# José Vela | Software Engineer

## CONTACT


🌐 jvela.dev
📧 codevela@protonmail.com
📍 Barcelona, Spain


## EDUCATION

**Machine Learning Specialization**
Stanford University & DeepLearning.AI
Coursera · February 2024

- Supervised Learning
- Advanced Learning Algorithms
- Unsupervised Learning and Reinforcement Learning

**Industrial Automation and Computing**
Aula21, Barcelona, Spain
2022 - 2023

**Automation Engineering**
UCLV, Cuba
2011 - 2016

## SKILLS

**JavaScript (ES6+):** Interactive and dynamic frontend development.

## PROFILE

Full stack software engineer with experience in Node.js, TypeScript, Python, React and Angular. I build AI applications in production —LLM agents with tool calling, multi-agent orchestration and RAG with LangChain and PostgreSQL/pgvector— and serverless backends on AWS, as well as industrial MES systems.

## WORK EXPERIENCE

**Full Stack Developer — Workspace Booking System** ***/ 2025 - Present***

ByBusiness — client: Barcelona Supercomputing Center

- Built a **multi-tenant** workspace booking and management platform running in production (bsc-spaces.eu), with full data isolation per organization.
- Developed the frontend with **React 18**, **TypeScript**, Vite and Tailwind CSS.
- Designed the **AWS serverless** backend with **Node.js**: a REST API with API Gateway and Lambda on PostgreSQL in RDS, email with SES and scheduled jobs with EventBridge.
- Published the frontend to S3, distributed through **CloudFront**.
- Defined the infrastructure as code with **SAM and CloudFormation** and a CI/CD pipeline with CodePipeline and CodeBuild.

**TypeScript:** Static typing for codebases that stay maintainable at scale.

**React.js:** Building modern, scalable interfaces.

**Next.js:** Optimized web applications with SSR and SSG.

**Tailwind CSS, Bootstrap and Material-UI:** Fast, responsive design.

**Angular:** Enterprise web development with RxJS, NgRx and Angular Material.

**Node.js:** Efficient, scalable JavaScript backends.

**Python (Django and FastAPI):** REST APIs, background jobs with Dramatiq and Redis, and streaming responses (SSE).

**Databases (SQL and NoSQL):** Design, management and optimized queries in PostgreSQL (with pgvector), SQL Server and MongoDB.

**RESTful APIs:** Design and integration for system architectures.

**Applied AI (LLMs):** Agents with ReAct reasoning and tool calling, multi-agent orchestration and RAG with LangChain, Google Gemini

- Implemented role-based access control with four permission levels and **JWT** authentication.
- Developed an interactive floor map with **Konva** for visual desk booking, alongside calendar-based booking of meeting rooms, cubicles and hot desks.
- Created an admin dashboard with real-time occupancy metrics, charts with Recharts and report exports to CSV and PDF.
- Established E2E test coverage with **Playwright** and unit tests with Vitest.
- Maintain the platform in production: I deploy the Lambdas and the frontend with custom scripts that verify in AWS that the released version is live, and diagnose errors with CloudWatch Logs and metrics.

**Full Stack Developer — Enterprise AI Platform** ***/ 2024 - Present***

ByBusiness

- Grew the product from a business plan generator into an **enterprise AI platform** with agents, conversational assistants and an integrated CRM.
- Developed the backend in **Python** with **Django REST Framework** and PostgreSQL, with background jobs through Dramatiq and Redis and streaming chat responses (SSE).
- Developed **AI agents** with **ReAct** reasoning and **tool calling** that combine RAG and web search, with routing by specialty, permissions and human confirmation before executing actions.
- Implemented custom **multi-agent orchestration**: plans with dependencies, persisted states, asynchronous execution, auditing and resumption after approval.
- Built the **RAG** pipeline with **LangChain**: asynchronous ingestion with OCR, chunking with overlap, Google Gemini embeddings and semantic search on **PostgreSQL/pgvector** with per-plan and per-client filters.

embeddings and PostgreSQL/pgvector.

**LLM providers:** OpenAI, Anthropic (Claude), Google Gemini and Azure OpenAI through custom adapters; structured outputs with Pydantic.

**Cloud (AWS, Google Cloud and Azure):** Lambda, API Gateway, RDS, S3, CloudFront, SES, EventBridge and CloudWatch, with infrastructure as code in SAM and CloudFormation; Cloud Run, Cloud SQL and Cloud Storage; App Service, Container Apps and Blob Storage.

**Testing:** Unit, integration and E2E tests with Jest, React Testing Library, Pytest and Playwright.

**CI/CD and Deployment:** GitHub Actions, AWS CodePipeline and CodeBuild, and Docker.

- Developed market research agents with web search (Serper) and page extraction with Playwright and Jina Reader, with retries on rate limits.
- Integrated OpenAI, Anthropic, Google Gemini and Azure OpenAI models through custom adapters, with structured outputs validated with Pydantic.
- Built the frontend in **React** with TypeScript, Vite, Tailwind CSS and React Query, featuring an in-chat agent mode and internationalization.
- Deployed the platform on **Azure** (App Service, Container Apps and Blob Storage) and later on **Google Cloud** (Cloud Run, Cloud SQL and Cloud Storage).

**Software Engineer** */ 2023 - Present*

Sicma21, Barcelona, Spain

- Led development teams in the implementation of industrial MES systems.
- Developed an MES system with **Angular**, **RxJS** and **Angular Material**.
- Integrated manufacturing-specific functionality working alongside industrial equipment.
- Developed **Almacén21**, a warehouse management system with **FastAPI**, React and SQL Server, where **AI** proposes manufacturer, reference and description from the photos the operator takes of the product.

**Full Stack Developer — E-commerce Platform** */ 2023*

Comiral

- Developed a complete online store from scratch with **Next.js** (App Router, Server Components) and **TypeScript**, without relying on third-party commerce platforms.
- Built a **CMS-style admin panel** for order and catalog management: product creation and editing, order filtering by status and control of their lifecycle.

- Implemented the end-to-end purchase flow —catalog, cart, checkout and order history— with stock control to keep inventory consistent.
- Modeled the data in **MongoDB** and integrated authentication with **NextAuth** and Google OAuth, with role-restricted access to the panel.

**Full Stack Developer** */ 2020 - 2023*

321 Ignition, USA

- Led and coordinated development teams on full-stack projects.
- Developed scalable React.js applications following best practices: component composition, custom hooks and optimization techniques.
- Applied clean code principles, SOLID design patterns and modular architecture.
- Managed state with Redux and Context API for complex application flows.
- Ensured code quality through reviews, unit tests and adherence to standards.
- Worked with **Node.js** and both SQL and NoSQL databases.
- Designed and built RESTful APIs for frontend-backend communication.

**Front-End Developer** */ 2019 - 2020*

Soft Dev Team, Colombia

- Programmed in JavaScript (ES6+) for interactivity and DOM manipulation.
- Developed interactive, efficient user interfaces with React.js.
- Used Bootstrap and Material-UI for fast, responsive frontend development.