Ines Alejandro Garcia Mosqueda

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Education

Tecnológico de Monterrey — Guadalajara, Jal
B. S. in Computer Science and Technology (GPA: 94.6/100) — *Aug. 2021 – June. 2025*

High School ENMS Salamanca — Salamanca, Gto
Mechatronics Technician (GPA: 94.1/100) — *August 2018 – June 2021*

Projects

ISS tracker and collision avoidance web app — October 2022
JavaScript, Satellite.js, React, Three js, Git

- An open-source web app, where the user can know the actual location of the International Space Station, check for real coalitions alerts with space trash and space debris, satellites and space bodies detected.
- Integrated Satellite.js to track satellite propagation via TLEs.
- Developed a ISS tracking and mapping in 3D space and collision prediction estimate function
- Developed for NASA space apps challenge 2022 in a period of 48 hours, obtaining global nomination for the project in the hackathon

Fruit grader by quality system — Oct - Dec 2022
JavaScript, Python, SQL, OpenCV, Node.js, React, Express, Arduino, C/C++

- Developed a low-cost industrial fruit classifier using computer vision
- Served as part of the development team and the Scrum Master for the full project, responsible for leading the agile development process and facilitating cross-functional teamwork.
- Developed a computer vision system for automated fruit classification using algorithms for image processing
- Created a cloud-based service for processing fruit samples using the developed computer vision system, allowing for scalability and easy access to the service for clients, using techniques such as parallel processing
- Developed a server-client platform for managing the backend of the fruit classification service, including a database for storing and retrieving fruit data and system performance metrics.
- Designed the digital system for the fruit classification machine, including hardware and software components and the design of the PCB layout.

Intelligent Garbage Sorting: A Deep Learning and Artificial Vision Solution — Sep 2022
Python, Matlab, JavaScript, Flask, TensorFlow, TKinter, React, Google Cloud

- Developed backend and client server to interpret and process data collected by the AI model
- Implemented GoogleNet deep learning model for image recognition to classify different types of waste, such as organic, plastics, paper, and others
- Built Matlab scripts to analyze training data and evaluate model performance

Electric car Telemetry system — May - Aug 2022
C Sharp, .NET, JavaScript, Electron, Google Cloud

- Developed a desktop application for a telemetry system to monitor a prototype electric car in real-time
- Implemented data parsing and visualization techniques to display information on screen intuitively
- Developed a real-time tracking feature to display the car's position on a map
- Built a dashboard to display detailed information about the car's performance, such as speed, angles of inclination, temperature, geographic coordinates and other important data to analyze

Dielectrophoresis simulator — Apr - May 2022
Matlab

- Developed simulation code for dielectrophoresis (DEP) technique to detect malaria
- Developed functions to simulate electric fields in R3 using numerical methods
- Created functions to predict behavior of red cells in simulated electric fields, using numerical methods simulating physical phenomenons

Technical Skills

Languages: C, C++, C Sharp, Python, JavaScript, Matlab, R, SQL (MySQL), HTML/CSS
Frameworks: React, Node.js, Express, Flask, .NET, Electron
Developer Tools: Git, GitHub, Google Cloud Platform, VS Code, Visual Studio, Jupyter
Libraries: Pandas, NumPy, Matplotlib, OpenCV, Three.js