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EDUCATION

Monterrey Institute of Technology and Higher Education, Campus Monterrey – ITESM

Aug 2024 – Jun 2028

Bachelor of Robotics and Digital Systems Engineering

GPA 95.34/100

CBTIS No. 36 Campus Monclova, Coah.

Aug 2022 – Jun 2024

Technical High School in Mechatronics – Awarded academic excellence

GPA 99/100

Work Experience

ITESM

Software Engineering Intern

Aug 2025 – Present

- Developing a project for estimating crowd size and improving public space efficiency by studying how ITESM's Central Park is used;
- Developing backend services with **PostgreSQL**, **MongoDB**, **Docker Compose**;
- Implementing **video processing pipelines** using **Video-LLaMA**, **DeepStream**, and streaming via **FFmpeg** codecs.

Schneider Electric

Data management intern

Aug 2025 – Present

- Created a data pipeline using **Python**, **Pandas**, **SQL**, and Excel to validate data uploads to the PDM database (Product Data Management);
- Implemented component classification into part families using the **DeepSeek API** and **OpenAI** library in **Python**.

PROJECTS

Robocup @Home

May 2025 - Present

Member of the computer vision and robotic manipulation teams in RoBorregos

- Optimized point clouds for 3D perception, reducing total points by 90% while enhancing resolution in key areas;
- Developing object detection module using **YOLO**, **OpenCV**, **ROS** and **Docker**;
- Optimizing Pipeline to train a **YOLO** model with image segmentation.

Dashboard-Tec

Ago 2025 - Present

Full stack developer for a community web platform to discover and share events at ITESM.

- Developing the event submission, calendar and admin pages using **Prisma**, managing both **MySQL** and **PostgreSQL** databases;
- Developing backend services with **tRPC** and user **authentication**.
- Built the frontend using **TypeScript**, **React**, **Tailwind**, and **Next.js**.

SWE Training by RoBorregos

May 2025 – Aug 2025

*Frontend Developer for a web platform to manage **LeetCode** weekly problems, resources, and leaderboard rankings.*

- Development using **TypeScript**, **React**, **Tailwind**, **Next.js**;
- Provided a platform with 650+ solved problems, helping 35+ students strengthen technical skills for their professional growth.

Robocup Rescue Maze Jr.

Nov 2024 – May 2025

Developed an autonomous robot for navigating a maze and deploying rescue kits.

- Achieved **1st place** at **regional** competition and **2nd place** at the **Robotics Mexican Tournament** representing RoBorregos;
- Developed a computer vision system to detect victims using a **TensorFlow** model and **OpenCV** in **Python**;
- Developed an autonomous control and navigation system, implementing **PID controllers** in **C++** with **PlatformIO**;
- Implemented a serial communication protocol between a **Jetson Nano** and an **ESP32** to transmit **TensorFlow** model detection results;
- Led the project as team **captain**, coordinating development and competition.

Candidates by RoBorregos

Aug 2024 – Nov 2024

*Developed an autonomous robot, earned **1st place** in the annual RoBorregos contest.*

- Robot focused on navigating mazes, grabbing objects, and following lines;
- Implemented Arduino with multiple sensors such as encoders, **MPU gyroscope**, **infrared sensors**, **color sensor**, and **ultrasonic sensor**.

SKILLS

PROGRAMMING LANGUAGES

3 years: C++

2 years: Python

1 year: R, MATLAB, TypeScript, JavaScript, SQL

OTHER AWARDS AND COMPETITIONS

Bronze Medal in the National Mathematics Olympiad for Elementary and Middle School Students **ONMAPS** (2021)

Bronze Medal in the National Mathematics Olympiad for High School Students **ONMB** (2024)

Second Place in the National Academic Festival (**DGTI**) – **Team Category** (2023)

TECHNOLOGIES

HTML, CSS, Tailwind, Node.js, React, Next.js, T3, Prisma, tRPC
PostgreSQL, SQLite, MySQL, Vercel, TensorFlow, OpenCV, Git,
Ubuntu, Bash, VS Code, Arduino, PlatformIO, ROS2, Docker, YOLO,
Proteus, EasyEDA, SolidWorks.

LANGUAGES

Spanish	Native
English	Advanced (C1)
French	Basic (A1-A2)