Joaquín B. González

Telecommunication and Electronics Engineer

TECHNOLOGIST

PROFILE

As an organised and highly creative individual, I love the challenges of working within a dynamic and fast paced working environment. The most important skill I got on university was not the technical themselves, but the ability of learn quickly. The knowledge gained from my experience at CERN and working with sensitive clients such as Airbus has shaped my ability to be always looking for improvements in performance, reducing costs and working under deadlines, but at the same way, to adapt quickly, work efficiently, side-thinking creatively and work effectively as part of a team or on my own.

CONTACT

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SKILLS

OS / computing / Networks / IT / Infrastructures

Softw & Firmw (LabVIEW, Java, .NET, C/C++, C#...)

Intrumentation / PCB / Electronics / Automatization

Customer relat. / Consultancy / Training

Architecture / Prototyping / Product dev.

Project mng. / Team building / Research

EDUCATION AND LANGUAGES

UNIVERSITY OF SEVILLA

BSc in telecommunication and *electronic* engineering and *MSc in Telematics*
Python/Typescript developer by *EPFL*
PMP certified by PMI

Spanish (Native)
English (Professional - C1)
French (Elementary - A2/B1)

A bit about me (in general) and the position

A results-driven Senior Innovation Engineer and PMP-certified leader with over 16 years of experience pioneering R&D solutions at the intersection of hardware and software. My career is defined by a unique ability to architect and deliver complex systems from concept to functional prototype, bridging strategic foresight with hands-on technical execution. I possess deep expertise in **embedded systems**, **IoT ecosystems**, and **FPGA-based design**, complemented by proficiency in **full-stack development** and **cloud integration**. I have a proven track record of leading cross-functional teams using hybrid **Agile-Waterfall methodologies** to transform vague business needs into validated **Proofs of Concept** and strategic **technology roadmaps**. My work consistently involves **technology forecasting**, optimizing system architectures for performance and cost, and mentoring teams to foster a culture of innovation and technical excellence.

Some technical skills that you may find interesting

Programming & Firmware: C/C++, C#/.NET, Python, JavaScript, LabVIEW, VHDL (beginner), Java, Bash
Frameworks & RTOS: .NET Framework, .NET Core, FreeRTOS, ESP-IDF, GitLab CI/CD
Cloud & DevOps: AWS, Azure, Docker
Hardware & Tools: Altium, Autodesk Inventor, MATLAB, VMware, Xilinx FPGAs
Methodologies & Standards: PMP, Agile, Waterfall, SDLC, pFMEA

LEM International | Senior Innovation Engineer

Feb22– Jun24

Reporting to Dominik Schláfi (Head of Innovation)
dotted line to Ian McNutt (VP Advanced Engineering)

Spearheaded strategic innovation initiatives within the corporate Innoteam, focusing on identifying and prototyping next-generation sensor and metering technologies. My role was pivotal in defining the company's 3-5-10 year technology horizon, translating emerging trends in **IoT**, **AI**, and **smart grids** into actionable R&D projects. I led cross-functional teams through the entire innovation lifecycle, from **technology scouting** and feasibility studies to the development of high-fidelity **Proofs of Concept**. I specialized in architecting complex systems that integrated ultra-low-power embedded design with wireless communications and cloud data pipelines, effectively bridging the gap between advanced R&D and global product management strategy.

➢ Architected and delivered a high-precision clock synchronization system for PMU applications, achieving sub-35µS accuracy over Wi-Fi hotspots using **ESP32** microcontrollers and **FreeRTOS**.
➢ Led the end-to-end development of self-powered and energy-harvesting IoT sensor nodes, encompassing **firmware development,** mechanical design, **power management**, and secure **cloud integration** via **AWS**.
➢ Directed the creation of automated test frameworks in **Python** and **C#** to validate performance and reliability of **IoT edge devices**, streamlining the **DVT** process.
➢ Advised Global Product Management on innovation strategy and portfolio alignment based on in-depth market and **technology forecasting** analysis.

COGITO INSTRUMENTS | AI / Solution engineering manager

Directly reporting to CEO Philippe Lambinet and COO Eric Jumelet

Aug18–
Aug21

Led the strategic pivot and full-cycle development of advanced industrial AI solutions, transitioning the company from proprietary platforms to a scalable, standalone hardware-software ecosystem. Managed multidisciplinary teams in the development of **FPGA-based neural network accelerators** and **machine vision systems**, directly interfacing with C-level executives and key partners to align technical execution with market demands.

➢ Engineered the **Core1** platform, a modular **AI-capable hardware** system from architecture to certification-ready prototype, managing **ARM+FPGA co-design**, custom communication protocols, and production.

➢ Developed the DCblue machine vision system for robotic guidance, later productized by partner SunRock Technologies.

➢ Implemented **Agile** project management, reducing time-to-market by 9 weeks and delivering the beta platform 5 weeks ahead of schedule.

CERN | R&D / Electronics engineer

Jul15–
Jun18

Oversaw by Dr. Michael Moll (SSD team lead) and Dr. David Barney (CMS HGCAL project lead)

Contributed to high-stakes international research projects, designing and optimizing complex data acquisition and control systems for particle physics experiments. Developed a deep expertise in **radiation-hardened sensor characterization**, **high-throughput data pipelines**, and **system integration** within multidisciplinary, global collaborations.

➢ Redesigned core **DAQ** software for the SSD team, implementing a parallel architecture that increased data acquisition speed by 8x.

➢ Architected a 50 TB/week data storage pipeline for the CMS HGCAL experiment, ensuring zero downtime during critical beam tests.

➢ Applied **EMI mitigation** strategies to improve the **SNR** by 23 dB in sensor readout systems and co-authored a peer-reviewed paper on RPC detector optimization.

AICIA | R&D / Project engineer

Oct08–
Jun15

Reporting to Dr. Francisco Rogelio Palomo

Built a foundation in market-driven R&D through the design and development of advanced **FPGA-based laser interrogators** and fiber-optic sensing systems. Collaborated with industrial partners to transform research prototypes into patented, commercialized products.

➢ Designed the control system for the **TMBragg** series of laser interrogators via **FPGA** and **VHDL**, resulting in a patented design still sold by Temai Ingenieros.

➢ Led the **PROSAVE2** project, developing a hybrid ultrasonic-FBG system for structural health monitoring and achieving a -60 dB **SNR** through advanced signal processing in **LabVIEW** and **MATLAB**.

➢ Executed projects applying both **Agile prototyping** cycles and **Waterfall** documentation for deliverables.

UNIVERSITY OF SEVILLA | SYSADMIN / IT responsible

Aug10–
Jun15

Reporting to Dr. José Manuel Gordillo (Head of Fluid Mechanics research group)

Managed the IT infrastructure and high-performance computing resources for the Aerospace Engineering department, developing robust skills in **systems administration**, **network security**, and **workflow automation** that underpin all software development efforts.

➢ Administered Linux server clusters for supercomputing tasks, redesigning private networks and implementing security protocols.

➢ Automated administrative and research support workflows using **Bash** and **Java** scripting.