Arturo Duran Castillo

+52 417-110-9561 | a00833516@tec.mx | linkedin.com/in/arturoducas | github.com/ArturoDuCas

EDUCATION

ITESM   Monterrey, Nuevo León
B.S in Computer Science and Technology   *Expected Graduation: June 2025*
- GPA: 97.65/100 (approx. 3.9/4.0)
- Scholarships: Academic Talent Scholarship

EXPERIENCE

Web Developer Intern   June 2023 – Aug. 2023
Swirvle   *Monterrey, Nuevo León*
- Implemented new functionality and bug fixes to a web dashboard used by 35 affiliated businesses using React and Firebase to improve operational efficiency and customer satisfaction.
- Contributed in the development of new functionalities for the mobile application, using React Native and Firebase I managed to impact more than 20,000 users.

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 freamework 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 CO_2 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

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.

Web Development Certifications   since July 2022
- Completed the following freeCodeCamp certifications:
  - Back End Development and APIs.
  - Front End Development Libraries.
  - JavaScript Algorithms and Data Structures.
  - Responsive Web Design.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, C++, C#, HTML/CSS, R.
Additional Technologies: React, Next.js, Node.js, Express, MySQL, PostgresSQL, MongoDB, SwiftUI, Unity.
Developer Tools: Git, Google Cloud Platform, Firebase.