



M. Sc. Juan Antonio Monzón Vázquez

Assoc. Director of Engineering | AI Officer

- Sülzgürtel 63, 50937 Cologne, Germany
- ☎ (+49) 17661436432
- ✉ jamonzonv@gmail.com
- in linkedin.com/in/jamonzonv

PERSONAL

Birthday	29.01.1987
Birthplace	Mexico
Citizenship	German & Mexican
Status	Married, 2 children

LANGUAGES

Spanish	Native
German	Full Professional
English	Full Professional

CORE COMPETENCIES

- Team Leadership & Cross-functional Coordination
- AI Strategy & Implementation
- Project & Product Management
- Mechanical System Design
- Design Transfer & Production Scale-up
- IVD / CE Regulatory Compliance
- Strategic Vision & Operational Excellence
- Process Optimization & QA

IT & TECHNICAL TOOLS

CAD Software	●●●●●
MS Office / VBA	●●●●●
Python / CPython	●●●●■
MATLAB	●●●●■
SAP PM Module	●●●●■
ANSYS FEA	●●●●■
AI Platforms & LLMs	●●●●●
SQL / Data Tools	●●●●■

PROFESSIONAL SUMMARY

Multidisciplinary engineering leader with 10+ years driving product innovation across biotech, medtech, and industrial sectors. As Associate Director of Engineering at Singleron Biotechnologies and newly appointed **Chief AI Officer**, I lead a team of 5 engineers across the full product lifecycle — from R&D; and prototyping to design transfer, CE-marked production, and quality assurance. Expert in translating cutting-edge science into scalable, compliant hardware products and in deploying AI solutions that transform internal workflows. Trilingual (ES/DE/EN) with dual German-Mexican citizenship, two granted patents, and a track record of delivering Made-in-Germany quality hardware at globally competitive costs.

WORK EXPERIENCE

Associate Director of Engineering | Chief AI Officer

Singleron Biotechnologies GmbH · 01.2023 – Present

- Lead a team of 5 engineers across development, prototyping, testing, design transfer, production ramp-up, QC, and technical documentation — delivering measurable uplift in output quality and speed.
- Spearheaded the **Made-in-Germany production launch** of Singleron's tissue dissociator hardware instruments, achieving full **CE compliance** and managing all **IVD Class A & C regulatory processes**, enabling EU market entry.
- Drove a significant **reduction in unit production costs** through supplier renegotiation, process standardisation, and BOM optimisation — improving gross margin on hardware products.
- Improved **quality assurance metrics** via systematic FMEA, IQ/OQ/PQ qualification protocols, and implementation of ISO 13485-aligned QMS documentation.
- Appointed as company's first **Chief AI Officer**: architecting and deploying an internal AI strategy — including LLM-based workflow automation, AI agents for process streamlining, custom internal tooling, and staff AI literacy programmes.
- Overseeing R&D projects with budgets exceeding €500,000, ensuring cross-functional delivery on time and within scope across engineering, sales, and operations.
- Built and equipped a cutting-edge **engineering lab and prototyping workshop** from the ground up, establishing the physical infrastructure for Singleron's hardware product expansion.

Design Engineer – Industrial Engineering

Miltenyi Biotec B.V. & Co. KG · 05.2016 – 12.2022

- Led subprojects developing **clinical-grade disposable products for NGS**, managing end-to-end design from concept through design freeze, design transfer, and production qualification.
- Drove design transfer and production implementation of assembly tools and industrial equipment, documenting processes and performing IQ/OQ/PQ qualification to regulatory standards.
- Awarded **two patents**: "Perfusion Device For Biological Tissue" (Nov 2016) and "Needle Head Design and Process for Dissociation of Cells in Organ Tissue" (EU 16196797.1-1501) — both owned by Miltenyi Biotec.
- Collaborated across R&D, regulatory, and manufacturing teams to ensure compliant, scalable product designs ready for global clinical deployment.

Design Engineer & Development Engineer

Bohrtec GmbH · 09.2014 – 04.2016

- Designed tunnel boring machines and developed innovative drill heads for micro-tunneling applications.
- Provided technical client support for the Latin American market, bridging engineering and commercial needs.

METHODOLOGIES

- ISO 13485 / IVD Regulation
- CE Marking (Class A, C)
- FMEA / Risk Management
- IQ / OQ / PQ Qualification
- Design Freeze & DHF
- Design Transfer & Scale-up
- Agile / Scrum
- BOM Optimisation
- AI Agent Architecture
- LLM Workflow Integration
- Prompt Engineering

PATENTS

Perfusion Device For Biological Tissue

Miltenyi Biotec · Nov 2016

Needle Head Design & Process for Dissociation of Cells

EU 16196797.1-1501 · Miltenyi Biotec

CONTACT

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EDUCATION

M.Sc. Mechanical Engineering

University of Kassel, Germany · 2012 – 2014

- Specialisation: Mechanics & Automation.
- Master Thesis: "Mapping of Multiphase Fluid Flow through a Horizontal Pin Hole Experiment" — GPA 3.7.

TRAINING & CERTIFICATIONS

Applied AI & Intelligent Systems Programme

Claude / Anthropic Platform · 09.2025 – 02.2026

- Comprehensive hands-on programme covering LLM integration, AI agent development, prompt engineering, API orchestration, and enterprise AI deployment strategies. Applied to real-world biotech and business automation use-cases.

Training in Conflict Management & Leadership

The Knowledge Academy (DE) · 07.2024 – 09.2024

- Leadership, conflict resolution, and advanced management techniques for cross-functional teams.

Agile Project Management & Project Management Basics

Miltenyi University (DE) · 01.2022 – 05.2022

- Agile methodologies, Scrum framework, and project planning fundamentals.

Training in Piping Design, Planning & Layout

Universidad Nacional de Colombia · 03.2021 – 05.2021

- Design and layout of industrial piping systems conforming to international standards.

KEY ACHIEVEMENTS

- **CE & IVD Compliance:** Led full CE marking and IVD Class A & C regulatory process for Singleron hardware, enabling EU commercial launch.
- **Made in Germany Launch:** Established German-based production infrastructure for tissue dissociator instruments, replacing China-sourced manufacturing.
- **Production Cost Reduction:** Delivered measurable BOM and process cost savings through supplier optimisation and manufacturing process redesign.
- **AI Officer:** First appointed AI Officer at Singleron — currently deploying AI agents, LLM tools, and automation pipelines across internal operations.
- **2 Patents Granted:** Named inventor on two patents covering novel biomedical device designs for cell tissue dissociation (Miltenyi Biotec).
- **Engineering Lab Build-out:** Designed and equipped Singleron's engineering lab and prototyping workshop from zero, enabling in-house hardware iteration.
- **R&D Budget Ownership:** Managed and delivered R&D projects exceeding €500K budget with cross-functional team accountability.

ADDITIONAL

Entrepreneurial background: Founder of **Nothing Watch** (luxury watch brand) and **MV Wealth** (investment advisory, est. 2020). Active interest in algorithmic trading, quantitative finance, precision watchmaking, and culinary arts.