

Diego Arbeláez Montoya

Forward Deployed Engineer · Head of Software

Barcelona, Spain correo@diegoarbelaez.com +34 692 85 37 61 www.diegoarbelaez.com
linkedin.com/in/diegoarbelaez github.com/diegoarbelaez

PROFILE

Forward Deployed Engineer and Head of Software with 20+ years of end-to-end experience. I work next to the people who own the problem — customers, field crews, public servants — and take software from pilot to production in their environment, from nation-scale public-sector systems to real-time platforms and mobile apps. As an AI enabler, I embed agents, MCP servers, RAG pipelines and conversational assistants into the products I build — always with Spec-Driven Development (SDD), so AI is systematically controlled to produce results.

Spec-Driven Development (SDD)

I don't prompt and hope. I write the specification first — behaviour, acceptance criteria and constraints — and AI agents implement against it, checked by tests and reviews. AI is controlled systematically, so results are predictable, traceable and repeatable.

1. Specify
2. Generate with AI
3. Verify with tests
4. Review and ship

EXPERIENCE

Head of Software
Oct 2025 – Present

Construction-tech · Utility-scale solar · Barcelona

Leading a team of seven engineers and working as a forward deployed engineer close to field crews and customers, I'm building, with spec-driven development (SDD), an AI-powered quality-control platform for solar pile installation that pairs a GNSS/RTK field device with a cloud backend and AI copilots. Shipped the V2 platform to production on AWS (770+ deploys in 2026) with real-time GNSS ingestion, engineered the geospatial pipeline and a self-hosted NTRIP caster for centimetre-level accuracy, and built a multimodal AI field assistant, an AI-assisted onboarding portal and a WebXR device viewer.

Python · FastAPI · PostgreSQL · AWS · WebSocket · GNSS / RTK · Gemini Live · Google ADK · RAG · Three.js / WebXR

Technical Product Developer
Mar 2025 – Present

Plannam · Side project (part-time)

Took Plannam Fichajes, a React Native time-tracking app compliant with Spain's clock-in law, to the App Store one month after its first commit, and onto Google Play: GPS geofencing, QR clock-ins, offline sync and an Expo EAS release pipeline. Built it with Spec-Driven Development (31 specs as the source of truth for AI agents), plus AI shift solvers and an AI QA agent that saves 75% of manual checking time.

SDD / OpenSpec · React Native · Expo EAS · Angular · NestJS · Playwright · MCP · Timefold

Head of Tech
Jan 2024 – Jul 2025

FLiPO Eyewear · Barcelona

Led a team of nine developers across time zones as senior developer and project manager. Shipped AI agents and chatbots on the OpenAI SDK that automated customer support and appointment booking over WhatsApp and Slack, drove the Salesforce and Infobip integrations and brought AI-assisted programming into the team.

React · NestJS · Node.js · MySQL · AWS · OpenAI SDK

SKILLS

Spec-Driven Development

SDD · OpenSpec · Specs as source of truth · Acceptance criteria → tests · Claude Code · Cursor · OpenAI Codex · GitHub Copilot

AI & Agents

MCP · Google ADK · RAG · LangChain · MLflow · OpenAI & Anthropic SDKs · Gemini Live · n8n

Frontend

React · TypeScript · Angular · Tailwind CSS · Three.js / WebXR

Backend

Python / FastAPI / Django · Node.js / NestJS · PHP / Symfony · PostgreSQL · MySQL · MongoDB

Mobile

React Native / Expo · Flutter · Ionic · Capacitor

Cloud & DevOps

AWS · Docker · GitHub Actions · Expo EAS

Leadership

Scrum Master · Project management · Product ownership · Team mentoring

EDUCATION

Telematics Engineering
ICESI University · 2005

Agile SCRUM
BSG Institute · 2019

Mobile World Congress
Barcelona · every year · 2008 – 2022

Full-stack Developer — 2023

Sevilla Town Hall · Colombia

Built from scratch a single-page app for municipal tax filing and PSE online payments, on an API-first Symfony backend with JWT, idempotent payment webhooks and Redis caching. 1,050 taxpayers filed online with it, with 99.9%+ uptime.

React · Symfony · Doctrine · MySQL · Redis · Docker

Mobile Developer — Jun 2022 – Jan 2023

CSI Security App

Designed in Adobe XD and built from scratch two apps — "Uber for private security" — now offered by several security companies in LATAM, including the REST API and the MySQL database behind them.

Ionic · Angular · Capacitor · PHP · MySQL

Full-stack Developer — 2021 – 2023

Ministry of Health and Social Protection · Colombia

Built systems handling up to 10 million COVID-19 vaccination records and the services behind the Minsalud Digital app (10M installs). Cut processing time by 28% through data normalization and made web apps up to 50% faster with query optimization.

Angular · Ionic · PHP · MySQL

Full-stack Developer — 2020

USAID · Worldwide Cooperation Program

Migrated 28 million records for Colombia's Digital COVID-19 Certificate, built the web services for vaccination points (300K+ transactions a day) and trained 200+ developers integrating them.

Angular · PHP · REST · JWT · MySQL

Senior Software Developer — 2019 – 2020

FOX Analytics SAS

Shipped 20+ websites and web apps, wrote shared tooling that sped up development by up to 30% and played Scrum Master while developing, with 1,450+ hours of REST API and backend work.

JavaScript · Angular · Ionic · PHP · MySQL

LANGUAGES

Spanish
Native

English
C1 · Fluent

SELECTED PROJECTS

MCP Server: AI Assistants for Construction QA Data — Sep – Oct 2026

In-House RTK/NTRIP Correction Service for GNSS — May – Sep 2026

AI-Assisted Customer Onboarding Portal — Jul 2026 – present

CSI Security: On-Demand Private Security Apps — 2022 – 2023

Yo Soy Fan: Premium Content Platform for Artists — 2021

Real-Time QA Platform for Solar Pile Installation — Oct 2025 – present

WebXR Digital Twin of a GNSS Field Device — Jun 2026

Colombia's COVID-19 Vaccination Systems & Certificate — 2020 – 2023

Digital Transformation of a Colombian Town Hall — 2020 – 2023

Megainforme: Contract Reporting Platform — 2019

Full case studies at www.diegoarbelaez.com/portfolio/