Adrián Campos

Robotics Software Engineer

adricampos10@gmail.com notjustrobotics.com linkedin.com/in/adrián-campos-díez/
youtube.com/@adricampos10

PROFILE

Software engineer with 4+ years of hands-on experience in robotics, autonomous systems, computer vision and autonomous navigation, building with ROS / ROS2, C++ and Python, and taking robotic systems from concept to production deployment.

EXPERIENCE

Mo-Sys Engineering Ltd · London, UK — Nov 2020 – Jan 2025
Robotics Software Engineer & Technical Project Lead

- Led end-to-end software development of an industrial AGV that navigates autonomously indoors and outdoors, from system architecture through on-site production deployment.
- Acted as the main technical point of contact for clients: gathered requirements, ran live demos and on-site trials, and translated customer needs into technical specifications and delivery plans. Coordinated work with a mechanical engineer on hardware design and integration.
- Developed the ROS / ROS2 integration for StarTracker, Mo-Sys's proprietary optical tracking system, enabling its use as a localisation source in robotic platforms.
- Implemented hybrid global localisation: StarTracker indoors (~1 mm accuracy) and RTK GPS outdoors (cm-level, base–rover over radio / NTRIP), with automatic switching at indoor/outdoor transitions, including when reversing.
- Developed local navigation in ROS with the TEB local planner, handling static and dynamic obstacles detected by four Intel RealSense D435i depth cameras.
- Modelled and implemented tricycle and differential-drive kinematics (ros_control diff_drive_controller); integrated a 48 V brushless DC drive and encoders over Modbus RS485, plus auxiliary actuators via Arduino / L298N and rosserial on an Intel NUC.
- Built a warehouse AMR navigating with move_base + TEB, with 3D obstacle mapping via a Spatio-Temporal Voxel Layer from RealSense point clouds.
- Used Isaac Sim / Omniverse to build photorealistic warehouses and benchmark perception algorithms (instance segmentation).
- Built a real-time person tracker (YOLOX + MMPose) that gives each person an ID and steers a robotic camera to follow them.
- Automated long-duration device testing with a HAN'S ROBOT arm controlled from ROS / MoveIt.

Key technologies: Python · C++ · ROS · ROS2 · ros_control (diff_drive_controller) · TEB / move_base · Intel RealSense · StarTracker · RTK GPS / NTRIP · Modbus RS485 · Arduino / rosserial · NVIDIA Isaac Sim / Omniverse · YOLOX · MMPose · MoveIt · Docker · Linux · Git

University of Alcalá — Jan 2019 – Jul 2019
Graduate Researcher — Computer Vision Systems

- Conducted research on movement detection system using 3D point cloud data, applied to the NASA Valkyrie robot.
- Developed C++ algorithms within a ROS framework for real-time data, enabling robust perception in dynamic environments. Focused on point cloud segmentation, clustering, geometric feature extraction, and object tracking.

Key technologies: C++ · ROS · PCL · OpenCV · Matlab · Camera Tracking

Everis / NTT Data — Dec 2017 – Jun 2018
Software Engineer — Financial Infrastructure

- Worked in a capital markets technology team supporting a trading and risk management platform (Calypso).
- Developed new functionalities in Java, resolved production incidents, and performed functional and stability testing.

Key technologies: Java · Calypso · Junit · Git

EDUCATION

Bachelor's Degree in Computer Engineering — 2013 – 2019
Universidad de Alcalá · Madrid, Spain

CERTIFICATIONS

RYA Day Skipper (Practical & Shorebased) · Competent Crew
Royal Yachting Association · Nomad Sailing, The Solent

LANGUAGES

Spanish — Native
English — Full professional proficiency