Jorge Luis Martinez Villarreal

https://marvil.co/blog/portfolio/

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EDUCATION

Tecnológico de Monterrey, *Mechatronics Engineering*
AUGUST 2024 - PRESENT

PrepaTec, *High School*
AUGUST 2021 - JUNE 2024

PROJECTS

Omoidase — *Audio-Recording Pendant*
Designed a wearable hardware-software system for audio capture with event tagging and semantic search.

Stack: KiCad, C++, ESP32, 3D Printing, Python

Shipherd — *Dynamic Code Runner*
Built an open-source platform to deploy and monitor self-hosted code projects.

Stack: Node.js, React, SQLite, Docker

Cassette Drive — *Listen to Your Files*
Developed a software modem that encodes/decodes files as cassette audio using MFSK.

Stack: Python, NumPy, SciPy, ffmpeg, Reed-solomon ECC

Homelab — *My Homelab Infrastructure*
Built and operated a multi-node homelab environment for hosting services and experimentation.

Stack: Linux, Docker, UnRAID, Proxmox, BorgBackup, Wireguard

Hookraft — *Minecraft Chat Webhooks*
Built a server-side mod for two-way communication between Minecraft chat and external services.

Stack: Java, Webhooks, n8n

SKILLS

Programming
Python, JavaScript/Node.js, Java, Kotlin, C++, Rust, SQLite

Hardware/Embedded
ESP32, PCB Design, Arduino, Prototyping, 3D Printing

Infrastructure/DevOps
Linux, Docker, Self-hosting

ACTIVITIES AND SERVICE

Open-Source Contributions
Contributed to Immich, Playwright, and other small projects.

Hackathons
Participated in the 2024 HackMTY Hackathon in the Oracle team

LANGUAGES

Spanish (Native)
English (CEFR C1)
Japanese (JLPT N4)
German (CEFR A2)