">RELIEF</a> · <a href="#">CultureId</a>
Publications	[ <a href="#">Global Localisation</a> ] · [ <a href="#">LiDAR Odometry</a> ] · [ <a href="#">Multi-agent navigation</a> ] · [ <a href="#">Navigation survey</a> ]

## Education

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