Jorge Benavides Macías

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Work Experience

Jr. Engineer in Cybersecurity & Microelectronics July 2024 – Present
Fundación Innova IRV *Malaga, Spain*

- Ensuring the sustainability of the association's activities, processes, and management methods (tools, association status)

R&D Jr. Electronic Engineer March 2024 – July 2024
Quandum AeroSpace S.L. *Malaga, Spain*

- Designed wireless power transmission systems for vertical wind turbines using Altium Designer (schematic/PCB).
- Developed embedded control systems with STM32 microcontrollers, ESP32 (RTOS), and FPGAs
- Collaborated cross-functionally: mechanical design (CATIA), PLC automation, Linux server administration, and prototyping.

Jr. Electronic Engineer Sept. 2023 – March 2024
DHV Technology *Malaga, Spain*

- As a member of the electrical department, I design solar panels for space applications and other power subsystems for various platforms. I use tools such as SolidWorks for 3D modelling and Altium for PCB design.

Projects

PCB Design for Robotic Gripper | *C#, Bash, git, NuGet, GitHub Packages* | DOI

- Designed a circuit board for acquiring data from tactile sensors integrated into a robotic manipulator's gripper.
- Led circuit design, component selection, material procurement, and PCB trace routing.
- Developed C code for PSoC ARM, implementing SPI and UART communication protocols.

LaCaja | *C, MQTT, MongoDB, JavaScript, HTML, CSS, NodeRED* | News - Web - Video - 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.
- Desined two games both software and hardware managing soldering and 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)
Programming Languages: C, C++, Python, Bash
Frameworks: Arduino, ESPRESSIF, STM32, AVR, FPGA (Digilent, Altera)
Development Tools: Git, Docker, EMACS, VS Code
Engineering Software: Eagle, KiCad, Altium, SolidWorks, CATIA, LabView, MATLAB, Vivado, Xilinx, Quartus