Olivia Navarrete-Carrasco

Robotics and Digital Systems Engineering Student

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Profile

I am currently a senior student in B.Sc. in Robotics and Digital Systems Engineering at Instituto Tecnológico y de Estudios Superiores de Monterrey. Throughout these years in college, I have learned software design, digital electronics, control and embedded systems, and systems-on-chip for robotics development. My interest focuses on control systems, embedded systems, computer vision, and machine learning. I am always looking for my personal development through different social, cultural, and engineering projects.

Experience

John Deere   **Mexico City** *Sep 2023 - Dec 2023*
- Design and implementation of a linear and angular position control system of a seat for a John Deere tractor.

- Developed and implemented communication protocols such as CAN, USB, TCP/IP

- Vibration analysis using STM32 microcontroller.

Beautiful Patterns by MIT *(Beautiful Patterns)*   **Mexico City** *Dec2021 - present*
- Within the framework of the "Beautiful Patterns" program, a joint initiative between MIT and Tecnológico de Monterrey aimed at promoting the presence of women in STEM fields in Latin America

- I took on the role of leading a group of young women aged 13-15, guiding them through the process of creating a simple web page using HTML, CSS, and JavaScript. In addition to providing instructional resources, I organized activities aimed at boosting their self-confidence and problem-solving skills, fostering a collaborative environment among them.

Shirag Research Group   **Mexico City** *Aug 2021 - present*
- Collaborated on social projects involving NAO robots, particularly in providing therapies to assist individuals with specific motor disabilities.

- Spearheaded the organization of a conference across various Prepa Tec campuses aimed at advocating for greater female representation in engineering fields.

Highlight Projects

Hackathon - Third Place Winner   **Mexico City** *Oct 2023 - Oct 2023*
- Emergency response usigng signal processing.

- Analyzing and transcribing 911 calls to filter out false alarms and prioritize genuine emergencies.

- Designing a system utilizing an LCD display to indicate the direction of the emergency.

Concurso Iberoamericano de Satilites Enlatados- Semi Finalist *(CANSAT)* **Mexico City** *Feb 2022 - May 2022*
- I collaborated within a team on the design of a canned satellite (CANSAT).

- Utilizing an ESP32 to transmit pressure, temperature, orientation, and acceleration data during the ascent phase.

Skills

- **Languajes:** Spanish (native), English C1 (98 pts on TOEFL IBT)

- **Programming Languages** C++, C, MATLAB,Python, HTML, CSS, JS

- **Development platforms** Ubuntu, Proteus, Fusion 360, Arduino, ROS2

Extracurricular

Leadership Diploma   **Mexico City** *Jan 2021 - Jan 2021*
- At Tecnológico de Monterrey, I completed accredited Module 1 and Module 2. Additionally, I participated in a solidarity project aimed at fostering the development of human senses, which sought to address one of the Sustainable Development Goals.

Mentoring Diploma   **Mexico City** *Aug 2022 - Jun 2023*
- At Tecnológico de Monterrey, I successfully completed Module 1, Module 2, and Module 3. In this capacity, I aim to assist freshmen in their adaptation process by sharing my experiences and knowledge.