Diego Gerardo Sánchez Moreno

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Summary

Robotics and embedded systems engineer in training focused on control, perception, and real-world deployments. Seeking software/robotics roles where control, embedded systems, and applied perception are core.

Education

B.S. in Robotics and Digital Systems Engineering
Tecnológico de Monterrey, Campus Querétaro
2022 – Jun 2026 (expected)

Experience / Research

Hybrid Soft Robotics Lab, Tec de Monterrey (Querétaro) — Soft Robotics Control Platform
2024 – Present

- Designed a bi-stable pneumatic driver with closed-loop pressure/vacuum control and safety interlocks.
- Implemented micro-ROS on ESP32 (UART) with pressure sensing via I2C (ADS1115).
- Built Python SDK + GUI for reproducible experiments and logging; analyzed control data with MATLAB.
- Developed locomotion experiment workflows and a scalable architecture for ongoing research.

Patio Cinco (Querétaro) — Production Platform
2025 – 2026

- Delivered a production system for memberships, billing, and customer operations used by real clients.
- Implemented modular flows on Wix + Velo with relational backend and operational logging.

Barbacoa de Miranda (Querétaro) — POS System
2025 – 2026

- Built an offline-first POS for Raspberry Pi with local queueing (SQLite) and auto-sync to backend.

Selected Projects

PuzzleBot Autonomous Mobile Robot (ROS 2)
Jan–Jun 2025

- Integrated micro-ROS, encoder-based odometry, and YOLOv8 perception on Jetson Nano.
- Implemented telemetric distance tracking and validated autonomous motion.

Line-Maze Solver (Pololu 3pi+)
2024

- Implemented PID line following with route recording and simplification to optimize traversal.

Awards & Certifications

- Best Poster Award — Exploring Soft Robotics (Dec 2025)
- NVIDIA DLI: Fundamentals of Deep Learning (Jun 2025)
- OpenCV Bootcamp (Apr 2025)
- Google Cloud Computing Fundamentals (Mar 21, 2023)

Technical Skills

- **Languages:** C++, Python, TypeScript, VHDL, MATLAB
- **Robotics/Control:** ROS 2 (Humble), micro-ROS, PID/PI, odometry, Gazebo
- **Perception:** OpenCV, YOLOv8
- **Hardware:** ESP32, Jetson Nano, Raspberry Pi, Arduino, FPGA
- **Product/Web:** Wix + Velo, Supabase, PostgreSQL, Astro, Tailwind

Languages

Spanish (Native), English (B2)