Javier Peña González León, GTO, México

R&D Electromechanical Engineer, MSc Candidate

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Professional Summary

R&D Electromechanical Engineer with proven experience building advanced prototypes in engineering and science.

My core strengths are in **CAD/CAE, Applied Physics,** and **Additive Manufacturing**, skills which I have leveraged upon and practiced to build prototypes such as low-consumption microcars (FIBO 011), Braille keyboards with 3D-printed resin keycaps, and even 4.2K cryostats and particle accelerator systems for applications in physics, manufacture and medicine.

I have experience working both in the US and in Mexico with multicultural, multidisciplined teams, being able to translate their unique perspectives and scientific specifications into engineering projects and blueprints that accommodate budgets while keeping the best possible manufacturing practices, up to Ultra-High-Vacuum (UHV) requirements and any ANSI / ISO / MIL standard as required by the project.

Through engineering, some of the projects I have contributed to have been awarded over **$2M USD in SBIR funding** in collaboration with **Fermilab and Argonne National Lab** for both Phase I and Phase II.

After freelancing as an engineer in Mexico for about 3 years under the business name “Estudio AMAGI”, I am now looking to focus on my strengths, through work in Applied Research or a Doctorate program for research.

My project portfolio and design gallery are available on my website: **estudioamagi.com/PORTAFOLIO/**

Education

- **MSc - Applied Science (Particle Accelerator Engineering)** – Universidad de Guanajuato *(Thesis accepted, to be defended January 2026)*
- **BE - Electromechanical Engineering** – Universidad Iberoamericana León

Skills

- **CAD/CAE and 3D Design**: SolidWorks, Inventor, ANSYS, Blender (Geometry Nodes and Low-Poly)
- **Manufacturing:** Machining (Manual and CNC), Vacuum Brazing, Additive Manufacturing (FDM, SLA/DLP), Metrology, GD&T per ASME Y14.5
- **Electronics & Automation**: Arduino, PLC, Electronic Instrumentation and Sensors / Automation
- **Programming**: Python, C
- **Languages**: Spanish (Native), English (C1), French (Beginner)

Professional Experience

Estudio AMAGI – León, GTO, México
Engineering and 3D Printing Freelancer (2023 – Present)

- Designed and prototyped a **Braille keyboard** in collaboration with CONALEP students. (Ongoing, V2)
- Conceptual design of a **Magnetron for Particle Vapor Deposition** for metallic coatings. (UGTO, UAS research collaboration)
- Reverse-engineered **UV LED modules** for cutout labeling process in the shoe industry.
- Developing **3D-printed surgical training kits** in collaboration with HRAEB. (Patent pending, collaboration with client)

RadiaBeam Technologies (RBT) – Los Angeles, CA, USA
Mechanical Engineer | (2021 – 2023)

- Developed a **portable "dry-conductive" Cryostat** for **Niobium SRF applications** (Fermilab).
- Designed and built **two 9-MeV electron LINACS** for medical applications.
- Simulated a **"dry-conductive" cryogenic network** for a **HTS Superconducting Undulator Magnet** (SBIR Phase I funds awarded).
- Designed an **RF Beam Sweeper** for **Rare Isotope Beams at ATLAS Facility** (SBIR Phase II funds awarded).
- Assisted aerospace clients in the **X-ray inspection of additively manufactured metal parts** with RBT's electron LINAC setup. Additionally, designed and implemented a standard RBT process for such inspection jobs.
- Designed and commissioned **3D-printed metal waveguides** per MIL standards.

TDP Mobility – León, GTO, México
Co-Founder | Mechanical Designer (2017 – 2020)

- Designed and developed the **low-gas-consumption microcar "FIBO 011"** *(Video trailer available on YouTube)*.
- Led **vehicle integration and fabrication** of **three fiberglass body kits**.
- **Semi-finalist** in the **2019 Santander Prize for Entrepreneurial Innovation**.

Grupo Plasma Automation – León, GTO, México
Mechanical Engineering Intern (2017)

- Provided **CAD modeling & engineering support** for automation stations at **Mercedes, Nissan, and Mazda**.

University of Guanajuato – Guanajuato, México
Intern | Research & Development (2016)

- Digitized **USPAS Pillbox RF cavities** for simulations and analysis.
- Installed and calibrated a **CNC router** for precision machining.

Certifications

- **Physics (USPAS - United States Particle Accelerator School)**
  Introduction to Particle Accelerators and Laboratory, Accelerator Physics, Superconducting Accelerator Magnets
- **Engineering**
  Introduction to Aerospace Engineering, Astronautics and Human Spaceflight (MIT, edX) Additive Manufacturing (MIT xPRO), Engineering Simulations (ANSYS, Cornell / edX), Fundamentals of Fluid Power (U. Minnesota, Coursera)
- **Business & Innovation**
  Juventudes con IDEA (Top 10 Completion), Digital Marketing (TRAFFICKERS Mexico), Business Incubation (Fundación Beca & ENDEAVOUR), Digital Sales (Innovación de León), Introduction to Funding and Venture Capital (Innovación de León, Grupo Kirschner)

Projects & Achievements

- Contributed to securing **$2M+ in SBIR funding** with **Fermilab & Argonne National Lab**
    - **RF Beam Sweeper for Purifying In-Flight Produced Rare Isotope Beams at ATLAS Facility**: https://inspirehep.net/literature/2175341
    - **Fermilab teams up with small business RadiaBeam to help commercialize advanced accelerators**
        - https://news.fnal.gov/2024/04/fermilab-teams-up-with-small-business-radiabeam-to-help-commercialize-advanced-accelerators/
        - https://www.linkedin.com/posts/radiabeam-technologies_particleaccelerator-accelerator-lab-activity-7072009332594257921-t9T7/
        - https://www.fermilabcommunity.org/wp-content/uploads/2024/04/Chris-Edwards-CAB-Meeting-v2.pdf

- Mechanical Engineering / Vacuum Brazing of two-**9 MeV LINACS** for **medical imaging** (PMB - ALCEN, private customer)
    - Mock accelerator, representative layout: https://www.instagram.com/estudioamagi/p/DKI_doosoHq/
    - Mock, custom-electron source with CF flanges for visualization: https://www.instagram.com/estudioamagi/p/DJ1xNA9gv4h/
- Developed and built a **low-emission microcar**, recognized as semifinalist in the **2019 Santander Prize for Entrepreneurial Innovation**.
        - https://www.youtube.com/watch?v=CCVJJ8NmaxQ

- Earned two incubation certifications for **Techzal 3D / Estudio AMAGI** (Juventudes con Idea, Fundación Beca/ENDEAVOR)
    - CTR >5% steadily sustained in marketing campaigns for Google Ads and Meta
- Started a patenting process for a **Surgical Training kit for Abdominal Fascia** with a client from HRAEB (Hospital Regional de Altas Especialidades del Bajío)

REFERENCES

- Dr. Georfrey Humberto Israel Maury Cuna – Universidad de Guanajuato | israel.maury@ugtomx.onmicrosoft.com
- Dr. Cristhian Valerio Alfonso – Autonomous University of Sinaloa | cvalerio@uas.edu.mx
- Heather Crawford – RadiaBeam Technologies - linkedin.com/in/heather-lin-crawford-2b76a8119
- Seiji Thielk - RadiaBeam Technologies - linkedin.com/in/seiji-thielk
- Dr. Edgard Lozada - Hospital Regional de Altas Especialidades del Bajío - +52 1 477 274 5801