

Arturo Duran Castillo

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EDUCATION

Tecnológico de Monterrey, ITESM

B.S in Computer Science and Technology

- GPA: 3.9/4.0 (equiv. 97.6/100)
- Scholarships: Academic Talent Scholarship

Monterrey, Nuevo León

Expected Graduation: June 2025

EXPERIENCE

Web Developer Intern

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June 2023 – Aug. 2023

Monterrey, Nuevo León

- Development of key performance indicators for employees of 35 affiliated businesses, integrating visual analytics into the web dashboard. This feature enabled the companies to identify information about employee performance.
- Start of development of a new functionality called "Automations", aimed at providing companies with a tool to set up actions triggered by specific events, such as a new purchase. Worked with React and Firebase.

PROJECTS

IOS app for deaf patients | *SwiftUI, React, Node.js, Express.js, Prisma, WebSocket*

Sep 2023 – Dec 2023

- Worked in collaboration with the organization "Dilo en Señas" to create an application that can help deaf patients cover their consultation process.
- Real-time chat functionality using Apple Speech framework to transcribe the speaker's text and AVSpeechSynthesizer to process the deaf patient's text to speech.
- Use of web socket for viewing and modifying chat messages in real time from a web application.

Multi-Agent System for Harvesting Process Optimization | *Unity, Node.js, WebSocket*

Aug 2023 – Sep 2023

- Collaborated with John Deere to develop a 3D Unity simulation to optimize the harvesting process.
- Developed a React-based web interface for inputting simulation parameters such as land dimensions and vehicle counts, and enabled real-time monitoring of vehicle fuel levels, cargo capacities, routes, and speeds.
- Implemented advanced algorithms, including a modified Traveling Salesman Problem for harvesters' routes and Q-learning for tractors' crop collection paths, optimizing harvesting efficiency.
- Established WebSocket communication for real-time coordination between system components.

Smart Traffic Light Development | *Python, OpenCV, MySQL, MQTT, Arduino*

Sep 2022 – Dec 2022

- Developed an intelligent traffic light system to adjust light durations based on real-time traffic, pedestrian presence, and weather conditions, aiming to significantly reduce CO2 emissions per vehicle by up to 50% and decrease urban traffic congestion.
- Implemented traffic analysis using cameras and AI algorithms with OpenCV for vehicle detection and counting.
- Developed a control dashboard for traffic data visualization and analysis, enabling comparisons and insights at different hours and days.

LEADERSHIP / EXTRACURRICULAR

Intercultural, Sustainability and Global Citizenship Program

Dec 2023

Thompson Rivers University

Kamloops, British Columbia

- Obtained a scholarship from the state of Guanajuato, Mexico to attend this program.
- Active participation in intercultural environments, where I honed intercultural communication and teamwork skills.
- Promoted global awareness and sustainability, vital for future project development. Gained insights on global citizenship, integrating diverse perspectives to tackle international issues.

Virtual Library for a Children's Home

Aug 2022 – Dec 2022

Casa Hogar Padre Severiano Martínez

Monterrey, Nuevo León

- Developed a digital library for this children's home, utilizing WordPress, HTML/CSS, to enhance book availability and categorization for 200 children belonging to this organization.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, C++, C#, HTML/CSS.

Additional Technologies: Angular, React, Next.js, Node.js, MySQL, PostgreSQL, MongoDB, Unity.

Developer Tools: Git, Google Cloud Platform, AWS, Firebase, Azure DevOps.