HECTOR LOPEZ GONZALEZ

R&D Engineer • Robotics and AI applications • Mechatronics & Sports-Tech Innovation
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Innovative Mechatronics Engineer with over 6 years' experience in R&D, prototyping, and applied AI/robotics, integrating mechanical, electrical, and software engineering to deliver novel solutions. Skilled in embedded systems, advanced control, IoT, and human-robot interaction, with hands-on expertise in developing prototypes from concept to implementation. International experience across Mexico and Australia, with strong communication and leadership skills. Passionate about applying my engineering skills to create high-impact products in robotics, wearable tech and innovation.

--SKILLS--

- **CORE Expertise:** Advanced Control Systems, Robotics, Embedded Systems, Artificial Intelligence, Circuit Design, Instrumentation, Virtual Reality, Rapid Prototyping, IoT, Human-Machine interfaces, Wearable systems.
- **PROGRAMMING LANGUAGES:** C, C#, C++, Embedded C, Embedded C++, Python, Micro Python, React.js, SQL, Ladder Logic.
- **SOFTWARE/TOOLS:** MATLAB, Simulink, Autodesk Inventor, Siemens TIA Portal, Rockwell CCW, Octoplant, Dream Reports, JMobile, Unity, MQTT, ViCON Nexus.
- **PROFESSIONAL:** Innovation, Problem-solving, Critical Thinking, Cross-Functional Collaboration, Project Leadership, Communication, Adaptability, International Experience.
- **LANGUAGES:** Spanish (Native), English (Proficient C2 – IELTS 8.5), German (Beginner), Italian (Beginner)

--- EDUCATION ---

- **M.Sc. in Engineering** - Universidad Iberoamericana, Mexico (2020 – 2022, GPA: 9.9/10, Honorific Mention)
- **B.Sc. in Mechatronics & Production Engineering** - Universidad Iberoamericana, Mexico (2014 – 2019, GPA 9.2/10, Academic Excellence)
- **Exchange Program** - University of Wollongong, Australia (2018)
- **Diploma in Business** - Greenwich College, Australia (2024 – 2025)

------------------------------------ PROFESSIONAL EXPERIENCE ------------------------------------

iOpen | New South Wales, Australia
SALES AND APPLICATIONS ENGINEER | Nov 2024 – Present
- Designed, implemented and presented complex automation systems showcasing advanced control and IoT solutions.
- Delivered training programs to enhance client adoption of innovative systems.

Universidad Iberoamericana | Mexico City, Mexico
UNIVERSITY LECTURER | Jan 2022 – Dec 2023
- Taught a Master's-level course on Virtual Reality & Haptic Devices Programming.
- Delivered lectures on Circuits Engineering and Embedded Systems to over 100 students, achieving a 95%+ satisfaction rating.

POSTGRADUATE RESEARCH ASSISTANT | Jan 2020 – Mar 2022
- Developed 4 VR environments and 3 haptic devices, leading to 1 publication, 2 international conference presentations and a radio presentation.
- Mentored postgraduate researchers on advanced control systems, robotics and virtual reality, contributing to the successful completion of 3 key research projects.

UNDERGRADUATE RESEARCH ASSISTANT | Aug 2015 – Jan 2020
- Implemented embedded systems for robotics and multi-agent systems, contributing to the completion of 5 successful research projects.

Ultrasist S.A. de C.V | Mexico City, Mexico
LEAD FRONT-END ENGINEER | Mar 2023 – Dec 2023
- Directed a team of 6 developers, delivering 2 large-scale applications using React.Js and improving performance by 50%.

SENIOR SOFTWARE ENGINEER | Jul 2022 – Mar 2023
- Delivered APIs using C# and UI improvements using React.Js under tight deadlines, enhancing client systems.

Freelance (self-employed) | Mexico City, Mexico
EMBEDDED & CONTROL SYSTEMS ENGINEER | Apr 2020 – Jun 2022
- Designed process control and IoT systems for multiple clients, overseeing projects from concept to delivery.
- Increased productivity of a face mask production system by 100%; delivered and deployed 17 IoT-enabled security drone ports across Mexico.

All Robot | Mexico City, Mexico
EMBEDDED & CONTROL SYSTEMS ENGINEER | Apr 2019 – Dec 2020
- Designed embedded software, PLCs, and automation testing systems for the education and automotive industries.

-- SELECTED PROJECTS --

- **Self-Driving Car Prototype (AI + Computer Vision)** – Designed and programmed a microcontroller-driven autonomous vehicle using micro python with openCV for computer vision, advanced control algorithms and object detection.
- **Drone Port Systems (IoT + Automation)** – Engineered and deployed 17 drone port systems across Mexico, integrating IoT sensors, automation, and embedded control.
- **Virtual Reality Kayak Simulation (Rehabilitation R&D)** – Co-developed a VR environment with a robotic seat and a novel haptic paddle using Unity and embedded systems to assist CVA patients with balance rehabilitation.
- **Face Mask Production Optimization** – Engineered process improvements to double productivity in an automated industrial system during COVID-19.

-- PUBLICATIONS --

- López-González, H. et al. *Formation Control for Thermal Multi-Agent Systems.* IEEE URUCON (2021). [DOI: 10.1109/URUCON53396.2021.9647108]

------------------------------------ EXTRACURRICULAR ACTIVITIES ------------------------------------
- Professional Soccer: Third-division player for Atlante F.C., C.D. Guadalajara, and Club Santos Laguna (2010 – 2015)
- Player for United Wolves AFC Division 1, First Grade, Australia (2024 – 2025)
- Master's degree student representative - Postgraduate Technical Council - Universidad Iberoamericana (2021-2022)
- Events director and public relations - Student Association of Electronics Engineering - Universidad Iberoamericana (2016-2018)
- Volunteering: Youth soccer coaching (Malinalco community, Mexico, 2019), earthquake relief resource management (2017)