

FILOTHEOU, Alexandros

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github.com/li9i · [google.scholar](https://scholar.google.com/citations?user=li9i) · [Portfolio](#) · [References](#)

I am an organised and meticulous person that is driven by curiosity and obedience, particularly in the robotics domain. The things I am good at I am good at because I love working with them; their common denominator is that they are either problems or solutions to problems—and I love solving problems: either through engineering, programming, mathematics, or otherwise. I am efficient, trustworthy, and dependable.

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

[integration](#) [ROS 2](#) [state estimation](#) [localisation](#) [autonomous navigation \(1\) \(2\)](#) [control](#) [computer vision](#)

Some achievements so far

- Deployed €10M robotics construction project [RoBétArmé](#) after 2 years of continuous integration between 12 partners at [EDF's Hermillon hydroelectric powerplant](#) in cooperation with Bouygues Construction
- Engaging 2,000+ visitors annually since 2023 at the [AMTh](#) museum by deploying [human-robot applications](#)
- Engineered 50% boost in localisation accuracy for fleet of RFID-inventorying robots, achieving cm accuracy
- Identified bottlenecks and reduced deployment time >10x across fleet of additive manufacturing robots
- Reliable and robust ROS-ROS 2 interoperability and communication across multiple machines using [Zenoh](#)
- One of only eighteen authors of single-authored papers presented at IEEE IROS'24 (1,587 total)

Representative work

- [Software packages](#) [Localisation](#) · [Odometry](#) · [Estimation](#) · [ros2-utils](#) · [lama-odom](#)
- [Demos/Videos](#) [Localisation](#) · [Odometry](#) · [Estimation](#) · [Robust Path-tracking](#) · [RELIEF](#) · [CultureId](#)
- [Publications](#) [\[Localisation\]](#) · [\[Odometry\]](#) · [\[Estimation/Control\]](#) · [Navigation: \[Multi-agent\] \[Survey\]](#)

Experience

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

- Owner of S/W integration, DevOps, deployment, and git repository maintainer of R&D project [RoBétArmé](#)
- Engineered development and deployment principles for 12 S/W teams and >50 Dockerised ROS packages
- Orchestrated fleet of concrete- and metal-additive manufacturing robots with Behaviour Trees
- Ensured code quality via googletest and cpplint, continuous integration/deployment via CI/CD pipelines

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

- Owner of everything robotics in large-scale R&D projects [RELIEF](#) and [CultureId](#)
- Developed and deployed autonomous ground and aerial platforms in [libraries](#), [museums](#), and [outdoors](#)
- Delivered 2D/3D SLAM and collision-avoiding navigation pipelines with intuitive user GUIs using Qt, [teb_local_planner](#), [rtabmap](#), [karto](#), and [amcl](#)
- Developed and integrated modular codebases for 18+ publications in top-tier IEEE journals/conferences

Volunteering

Open-source contributions to ROS 2

- [hitch_estimation_apriltag_array](#) · Estimation of the angle between a vehicle and its hitched trailer
- [pointcloud_to_ply](#) · Transformation of a pointcloud into a mesh and storage in .ply or .obj format

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

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