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EXECUTIVE SUMMARY

Since the age of 13, I've been immersed in robotics, first competing and later serving as a judge in national tournaments. Those experiences taught me teamwork, communication, and leadership at a young age. Today, as a Robotics Engineer, I'm driven by the challenge of transforming ideas into reliable systems. I blend software, design, and strategy to develop solutions. I quickly adapt to new challenges and learn whatever is needed to solve them. Beyond the code, I'm motivated by leadership, collaboration, and creating the technology that will move humanity forward.

SKILLS

PROGRAMMING: C, C++, Python
HARDWARE & TESTING: microcontrollers, real-time diagnostics, STM32, ROS2

SOFTWARE TOOLS: ROS2, MATLAB, Linux, AutoCAD, Microsoft Suite, Google Workspace (Docs, Sheets, Slides)

EDUCATION

LANGUAGES

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

TECNOLÓGICO DE MONTERREY **Mexico City, Mx / Monterrey, Mx**
Bachelor's Degree in Robotics and Digital Systems *2021-2025*

EXPERIENCE AND PROJECTS

AGV WITH HMI FOR AUTONOMOUS NAVIGATION **Monterrey, Mx**
June, 2025
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.

REASERCH STAY AT SIRS LAB - SIENA ROBOTICS AND SYSTEM LAB **Siena, It**
September, 2024 – January, 2025
Led the migration of internal Franka Research 3 robotic arm applications from ROS to ROS2, integrating their simulations in Gazebo.

AUTONOMOUS CAR NAVIGATION **Monterrey, Mx**
December, 2023
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.

VALVE FLOW CONTROL **Monterrey, Mx**
July, 2023
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.

FIRST ROBOTICS COMPETITION

WARC (World Adolescent Robotics Competition) **Beijing, China**
- Winning Alliance - FTC. *November, 2015*

API (Asia Pacific Invitational), Macquarie University **Sydney, Australia**
- Second Place - FTC. *July, 2016*

FIRST Global **Washington DC, USA**
- Participated as team North America. *July, 2017*

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