

Fernando Hernandez Cantu

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fhc-portfolio.vercel.app

EDUCATION

Monterrey Institute of Technology and Higher Education (ITESM) Aug 2024 – Jun 2028
Bachelor of Computer Engineering (GPA: 95.34/100) Monterrey, N.L.

CBTIS No. 36 Aug 2022 – Jun 2024
Tech. High School in Mechatronics (GPA: 99/100) – Academic Excellence Award Monclova, Coah.

EXPERIENCE

Epicor Dec 2025 – Present
Software Engineering Intern Monterrey, N.L.

- Started a **SWE internship** within the **Eclipse ERP** development team at Epicor.
- Working on **Java**-based Solar Eclipse development and web migration using **Angular**.
- Developing and integrating **AI-driven** features through a **Python**-based backend into Epicor products.

Distritotec Aug 2025 – Present
Software Engineering Intern Monterrey, N.L.

- Developing an end-to-end pipeline for crowd estimation and person registration at ITESM's Central Park using **YOLO** and **ByteTrack** for multi-object tracking.
- Architected a **PyTorch** classification model utilizing **ResNet18** and **Attention Pooling** to extract temporal embeddings for child vs. adult inference via an **MLP**.
- Building scalable backend services using **PostgreSQL**, **PostGIS**, and **Docker** within a microservices architecture deployed on **Azure** cloud infrastructure.

PROJECTS

RoboWeb | *Full-Stack Developer for RoBorregos Web Projects* May 2025 – Present

- **Dashboard-Tec**: Developing a community platform for ITESM events using **Next.js**, **tRPC**, and **Prisma**. Built the event calendar, admin panels, and managed **PostgreSQL/MySQL** databases.
- **SWE Training**: Built a platform to manage LeetCode resources and leaderboards with **T3 Stack**, supporting 35+ students in solving 650+ technical problems.
- **Candidates Dashboard**: Developed a full-stack recruiting site using the **T3 Stack** featuring a live scoreboard for the team's annual competition.

Robocup @Home | *Member of Computer Vision & Manipulation Teams in RoBorregos* May 2025 – Present

- Optimized point clouds via **ROS2/Gazebo**, reducing data by **90%** while increasing key area resolution.
- Developing object detection modules using **YOLO**, **OpenCV**, **ROS2** and **Docker**.
- Optimizing pipeline for training a **YOLO** model with image segmentation with **Grounding DINO** and **SAM** models.

Smart Parking IoT | *Software Developer for the ITESM "Expo Ingenierías"* Sep 2025 – Dec 2025

- Implemented an intelligent parking solution with automatic vehicle detection using **license plate recognition** in **Python (FastAPI)**.
- Integrated **ESP32**, **ESP32-CAM**, and a **Node.js** server communicating via **MQTT**, connected to a **PostgreSQL** database deployed on Neon and managed with **Prisma**.
- Developed a dashboard using the **T3** stack to monitor parking availability and sensor data.

Robocup Rescue Maze Jr. | *Team Captain* Nov 2024 – May 2025

- Achieved **1st place** at Regionals and **2nd place** at the **Mexican Robotics Tournament (TMR)**.
- Developed a computer vision pipeline using **TensorFlow** and **OpenCV** in **Python** for real-time victim detection.
- Architected an autonomous navigation system with **C++ PID controllers**, implementing serial communication between **Jetson Nano** and **ESP32**.

TECHNICAL SKILLS

Languages: C++ (3y), Python (2y), TypeScript (2y), JavaScript (2y), Java (1y), SQL (1y), R (1y), MATLAB (2y)

Frameworks: React, Next.js, Node.js, Tailwind, Prisma, tRPC, TensorFlow, PyTorch, ROS 2

Technologies: Git, Linux, Docker, PostgreSQL, MySQL, SQLite, OpenCV, YOLO, Gazebo, Arduino, SolidWorks

AWARDS & LANGUAGES

11th gen. "Lideres del Mañana" ITESM - Full Scholarship · Bronze Medal National Math Olympiad ONMB (2024) · 2nd Place National Academic Festival DGTI (2023) · Bronze Medal Math Olympiad ONMAPS (2021)

Languages: Spanish (Native), English (C1)