

Hector S. Lazcano

Full Stack Developer

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Summary

Full Stack Developer with 7+ years of experience building scalable, high-performance web applications and APIs. Strong background in software engineering and system design, with a BEng in Electronic Engineering and currently pursuing an MSc in Computer Science with Software Engineering. Proven experience working in Agile, cross-functional teams, leading projects, and mentoring junior developers.

Education

MSc	Computer Science with Software Engineering University of Hertfordshire	2026 - Present
BEng	Electronic Engineering (11329606) Instituto Tecnológico de Puebla	2012 - 2017

Skills

Frontend: React, Next.js, TypeScript, JavaScript, Tailwind CSS, Material UI, Shadcn UI, Daisy UI

Backend & Data: Node.js, Python (FastAPI/Flask), Java, Polars, Pandas, REST APIs, PostgreSQL, Oracle SQL, MySQL, MongoDB

Cloud & Tools: Azure, Git/GitHub, Bitbucket, CI/CD (GitHub Actions), Docker, Linux (Bash), VSCode

Experience

Texas A&M Transportation Institute <i>Software Applications Developer II</i>	Texas, USA 04/2022 - Present
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Promoted to **Software Developer II** to lead the development of a **mission-critical** data infrastructure for monitoring international border crossings (US-Mexico).

Architected a high-throughput ingestion engine using **multithreaded Python** to process real-time **UDP streams** from **100+ WiFi, Bluetooth, and RFID sensors**, handling thousands of concurrent data packets per minute.

Developed a specialized **Analytics API** that transforms raw database records into structured insights using **Polars and Pandas**; implemented complex mathematical models to generate accurate "typical travel time" benchmarks and predictive traffic metrics.

Managed the delivery of high-fidelity datasets to support **large-scale transportation research and binational logistics**, enabling border agencies to make data-driven decisions regarding international trade.

Built real-time monitoring dashboards with **Next.js and TypeScript**, visualizing sensor health and traffic flow to ensure **24/7 operational visibility** of border infrastructure.

SOFICO <i>Java Core Developer</i>	Puebla, Mexico 12/2019 - 04/2022
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Addressed and resolved complex debugging challenges through systematic **root cause analysis**, delivering high-impact solutions and **reducing technical debt** by refactoring and modernizing legacy code, significantly raising system stability and code quality.

Collaborated with **distributed international teams** across multiple countries and time zones, delivering backend solutions in **Agile sprints** for various automotive clients worldwide.

Improved critical business logic and ensured reliability across mission-critical processes, including a major update to the **Annex 20 electronic invoicing module** to meet **regulatory compliance** requirements in Mexico.

BURY Technologies

Automation & Maintenance Engineer

Mielec, Poland
01/2019 - 08/2019

Designed and implemented **C# interfaces** for **Modbus communication** and **Mitsubishi PLC integration**, enabling precise monitoring of signals and cameras across the production line. I also configured sensors and developed **production monitoring software** using **Delta PLC**, ensuring real-time visibility of operational performance.

Performed preventive maintenance on production equipment, proactively identifying and addressing potential issues to maximize **operational uptime** and support smooth manufacturing processes. My work contributed to both the reliability of automation systems and the efficiency of production monitoring.

El Faro Ferreterías

Freelance Software Developer

Veracruz, Mexico
09/2017 - 07/2018

Designed and implemented a comprehensive personnel and attendance control system using **Java** and **MySQL** with biometric authentication, enhancing HR processes and improving administrative efficiency.

Enhanced and customized the company's **MyBusiness POS** software by correcting and extending its **Visual Basic** code to meet specific operational needs, streamlining daily workflows and ensuring reliable performance. Additionally, redesigned the company's logo and brand identity, delivering a modern and professional corporate image.

Volkswagen de México

Betriebsmanagement Intern

Puebla, Mexico
02/2017 - 08/2017

Contributed to the development of **graphical interfaces** using **PHP** supporting the administrative operations of the Betriebsmanagement system.

Took a **leading role** in advising students at the Learnstation, fostering cross-functional collaboration to redesign the door subsection device used in the VW Golf paint shop, achieving 2 USD savings per device and demonstrating strong problem-solving and process improvement skills.

Languages

Spanish: Native

English: Advanced

Polish: Basic

German: Basic