ANDERSON DEL CASTILLO CRIOLLO

Robotics / ROS 2 Engineer

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SUMMARY

ROS 2 Developer specialized in autonomous navigation, localization, and perception for mobile robotics. Hands-on experience building production-oriented software stacks (Nav2, SLAM, sensor fusion) for an autonomous forklift platform, from simulation to real hardware deployment. Strong foundation in embedded systems integration, computer vision, and Docker-based deployment on edge compute (NVIDIA Jetson).

EXPERIENCE

ROS 2 Developer, Forklift Robot B.V. *March 2026 - September 2026*

Full-time | Remote | Goes, Zeeland, Netherlands

- Developed the autonomous navigation stack (ROS 2, Nav2) for an electric forklift robot, including dynamic obstacle avoidance and path planning in warehouse environments
- Implemented SLAM-based localization (RTAB-Map) using Intel RealSense stereo cameras and EKF sensor fusion for robust pose estimation
- Built and validated the perception pipeline in Gazebo Ignition simulation prior to deployment on physical hardware
- Deployed and containerized the full robotics stack (Docker) on NVIDIA Jetson AGX Orin for real-time onboard compute
- Integrated IMUs, encoders, and microcontrollers with the ROS 2 stack for closed-loop robot control

Mechatronics Engineering Assistant *2025 (1 month)*

Cali, Colombia

- Supported mechatronics engineering tasks with a primary focus on solar panel systems

Specialized Technician in Precision Measuring Equipment, Medition Precision S.L. *2024 - Present*

On-site in Spain (2024) then Remote from Colombia (ongoing, freelance basis)

- Diagnosed, repaired, and maintained precision measuring instruments for dairy milking systems (pulsation testers, flow meters), performing calibration to ensure measurement accuracy and equipment compliance

EDUCATION

Mechatronics Engineering, Universidad Autonoma de Occidente *2020 - 2025*

Cali, Colombia

PROJECTS

Autonomous rover for monitoring urban hydroponic gardens

- Designed a mobile robot for monitoring environmental variables in urban vertical gardens, equipped with humidity, temperature, and light sensors, with autonomous navigation in small agricultural environments

Early warning system for forest fires using artificial vision and ROS

- Built a ROS 2 system with YOLO to detect fire and people in real time, calculate risk level based on proximity to the fire, generate automatic alerts, and display a basic visualization interface

Rainwater irrigation project - community gardens

- Carried out in collaboration with the Red de Huertos y Huerteritos de Jamundi, supported by Universidad Autonoma de Occidente as a social impact initiative

Sensor network for a quadrupedal robotic platform with ROS 2 and CAN communication

- Designed and built a bio-inspired quadrupedal robotic platform for locomotion and perception research. Integrated force sensors, IMU, camera, GPS, and electrical monitoring over CAN Bus, plus an interactive Python GUI to visualize real-time data, camera feed, and a 3D robot model using ROS 2

SKILLS

Programming: Python, C++, Arduino, JavaScript, MATLAB
Frameworks and libraries: ROS / ROS 2, OpenCV, YOLO, Tkinter, VTK, CustomTkinter
Design and simulation: SolidWorks, Proteus, Eagle, KiCad, Fusion 360, Simulink, Ultimaker Cura, Gazebo
Embedded systems: Arduino, Raspberry Pi, Jetson
Communication protocols: CAN, I2C, UART, SPI
AI and computer vision: CNN, image processing
Automation and control: Sensors, actuators, DC/stepper motors, PID, H-bridge
Dev tools: Docker, Git, Linux, AWS (EC2, S3)
Project management: RUP, Scrum, PRISMA, Karl Ulrich, House of Quality (HOQ)

LANGUAGES

Spanish - Native | English - B2

PRESENTATIONS AND EVENTS

- Expo Milleros 2025, Pontificia Universidad Javeriana Cali - Poster presentation: Sensor network for a bio-inspired quadrupedal robotic platform
- Speaker, UAO Research Day, 21st RedCOLSI Meeting, Valle del Cauca Node - Development of a rover robot for monitoring urban gardens; implementation of a sensor network for applied research on the existing quadrupedal platform at UAO