

Jorge Benavides Macías

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Junior Embedded Engineer passionate about contributing to full embedded development design. Skilled in microcontroller programming (ARM, STM32, ESP32), PCB design (Altium/Eagle), and IoT prototyping. Eager to grow within collaborative teams on projects spanning hardware/software co-design, testing, and deployment.

Work Experience

Junior Cybersecurity & Microelectronics Engineer

Jul. 2024 – Present

InnovaIRV

Malaga, Spain

- Led cybersecurity needs assessments for over 15 Andalusian technology companies through executive/CISO interviews, identifying critical gaps in network security, access control and incident response.
- Authored 150-page technical report with prioritized countermeasures as regional cybersecurity roadmap to Andalusia's Government.
- Technical execution of a full project lifecycle (€600k budget) for *Impulso&Crece2024* digitalization initiative funded by regional authorities.

R&D Jr. Electronic Engineer

Mar. 2024 – Jul. 2024

Quandum AeroSpace S.L.

Malaga, Spain

- Designed a 15W wireless charging system for vertical wind turbines using Altium, reducing component count by 30%.
- Implemented RTOS-based motor control on ESP32.
- Collaborated on mechanical design (CATIA), PLC automation, and Linux-based version control system administration.

Jr. Electronic Engineer

Sept. 2023 – Mar. 2024

DHV Technology

Malaga, Spain

- Designed solar panels for space applications using SolidWorks (3D modeling) and Altium (PCB design).

Projects

PCB Design for Robotic Gripper | C, ARM, PSoC, LabView, Eagle | DOI

- Designed and manufacturing a PCB for data acquisition from resistive tactile sensors integrated into a robotic manipulator's gripper. This involved full process design, including component selection, material procurement, and PCB trace routing, it incorporated a PSoC in a QFN package.
- Developed a master-slave architecture in C for ARM, collecting data from multiple sensors via SPI and UART communication, with debugging facilitated by LabView.

LaCaja | C, MQTT, MongoDB, JavaScript, HTML, CSS, NodeRED | News - Web - Repository

- Earned the opportunity to visit Google's Malaga offices and present the project.
- Crafted an AI-driven escape room experience featuring "Chiquito de la Calzada", offering participants a chance to win a position at Google.
- Designed 2/5 games (software & hardware), managing PCB soldering and sensor connections.

Digital Design | VHDL, git | Repository

- Proficient in designing, simulating, and synthesising digital circuits using VHDL.
- Developed diverse testbenches, from debouncers to factorial calculation systems, and integrated MicroBlaze IP core into a Mastermind-like game.

Education

University of Malaga

Malaga, Spain

Master's Degree in electronic systems for smart environments

Sep. 2024 – Present

University of Malaga

Malaga, Spain

Bachelor in electronics, robotics & mechatronics. Major in robotics & automation

Sept. 2018 – Sept. 2023

Technical Skills

Languages: Spanish (native), English proficient (B1)

Embedded Systems: STM32, ESP32, AVR, RTOS, PCB Design (Altium/Eagle/KiCAD) and 3D CAD Model (CATIA, SolidWorks)

Programming: C/C++, Python, Bash, VHDL

Tools: Git, Docker, Vivado, LabVIEW, MATLAB, Emacs