

# 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 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  $\approx 10$  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

- *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 2<sup>nd</sup> 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	<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

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