

ALEJANDRO HERRERA MERLO

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Senior Software Engineer with 6+ years of experience building production React/TypeScript/Vite applications and AI agent systems. Currently designing and deploying LLM-based workflows, multi-agent architectures, and vector search pipelines (ChromaDB) at Platica, a B2B AI platform. Previously migrated NLP systems to GPT-4 at Softtek, supporting an AI chatbot used by thousands of university students. Strong background in frontend testing (Vitest, Jest, TDD) and full-stack development across React, Node.js, Angular, and MongoDB.

Education

UNIVERSIDAD INTERNACIONAL DE LA RIOJA Aguascalientes, México Master's Degree, Game Design and Development. January 2024 – May 2025

UNIVERSIDAD TECNOLÓGICA DE AGUASCALIENTES Aguascalientes, México Engineer, Software Development and Management. September 2020 – April 2022

UNIVERSIDAD TECNOLÓGICA DE AGUASCALIENTES Aguascalientes, México Associate Degree, Multiplatform Software Development. September 2018 – September 2020

Experience

PLATICA Aguascalientes, México

Senior Full Stack Developer November 2025 – August 2026

- Managed and optimized the core Platica platform, ensuring high availability and seamless integration of AI-driven workflows.
- Designed and implemented AI agents and automated workflows to streamline internal operations and enhance platform capabilities.
- Led end-to-end development of new modules, from data schema design to deployment of responsive front-end applications.
- Architected vector-based data solutions for complex information retrieval, enabling deep analysis of historical interaction data.
- Established comprehensive testing protocols, including unit, integration, and end-to-end suites, to maintain platform stability.

- Orchestrated integration of third-party tools (Notion, GitHub, Cursor) into a cohesive development ecosystem.
- Designed and deployed an end-to-end bug-triage agent connecting Platica AI, Notion, Cursor, and GitHub, reducing manual issue-tracking overhead for the engineering team.
- Architected a vector search pipeline using ChromaDB to index and query historical agent-client conversations at scale.
- Built a full test suite for the Platica client API using Vitest, establishing the team's first systematic QA baseline.

SOFTTEK Aguascalientes, México

Frontend Developer February 2023 – January 2026

- Developed applications for the AI Team supporting a university client, using React, Redux, Styled Components, Tailwind CSS, and JavaScript.
- Integrated university APIs and third-party services within an Agile SCRUM / Azure DevOps workflow.
- Led migration of a legacy NLP chatbot to GPT-4 via the Azure OpenAI API, improving response quality for a chatbot serving thousands of active students.
- Supported and maintained a university AI chatbot, resolving issues and improving code quality.
- Developed a bot-assisted application for prospective students and a custom chatbot widget using React.
- Implemented TDD for frontend development using Jest and React Testing Library, and introduced Storybook for component testing and documentation.
- Improved the custom UI for AI web applications, resolving CMS embedding issues and adding minimize/fullscreen chat modes.

UNIVERSIDAD TECNOLÓGICA METROPOLITANA DE AGUASCALIENTES Aguascalientes, México

Professor, Web Development & Application Security August 2023 – December 2023

- Taught web development and application security using React, Astro, and Angular.
- Guided students in secure coding practices and common web application vulnerabilities.
- Introduced students to agile development through a SCRUM-based product build.
- Taught modern design and architecture patterns, including island architecture, module pattern, singleton, and observer.
- Implemented GitHub Classroom for projects, homework, and class history tracking.

VIANNEY Aguascalientes, México

Full Stack Developer July 2022 – January 2023

- Developed applications with React, Angular, Node.js, and MongoDB to support lean manufacturing improvements.
- Built an application with React, Angular, Node.js, Oracle, and the Google API to import data from Google Sheets into an Oracle database.
- Migrated the team from local/USB/email file storage to Git and GitLab, and designed a branch workflow for all team members.
- Implemented Firebase Cloud Messaging and a custom Node.js library for email and push notifications.

IRYS San Antonio, Texas (Remote)

Intern Frontend Developer January 2022 – April 2022

- Developed scalable, customizable React components using Storybook, Styled Components, and Jest.
- Designed unit tests using React Testing Library within a SCRUM and TDD workflow.
- Built a custom component library that improved UX/UI development efficiency across projects.

FÁBRICA DE SOFTWARE UTAGS Aguascalientes, México

MEAN Stack Developer May 2020 – May 2022

- Developed an application using Angular, Node.js, and MongoDB enabling companies to post jobs, hire students, and let students generate and print their first resume.
- Developed a web and mobile application using Angular, Ionic, Node.js, and MongoDB for inventory auditing, enabling counting, management, and statistical reporting.
- Centralized the student-hiring process into a single platform with transparent, statistics-driven tracking.

Skills & Interests

Technical: JavaScript, TypeScript, HTML, CSS, React, React Native, Next.js, Astro, Angular, Ionic, Swift, Node.js, Express, .NET, MongoDB, SQL, Vite, Tailwind CSS, Redux, Vitest, Storybook, ChromaDB, Vector Databases, LLM Integration, Prompt Engineering, AI Agents, Azure OpenAI

Language: Spanish — Native; English — B2 (Professional Technical)

Professional Strengths: Fast learner, problem solving, teamwork, growth mindset, conflict facilitation, adaptability, critical thinking, empathy, self-awareness