

Jorge Arturo Montiel Navarro

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EDUCATION

Monterrey Institute of Technology and Higher Education (ITESM)

Monterrey, México

Bachelor's degree in Computer Science

Expected Graduation: June 2028

- **GPA:** 97.7/100

EXPERIENCE

John Deere

Nov 2025 – Present

Embedded Software Intern

Monterrey, Mexico

- Engineered critical safety features for the Remote Display Controller (RDC) in **C++**, implementing logic to block hazardous operations across 20+ dependency layers to ensure operator safety.
- Revamped the **Model-in-the-Loop (MIL)** testing framework using **MATLAB/Simulink**, achieving **100% code coverage** for state machines and integrating automated test pipelines in **Jenkins** to resolve technical debt.
- Developed CLI scripts to automate multi-language verification and resolved UI text overflow issues, improving UX for global users.
- Collaborated within the "Bugsters" team using **Azure DevOps** and **Agile/Scrum** to manage the lifecycle of embedded software for Planters and Seeders.

Alquiladora GEMA

May 2021 – Present

Co-Founder & Lead Developer

Pachuca, Mexico

- Established the digital brand identity by deploying a full-stack landing page, currently serving 5,000+ annual users.
- Architecting an internal logistics web portal to replace manual logbooks, integrating real-time tracking and automated pricing, projected to reduce tracking errors by 30%.

PROJECTS

SENTINEL | *React, TypeScript, Python, FastAPI*

Nov 2025

- Developed a Hybrid Financial Risk Detector for **Capital One** at HackMTY 2025, integrating predictive ML models with a real-time web dashboard.
- Architected the frontend using **React** and **TypeScript**, designing a responsive Risk Monitoring Dashboard with live gauges and dynamic alerts.
- Integrated **FastAPI** endpoints to visualize real-time ML risk scores and deployed the backend on **Render** for live data processing.

Tamale Management System | *Python, CLI, File I/O*

Nov 2025

- Won the **People's Choice Award** at Expoingeniería for developing a robust sales and inventory management solution for a local business.
- Implemented **RBAC**, automated transaction logic, and flat-file persistence to ensure data integrity and real-time stock updates.

Airport Reservation System | *C++, OOP, C++ STL, File I/O*

Month Year

- Architected a modular **Object-Oriented C++ system** for flight management, ensuring separation of concerns between logic controllers and data entities.
- Optimized runtime performance by implementing an in-memory data model using **STL containers** and passing objects by reference to minimize memory overhead.
- Engineered transaction logic with flat-file persistence to enforce **data integrity**, validating booking capacity and user authentication.

HONORS & AWARDS

"Líderes del Mañana" Scholarship | *ITESM*

Aug 2023

- Awarded 100% tuition scholarship for exceptional academic potential and social leadership (Acceptance Rate: <1%).

Statewide Top Scorer (PAA) | *College Board*

June 2023

- Ranked 1st in the state on the PAA admission exam, achieving the highest score among all applicants.

TECHNICAL SKILLS

Languages: C/C++, Python, SQL, Bash/Shell, JavaScript, TypeScript, HTML/CSS

Frameworks & Libraries: React, Express, Node.js, MATLAB/Simulink

Developer Tools: Git/GitHub, Jenkins, Azure DevOps, Linux, Agile/Scrum