Sergio M. Chávez

.NET Software Engineer | Full stack · Legacy modernization · 3D & native interop · Custom AI

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SUMMARY

.NET software engineer with over 4 years of experience building and modernizing systems, from backend to interface. I lead development of the successor to a metal carpentry estimation product: I rescued an automated VB6 to .NET Framework migration that had left the system broken, carried out the move to .NET 8, and embedded Unity inside the WinForms application through a C++ interop bridge. Alongside that I'm building Procura, a management platform on .NET 9, PostgreSQL and Flutter with a RAG assistant on top of OpenAI, and Congresito, a 3D visualization of the Argentine Congress in TypeScript and Three.js. Strong skills in C#, SQL, legacy migration and AI integration.

TECHNICAL SKILLS

Languages: C#, SQL, TypeScript, Dart, VB6, C++, PHP

Backend & Data: .NET 8/9, .NET Framework, ASP.NET Core, Minimal APIs, REST, Entity Framework Core, PostgreSQL, SQL Server, JWT auth, Domain-Driven Design, background workers

Frontend: HTML, CSS, Flutter (Riverpod, GoRouter, Material 3), Three.js, Vite

AI: Retrieval-Augmented Generation (RAG), OpenAI API and embeddings, document indexing and retrieval

Native & Interop: C++ interop, Win32 API, window handle reparenting, GDI+ / native C# Graphics, Unity

Tooling & Practices: Azure DevOps (Repos, Boards, Wiki), GitHub Actions, Git, CI/CD, Vercel, Testcontainers, integration testing

PROFESSIONAL EXPERIENCE

Software Engineer, Megevand Soft — Córdoba, Argentina Aug 2022 – Present

Metal carpentry estimation software (2D/3D design)

- **Product rescue:** lead developer of the OP2.1 successor, an industrial ERP/CAD. I took it over after an automated VB6 → .NET Framework 4.8 migration had left it broken, and turned it into a product that is now showcased at industry trade fairs.
- **Migration to .NET 8:** planned and carried it out, checking against the VB6 system to catch and fix regressions.
- **Healthier code:** removed dynamic typing and fixed more than 100 bugs left by the conversion.
- **2D drawing:** after the migration, GDI drew nothing at all. I changed the painting architecture so every method receives the same Graphics object and everything is drawn onto a single component: it worked again, and the app now draws much faster.
- **Interface and user experience:** redesigned the UI with an in-house control library so information is laid out clearly and easy to understand.
- **Unity inside WinForms:** a C++ interop bridge that loads UnityPlayer.dll, runs rendering on its own thread and reparents its window into a panel of the app, all in a single process.
- **Product Groups with Eyeshot:** a new module built from scratch: a graphical editor with snapping, guides, mating and dimensions.
- **Website:** maintenance and improvements to the company website in PHP.
- **Team:** source control and CI/CD with Azure DevOps/TFS and Git; trained the junior developer who joined the team.

Station Supervisor, YPF S.A. — Córdoba, Argentina 2018 – 2021

- Team supervision, cash handling and inventory control while studying software development.

PROJECTS

Procura — Management platform for law firms (personal project)

- .NET 9 backend structured with Domain-Driven Design across bounded contexts; PostgreSQL code-first with EF Core; Minimal APIs with JWT and role-based authorization, and ETag/If-Match for optimistic concurrency; background workers.
- RAG pipeline over OpenAI embeddings: users query their own documents in natural language and get answers grounded in the source material, with automatic indexing of new files.
- Flutter frontend (Riverpod, GoRouter, Material 3), responsive across desktop, tablet and mobile. End-to-end integration tests with Testcontainers.

Congresito — The Argentine Congress in 3D (personal project) congresito.vercel.app

- 3D walkthrough of the Chamber of Deputies and the Senate, seat by seat, with each legislator's votes, attendance and bloc changes.
- TypeScript, Three.js and Vite; public data updates itself every week through GitHub Actions and the site is deployed on Vercel.

EDUCATION

Universidad Tecnológica Nacional (UTN) 2021 – 2022
Higher Technical Diploma in Programming

Universidad Nacional de Córdoba (UNC) 2009 – 2011
Literature (Licenciatura en Letras)

LANGUAGES

Spanish — native. English — professional working proficiency (EF SET C1, 61/100).