Leonardo Cervantes

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EDUCATION

Tecnológico de Monterrey Expected 2027

B.S. in Computer Science and Engineering | *Minor Artificial Intelligence* *GPA: 3.7/4.0*

- **Relevant coursework:** Data Structures and Algorithms, Databases, Web Development, Software Engineering, Computer Architecture, Machine Learning

WORK EXPERIENCE

Software Development Intern | *Novus* Aug 2024 – Present

- Contributed to the development of **MxRep** and **CowTec**, two educational simulators for industrial and agricultural engineering students, using **React**, **Node.js**, **Express**, and **MongoDB**, supporting over **500+ students** globally.
- Defined **MVC architectures**, adopted **Agile (SCRUM)** methodologies, and used **Atomic Design** principles, that resulted in a **10% faster feature delivery** and a **40% time reduction** on the on-boarding for new team members.
- Reduced the financial reporting time in MxRep from $\sim$**1 hour to seconds** by building a **financial reporting module** using React, that automatically calculates and generates **PDF reports** from **MongoDB data**.
- Developed a **dashboard** for CowTec using NodeJS and Express, that displays **cow birth cycles**, **milk production**, and **historical trends**, allowing students to track cow performance and making the simulator more informative.
- Contributed to academic research by **co-authoring and presenting papers** on **gamification's impact in higher education** at international conferences including **SmarTec**, **IFE Conference**, and **ECGBL**.

Software Engineering Intern | *Intel* Apr 2023 – Sep 2023

- Rewrote and modernized **firmware** for **5+ legacy embedded systems** using **C** and **Marlin**, restoring functionality to **10+ obsolete devices** and saving approximately **$1,000** in replacement costs.
- Ported outdated firmware to modern **Arduino-based boards**, replacing proprietary components with **open-source hardware** to improve long-term accessibility and maintenance.
- Mentored multiple **IoT student teams** by providing **technical guidance** in **software and hardware integration**, leading **two teams to win 1st and 2nd place** in university innovation awards, and ultimately receiving funding.
- Authored a **thesis on modernizing embedded systems**, proposing and documenting **open-source firmware approaches** to improve hardware accessibility and extend device lifespan.

PROJECTS

Via Alta | | Source Code *Next.js, PostgreSQL, TypeScript*

- Built end-to-end university enrollment system using **Next.js** and **PostgreSQL**, managing client requirements through complete software development lifecycle and deploying **2 weeks ahead of schedule** on Heroku.

Clearly | Demo Video | Source Code *Django, ML, Blockchain, AI Agents*

- AI water quality judge that provides verifiable assessments, **second place sponsor challenge at HackMIT 2025**.
- Engineered the core back-end logic (Django) where the verifiable agent analyzed inputs (geolocation, **CV-parsed test strip results**) and returned a structured JSON response.

Bloombly | Website | Source Code *Python, Flask, TensorFlow, Three.js, Google Earth Engine*

- Built interactive platform using **Three.js WebGL** to display global blooming patterns for **30+ plant species**, processing NASA satellite data through a data pipeline that transformed raw CSV into **GeoJSON**.
- Developed **Flask REST API** serving predictive bloom forecasts from a **Gradient Boosting ML model**, handling geospatial queries and historical trend data with efficient caching and response optimization.

SKILLS

Programming Languages: Python, TypeScript, JavaScript, C/C++, SQL, R, HTML, CSS
Web / **Frameworks**: React, Next.js, Node.js, Express, Django, Flask, FastAPI
Databases: MongoDB, PostgreSQL, MySQL, MongoDB Atlas, NoSQL, Redis
Tools / **DevOps**: Docker, Git, Postman, Heroku, Supabase, Firebase, CI/CD basics