

# FILOTHEOU, Alexandros

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[github.com/li9i](https://github.com/li9i) · [google.scholar](https://scholar.google.com/citations?user=Li9iAAAAJ) · 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 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

## Education

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|---|--|---------------------|
| <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 |