

Fernando Hernández Loeza

Mechatronics Engineer | Full Stack Developer | Professional License: 16-012339-L | Guadalajara, Jalisco

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SKILLS

JavaScript, TypeScript, Python, SQL, React, Next.js, Astro, Node.js, Express.js, PHP, Git, GitHub, Docker, PostgreSQL, Supabase, MongoDB, MySQL, RESTful APIs, Azure, Bootstrap, Tailwind CSS, HTML, CSS, Three.js, Vite, Vitest, ESLint, MQTT, Arduino, Raspberry Pi, Agile, Scrum, Jira, Backend, Frontend, Full Stack

WORK EXPERIENCE

MM Soluciones Unificadas: Full Stack Developer Feb 2023 – Present

- Constructed a POS system employing guaranteeing offline functionality and 24/7 reliability on a local Ubuntu server, boosting transaction efficiency and cutting customers waiting times in line by 50%.
- Achieved the reduction of a POS system's go-live time from 3 years to 2 months by redesigning and refining the backend with languages like PHP, Python, and Node.js.
- Led the adoption of a Three.js platform over Unreal Engine, creating a cost-effective and accessible 3D visualization tool that enhanced cross-device performance with \$0 testing deployment costs. Enabled AR viewing of the 3D model directly in the browser without needing an app.
- Created a personalized voice assistant using Python, OpenAI's API and Langchain with access to the internet, terminal, Google Calendar and Tasks API, web search, Python interpreter, Wolfram Alpha, and Home Assistant API. The assistant could control office and monitor power consumption. Integrated 3D office visualization into a dashboard, with voice responses using Azure TTS.
- Developed an embedded web server on an ESP device using Vite and MQTT within one week, displaying real-time air quality data dashboards with offline functionality.
- Designed and installed an automated lighting system using IoT devices, reducing energy consumption for lighting in a section of an electronics manufacturing facility by 50%.
- Design and Development the website for redciudad.org with the using Astro and React, attracting investment and partners to the organization.

Tetra Pak: Maintenance Engineer April 2018 – May 2022

- PLC and HMI programming using TIA Portal, Step7 and WinCC (Ladder, C, STL, Block).
- Automated administrative tasks, reducing the time required to record a register from 1 minute to 5 seconds using Python to interact with SAP ERP.
- Redesigned the control unit for an electric trolley used to carry paper rolls, reducing repair costs from \$30,000 MXN to \$500 MXN and simplifying repairs by minimizing the required components.
- Rapidly diagnosed and resolved electric, mechanical, and communication failures in highly automated production lines, reducing machine downtime and associated costs. Demonstrated proficiency in understanding and maintaining complex systems under pressure.

IUSASOL: Photovoltaic Park Monitoring May 2017 – May 2018

- Led the development of a system to monitor the energy generation of the photovoltaic park using HTML, CSS, PHP and SQL to display the data on a dashboard and reduce the time to generate reports from 2 hours to seconds and on demand.

EDUCATION

Universidad Vasco de Quiroga || Morelia, Michoacán

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| • <i>MASTER'S DEGREE IN MECHATRONICS AND 4.0 INDUSTRY</i> | 2022– 2024 |
| • <i>MECHATRONICS ENGINEERING</i> | 2012– 2017 |

Relevant Coursework: [Coursera machine learning certification](#), Universidad Complutense de Madrid, Tendencias actuales en IA