Alexandros Filotheou

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I have 7+ years of hands-on experience in robotics which includes SLAM, Localisation, Autonomous Navigation, Control, Computer Vision, and general integration, problem-solving, and troubleshooting. These I have acquired in real conditions with real robots as well as in simulation, working for research projects funded by the European Commission and the Greek State, or through volunteering. I am proficient in ROS and ROS 2, in versioning through git, virtualisation via Docker, and also in MATLAB/Octave, all the while under Linux. My primary coding language is C++ and my secondary Python.

Demos / videos	`cbgl` · `fsm` · `cultureid` · `relief` · `multi-mpc` · Portfolio
Indicative software packages	`cbgl` · `fsm-lo` · PANDORA Hole Detection
Indicative publications	[`cbgl`] · [`fsm`] · [`multi-mpc`]

Experience

Robotics Engineer · CERTH, Thessaloniki GR — Sep 2023 – Present
- Head of software integration and sole git repository maintainer of EU-funded R&D project RoBétArmé
- Organised and deployed ROS and ROS 2 nodes and other software in over 50 Docker images over real & simulated ground mobile bases and supporting computing units
- Bridged ROS with ROS 2 in terms of interfaces and over multiple machines

Robotics and Control Engineer · ECE dept., Aristotle University of Thessaloniki GR — Sep 2018 – Mar 2023
- Technical lead of everything robotics in NSRF R&D projects Relief and CultureId
- Implemented and deployed SLAM, autonomous exploration & navigation, 3D reconstruction, and corresponding friendly GUIs for real & simulated ground and aerial mobile bases
- Decreased RFID-tag localisation error by 4x by decreasing and robustifying LIDAR-derived particle and Kalman filter robot pose error by 7x
- Implemented and deployed mobile robot-human gui-interactive applications which have served more than 3000 visitors at the Archaeological Museum of Thessaloniki from early '23 to date
- Coauthored & supported implementation behind eighteen high-ranking journal & conference publications

Teaching Assistant · KTH Royal Institute of Technology, Stockholm SE — Sep 2016 – Nov 2016
- Examiner for *DD2380 - Artificial Intelligence*, supervised by Prof. Patric Jensfelt

Voluntary Experience

Computer Vision Engineer · PANDORA Robotics, Thessaloniki GR — Oct 2013 – Jul 2014
- Implemented and deployed detection of holes on walls through Microsoft's Kinect RGBD camera in `C++` in the context of the international competition RoboCup Rescue

Education

Doctorate · Electrical & Computer Engineering · Aristotle University of Thessaloniki — Sep 2018–Jun 2023
Master of Science · Systems, Control, and Robotics · KTH Royal Institute of Technology — Sep 2015–Jun 2017
Diploma · Electrical & Computer Engineering · Aristotle University of Thessaloniki — Sep 2005–Jul 2013

Skills

Languages	`C/C++`, `Python`, `shell`, MATLAB/Octave
{Meta-}Operating Systems	`Linux`, `ROS 2`, `ROS`
Tools	`git`, `Docker`, Eigen, Behavior Trees, Gazebo, `CI/CD`, `Qt / Tkinter`, `OpenCV`
Control Techniques	MPC, PID, LQR

Languages

English Fluent — IELTS Score 8.5 (Greek Native)

References

Dr. Antonis Dimitriou · Coordinator of R&D projects · (+30) 697 88 96 350 · antodimi@auth.gr

For a complete list of references, whether they be supervisors or coworkers, visit

`https://github.com/li9i/cv/tree/master/references`