

AREAS OF INTEREST

As a dedicated Robotics student, I am deeply committed to leveraging innovative design and programming to create robotics solutions that not only push technological boundaries but also significantly enhance people's well-being. With a particular interest in programming and design. I aim to contribute to projects that prioritize human-centered design and positively impact society.

EDUCATION

LANGUAGES

- Spanish (Native)
- English (TOEFL iBT – 94 points)

TECNOLÓGICO DE MONTERREY

Bachelor's Degree in Robotics and Digital Systems

Mexico City, Mx / Monterrey, Mx
2021 – 2025

EXPERIENCE AND PROJECTS

AGV WITH HMI FOR AUTONOMOUS NAVIGATION

Designed and programmed an automated guided vehicle (AGV) with SLAM-based navigation, path planning (A* and Bug algorithms), visual detection (OpenCV and ArUco markers), voice control, and real-time monitoring through a custom web-based human-machine interface. Implemented in ROS2 using a modular software architecture. Project developed under academic supervision and monitored from Elettric 80.

Monterrey, Mx
June, 2025

REASERCH STAY AT SIRS LAB - SIENA ROBOTICS AND SYSTEM LAB

Under the guidance of Prof. Domenico Prattichizzo, led the migration of internal Franka Research 3 robotic arm applications from ROS to ROS2, integrating their simulations in Gazebo.

Siena, It
September, 2024 – January, 2025

AUTONOMOUS CAR NAVIGATION

Worked in partnership with John Deere, gaining insights into satellite navigation techniques building a scaled autonomous vehicle capable of navigating using real-time sensor data captured with a camera.

Monterrey, Mx
December, 2023

VALVE FLOW CONTROL

Achieved precise control and monitoring of valve-flow, enhancing the system's efficiency and reliability using microcontrollers for real-time analysis and control of fluid flow in the system.

Monterrey, Mx
July, 2023

FIRST ROBOTICS COMPETITION

WARC (World Adolescent Robotics Competition)
Winning Alliance - FTC.

Beijing, China
November, 2015

API (Asia Pacific Invitational), Macquarie University, Australia
Second Place - FTC.

Sydney, Australia
July, 2016

FIRST Global
Participated as team North America.

Washington DC, USA
July, 2017

Volunteered in FRC, FTC, and FLL, serving as a judge and coordinator.

iOS APP DEVELOPING

Developed a set of 3 iOS apps for team coordination and rules comprehension for FTC, FRC and FLL competitions named FTC Toolbox, FRC Toolbox, FLL Toolbox.

Mexico City, Mx
2015-2017

SKILLS

PROGRAMMING LANGUAGES: C, C++, Python, Java

SOFTWARE PROFICIENCY: STM32CubeIDE, ROS2, MATLAB, Linux