Product and Project Portfolio – Carlos Muñoz

Introduction to the Product and Project Portfolio of Carlos Muñoz

This portfolio collects the most significant projects of my 20+ year engineering career — not as a list of responsibilities, but as evidence of real impact.

I am an Industrial Engineer (UPV), MSc from Cranfield University, and MBA from ESIC, currently serving as Director of Innovation & Product Development at EMAC® Grupo, a Spanish industrial leader supplying products to 110+ countries. Over the years I have led product launches that today represent a significant share of the company's global revenue — the result of consistent, long-term planning rather than one-off bets.

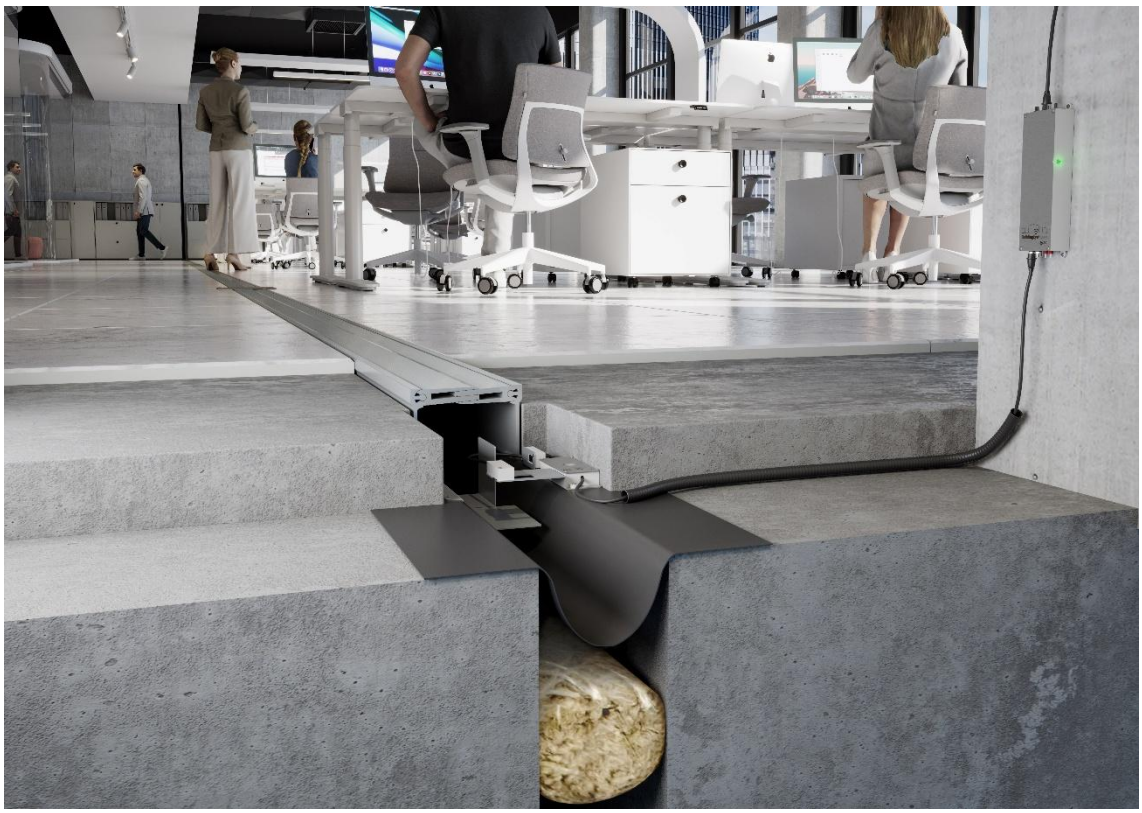
In recent years I have added a new layer to my work: the design and implementation of AI-powered systems for business automation, competitive intelligence, and autonomous agent orchestration. I work daily with tools like Claude, n8n, ChatGPT, Gemini, and others to build solutions that generate real operational value.

This portfolio shows not just what I have done, but how I think and what I deliver.

Why a Project Portfolio?

A traditional CV lists roles and responsibilities. This document shows outcomes. Each project here was selected because it demonstrates a specific capability: technical depth, cross-functional leadership, market validation, or business impact. The projects are the result of team effort — I led them, but never alone.

Project: BuildingEye® System



Project Description:

The BuildingEye® System represents a cutting-edge technological solution designed for monitoring structural health in buildings. This advanced system is strategically integrated into the structural joints of buildings, where it measures critical parameters such as displacement, vibration, inclination, temperature, and humidity. These measurements are essential for diagnosing potential pathologies or anomalies preemptively, thus preventing accelerated deterioration and ensuring the stability and safety of the structure.

BuildingEye® utilizes Internet of Things (IoT) technology, allowing continuous monitoring and full integration with smart building operations. Users can access real-time critical structural data from the building's control room (SCADA) or remotely via any internet-connected device. This system not only enhances the safety and longevity of the building but also provides engineers and technicians with detailed insights into the building's behavior through its digital twin capabilities.

My Role and Contributions:

As the project leader for the BuildingEye® System, my involvement spanned from the initial conceptualization to the final stages of market implementation. My journey began with validating the feasibility of the original idea through the development of a functional prototype. This process included sourcing and selecting components, supplier engagement, designing electronic circuits, programming, web development, database mangement and utilizing 3D design for additive manufacturing of custom parts.

After assembling and validating the prototype, I led efforts to introduce the system to industry stakeholders, securing validation from key sector agents. My responsibilities extended to drafting the business plan, considering costs, investment needs, sales expectations, competitive positioning, and brand strategy. I also spearheaded the search

and management of an industrial partner, the Polytechnic University of Valencia, ensuring the system's alignment with industry standards and expectations.

During the industrialization phase, I oversaw the assembly processes, developed sales and marketing tools, and engaged in proactive market validation by securing initial clients and projects. As part of ensuring the project's continuity and legacy, I was involved in hiring and training a Project Manager dedicated to the ongoing development and implementation of the BuildingEye® System.

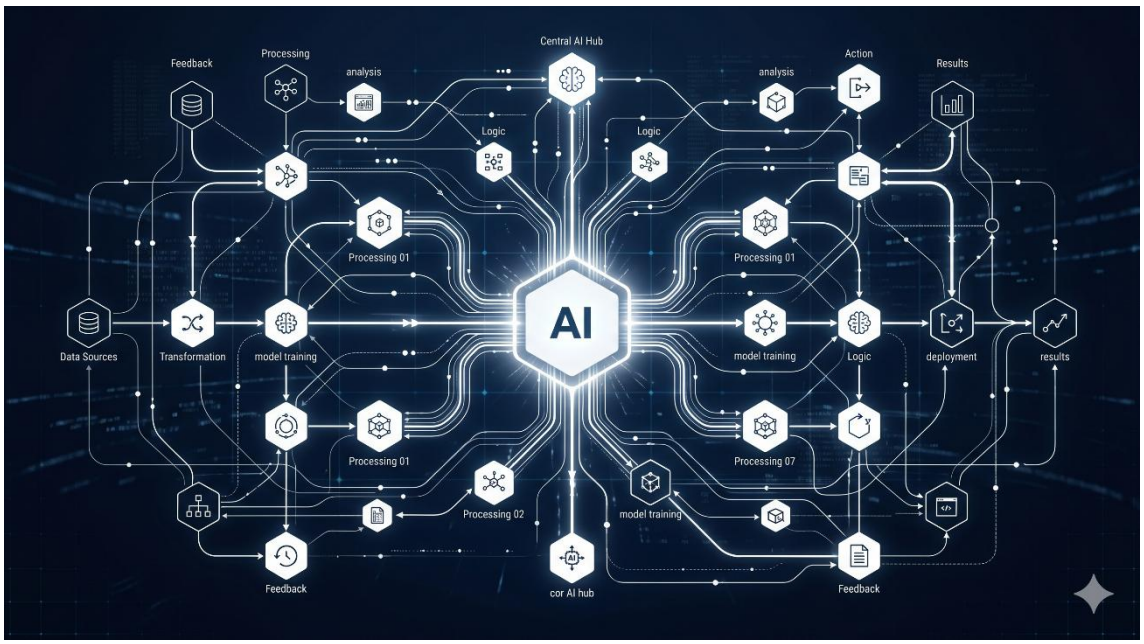
This comprehensive role not only highlighted my technical skills and project management capabilities but also emphasized my ability to lead a project from an abstract idea to a tangible product that significantly impacts the sustainability and safety of building infrastructures.

References

For more information visit web page of the solution: https://www.emac.es/en/building-eye-system

Solution Owner: EMAC® Complementos.

Project: AI Implementation & Automation – EMAC® Grupo



Project Description:

As part of EMAC® Grupo's digital transformation strategy, I led the design and implementation of a series of AI-powered systems to automate and enhance key business processes. The initiative covered commercial intelligence, competitive monitoring, and internal workflow automation, positioning EMAC® as an early adopter of applied AI within the industrial construction sector.

My Role and Contributions:

As the project leader and sole architect of the AI strategy, I designed and built end-to-end systems including: an automated competitor monitoring workflow tracking 15+ companies across websites and social platforms on a weekly basis; an AI-powered commercial prospecting agent using autonomous workflow orchestration (n8n + LLM) to identify and qualify leads; an internal sales analytics reporting tool integrating KPI tracking with automated alerts; and an AI-based product recommendation application. I also developed and orchestrated multi-agent autonomous systems capable of executing complex research and prospecting tasks with minimal human intervention. All systems were designed for scalability and real business impact, not as proof-of-concept exercises.

AI Stack Used:

Claude · Claude Code · ChatGPT · Gemini · n8n · Twin.so · Midjourney · NotebookLM · HeyGen · Gamma · ElevenLabs

References

Solution Owner: EMAC® Complementos.

Product: Novovierteaguas SP System

Product Description:

The Novovierteaguas SP is an innovative façade solution that addresses a common but critical issue in building construction — the failure of drip edges. This system was designed to solve the problems of aesthetic degradation, moisture penetration, and premature aging of buildings caused by inadequate drip edges. The Novovierteaguas SP features a unique double waterproofing system that not only protects buildings more effectively but also enhances their exterior appearance. This project received the prestigious RedDot Award in the category of urban design, recognizing its innovative approach to combining functionality with aesthetic appeal.

My Role and Contributions:

As the initiator and product manager of the Novovierteaguas SP, my role began with identifying a market need for a more efficient and aesthetically pleasing drip edge solution. I conceptualized the solution and collaborated closely with the technical department to refine the designs. I led all testing phases to verify the system's functionality, ensuring that it met our high standards for performance and durability.

Following the successful testing phase, I guided the team through the development process, overseeing the creation of marketing tools and training materials for the sales team. My leadership was instrumental in bringing this groundbreaking solution to market, contributing significantly to its success and the recognition it has received.

References

For more information visit web page of the solution: https://www.emac.es/en/system-novovierteaguas-sp-outdoor

Product Owner: EMAC® Complementos.

Project: EMAC® App

Project Description:

EMAC® has developed an innovative technological tool within the structural joint product family aimed at revolutionizing the market. The EMAC® Structural Joint App, available for both Android and iOS platforms, utilizes augmented reality technology to allow users to visualize the final outcome of structural joint installations in buildings. This app features a comprehensive configurator that advises clients on the best solutions tailored to their specific needs. It represents a unique offering in the industry, enabling architects, engineers, and project managers to prescribe, select, and visualize solutions in a smarter, more efficient manner compared to traditional methods. The app also contributes to cost savings, time efficiency, and enhanced sustainability by minimizing the need for physical sample dispatches with instant digital solutions.

My Role and Contributions:

As the project leader, I oversaw all phases of the app's development, from defining its functionalities to managing its launch. My responsibilities included defining the app's utilities, selecting and managing the software development provider, and serving as the liaison between the external provider and our internal team. I conducted extensive testing to ensure the app's performance met our high standards and supported the marketing team in crafting the promotional strategy. Additionally, I led the official presentation and trained the sales teams, ensuring a smooth transition and integration of this tool into our operations.

References

For more information visit web page of the solution: https://www.emac.es/en/emac-app

Solution Owner: EMAC® Complementos.

Project: Innova y Actúa Brand

Collection Description:

Innova y Actúa is a multifaceted digital platform that I founded to explore and share innovations across various fields. It encompasses a blog, newsletter, podcast, LinkedIn profile, and YouTube videos, creating a comprehensive ecosystem where I produce and disseminate content focused on innovation. This brand serves as a testing ground for cutting-edge technologies, including AI voice cloning, digital video avatars, and AI-driven text development, allowing me to experiment and refine these tools while engaging with an audience interested in the future of technology and innovation.

My Role and Contributions:

As the sole creator and face of Innova y Actúa, I am responsible for all aspects of content creation, from conceptualization to production and distribution. I write the articles, record the podcast episodes, create the videos, and manage the social media interactions, ensuring a consistent and engaging presence across all platforms. My role involves not only content creation but also the technical integration of new AI tools, providing a firsthand look at the potential and practical applications of artificial intelligence in media.

References

For more information visit web pages:

- https://innovayactua.com/
- https://www.youtube.com/@innovayactua2678
- https://open.spotify.com/show/5Kd73yiZZWNZbViaoxDJym

Project Owner: Carlos Muñoz Sanfeliu

Project: ASTRA® new material development

Material Description:

ASTRA® represents a groundbreaking development in construction materials, designed to meet the most demanding environmental and mechanical challenges. This extra-durable polymer was engineered to withstand extreme conditions such as UV rays, outdoor humidity, extreme heat (enabling bending), freezing temperatures, and exposure to oils, chemicals, and even chlorinated or saltwater environments. Its exceptional impact resistance also sets a new standard in the industry. The introduction of ASTRA® has opened up possibilities for applications previously deemed unfeasible with existing materials, providing solutions to long-standing construction challenges.

My Role and Contributions:

As the project leader, my involvement was critical from the conceptual phase through to market implementation. I worked closely with the raw material supplier to define the essential properties of ASTRA®. My role extended to designing, test, leading the development and implementation of market-driven solutions that were both technically and economically viable. I managed cross-functional teams to ensure that the material not only met our rigorous standards but also aligned with the needs and expectations of our clients.

References

For more information visit web page of the solution:

https://www.emac.es/public/Attachment/2022/3/technical-data-sheet-astra-emac.pdf

Solution Owner: EMAC® Complementos.

Project: Eclipse® Collection

Collection Description:

The Eclipse Collection by EMAC® represents a pivotal innovation in decorative lighting, specifically addressing the growing trend of using LED strips for illumination. In a market flooded with options, the Eclipse® Collection sets itself apart by embracing the principles of indirect lighting and the KEEP (keep it simple) strategy. This collection consists of nine distinct solutions developed over the years, each designed to offer both aesthetic appeal and practical functionality. The Eclipse Collection has not only become one of the flagship offerings of EMAC® but has also played a crucial role in boosting the company's revenue.

My Role and Contributions:

As the Chief Innovation Manager, I was instrumental in the entire development of the Eclipse® Collection. My responsibilities ranged from identifying unique selling propositions that could differentiate us in the market to actualizing these concepts into tangible products. I led the development, evangelization, and ongoing refinement of the collection, ensuring that it not only met but exceeded market expectations. My efforts were key in establishing the collection as a benchmark in the sector and in significantly enhancing the company's financial performance.

References

For more information visit web page of the solution: https://emac.es/en/eclipse-collection

Solution Owner: EMAC® Complementos.

Project: AI Implementation & Automation – EMAC® Grupo

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References

Solution Owner: EMAC® Complementos.

Project: CPenergia

Project Description:

CPenergia was founded with the mission to enhance energy efficiency within businesses by conducting comprehensive energy audits. Our objective was to pinpoint energy consumption across various operations and guide companies through cost-saving transformations. By identifying inefficiencies and recommending optimized practices, CPenergia played a crucial role in promoting sustainable energy use within the corporate sector.

My Role and Contributions:

As a co-founder, my role encompassed a broad range of responsibilities alongside my business partner. We developed specialized tools for measuring energy consumption to provide detailed insights into how businesses could minimize their energy use. Our tasks included identifying savings opportunities, actively seeking out clients, conducting audits, and presenting our findings and recommendations. This end-to-end involvement ensured that we not only identified potential areas for improvement but also supported clients throughout the process of implementing these changes.

References

Web are not available so far.

Solution Owner: Carlos Muñoz and Paco Plaza.

Project: energyBox by Siliken

Project Description:

energyBox is an innovative photovoltaic kit developed by Siliken to meet the growing demand for easy-to-install solar solutions in residential settings. Designed for international distribution, the kit includes a comprehensive SAAS web configurator that allows installers to tailor the installation to any roof type. This tool provides installers with a customized offer, all necessary components, and expected production metrics, simplifying the installation process and enhancing efficiency.

My Role and Contributions:

As the Product Manager for energyBox, my responsibilities encompassed overseeing the entire product lifecycle from concept to market delivery. I was involved in defining the kit's specifications, developing the web-based configurator, and managing logistics through an external warehouse to ensure efficient distribution. Post-development, my focus shifted to supporting the sales team, guiding them in engaging and securing sales from photovoltaic installers worldwide. My role was pivotal in not only bringing a sophisticated product to market but also ensuring it met the needs and expectations of both installers and end-users across different regions.

References

For more information visit this web page: https://www.ecoticias.com/energias-renovables/67480_siliken-desarrolla-sistema-fotovoltaico-ajusta-cualquier-tejado

Solution Owner: Siliken SA.

Product: Solar Tracker Development

Project Description:

This project involved the development of a sophisticated two-axis solar tracker capable of supporting 48 photovoltaic panels. The primary goal was to maximize the energy production of photovoltaic installations by optimizing the panels' orientation relative to the sun, thereby increasing their efficiency and output throughout the day.

My Role and Contributions:

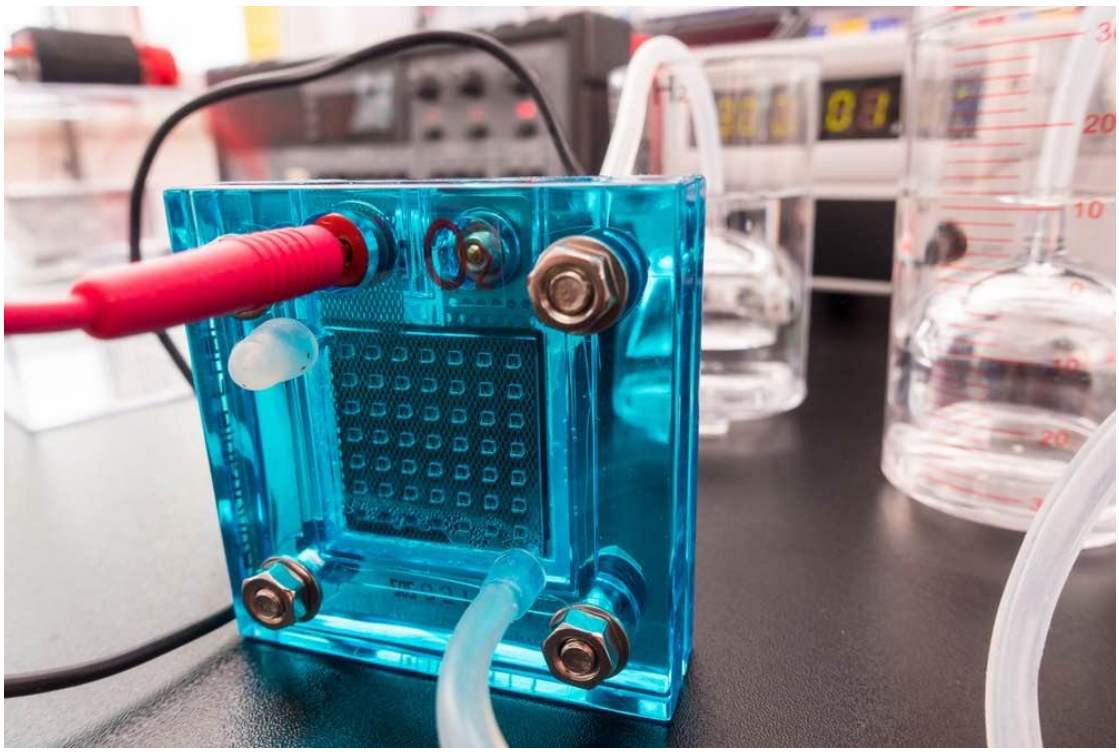
As the project lead, I was responsible for the full lifecycle of the solar tracker's development. My duties encompassed the initial design phase, where I conceptualized the structural and mechanical aspects of the tracker. This was followed by detailed structural calculations to ensure stability and durability under various environmental conditions. I managed the entire process of supplier sourcing and component selection, which was critical for balancing cost-efficiency with quality. Additionally, I oversaw the assembly of prototypes to validate our designs and make necessary adjustments before moving to full-scale production. My role required a combination of technical expertise and project management skills to bring this innovative product to market effectively.

References

Web are not available so far.

Solution Owner: Siliken SA.

Project: Hydrogen Fuel Cell Research



Project Description:

At Siliken's R&D department, I was part of an international research team focused on advancing hydrogen fuel cell technology for energy storage. Our primary objective was to develop this technology through the creation of energy via electrolyzers, aiming to provide a sustainable and efficient alternative for storing and utilizing renewable energy.

My Role and Contributions:

As an engineer within this multidisciplinary team, my responsibilities centered around conducting extensive research and development through iterative testing and error analysis. My role involved collaborating closely with engineers from different disciplines and countries, which enriched the project with diverse perspectives and expertise. The work required a deep understanding of electrochemical processes, materials science, and system engineering to innovate and refine our approaches to hydrogen fuel cell development.

References

Web are not available so far.

Solution Owner: Siliken SA.