

Sebastian Ferreyra Pons

Staff Product Engineer & Software Architect
Data-Rich Web Systems · Technical Leadership

ABOUT ME

Professional summary

I design and build production software where architecture, data, and interface behavior are tightly connected—from multi-tenant operational platforms and accessible maps to WebGL/WebGPU tools and browser-native technical applications.

My recent work uses SvelteKit and TypeScript, supported by Node, PostgreSQL, Python services, testing, and documented delivery. I am most useful when a team needs senior ownership of both the product surface and the system underneath it.

- *Built and modernized production systems with multi-tenancy, roles, and operational workflows.*
- *Designed reusable visualization and mapping systems for Nesta UK.*
- *Led frontend architecture and a four-developer team.*
- *Built open-source WebGL/WebGPU and computational design tools.*

How I work

I take on **full-time roles, contract engagements, part-time technical advisory, and fractional architecture / technical-lead work**, including occasional Fractional CTO engagements when that fits. I work remotely across the Americas and Europe. I'm strongest where architecture, product delivery, and rich interfaces intersect: finance and regulated-operations systems, data-rich products, and AI-augmented engineering workflows.

Comfortable owning delivery end to end or plugging into an existing team as a senior individual contributor or lead.

Personal Information

Name	Sebastian E. Ferreyra Pons
E-mail	sebastian@ferreyrapons.com.ar
Website	https://ferreyrapons.com
PDF résumé	https://ferreyrapons.com/sebastian-ferreyra-pons-resume.pdf HTML résumé · PDF
	GitHub · YouTube · Substack · Bluesky · Mastodon · X
Location	Santiago del Estero, Argentina — remote across the Americas & Europe
Citizenship	Argentina, Canada
Availability	Full-time, contract, advisory, or fractional architecture / technical lead
Languages	English, Spanish, French — written and spoken fluently

EXPERIENCE

2025–Present / Escriba Finanzas — Multi-Tenant Legal-Finance Operations Platform

Modern reboot and expansion of a legal-sector credit-operations system originally delivered in 1999–2002. Rebuilt as a commercial multi-tenant web platform using SvelteKit 2, TypeScript, PostgreSQL row-level security, and Drizzle ORM. Covers credit portfolios, legal cases, payments, reporting, team invitations, role-based access, and migration from a legacy Classic ASP estate. Includes structured documentation, Vitest and Playwright coverage, and an engineering-first delivery process. Commercial product in active development.

2024–Present / Personal R&D — Multifractal Time-Series Prediction Platform

Monorepo research platform combining a SvelteKit frontend, Python ML engine, and custom C++/Rust shared-library resamplers for multiscale time-series tensor generation. Designed a recency-weighted temporal representation that preserves high-resolution recent samples while folding lower-resolution long-horizon context into fixed-shape 3D training blocks. Implemented geometric bin-width ladders, stacked resampling windows, timeline-coupled time encodings, and DSI/multifractal analysis to guide segmentation and view construction. Built feature pipelines generating difference, tangent, and outer-product matrix channels to encode cross-channel structure before modeling. Python stack includes Hydra, Optuna, TensorFlow/Keras, pytest-benchmark, unit tests, experiment workflows, and documentation. Benchmarks on large training-style batches show ~20–40× throughput over a NumPy-first reference path, keeping preparation tractable for series with millions of samples. Independent upskilling project, not commercial product scope.

2024–Present / Independent Web Development

Independent Svelte/SvelteKit web development for production sites and promotional platforms. Example: Aires de Río — a residential development website built with TypeScript, SvelteKit, server-side contact handling, Node-based deployment, and custom 3D/photogrammetry-based hero visuals. Focused on polished frontend execution, interactive presentation, performance, and deployment-ready delivery.

2020–2024 / Frontend and Dataviz Developer

Frontend and dataviz developer using Svelte/SvelteKit, XState and Lamb to develop accessible data vizualization frameworks, tools and websites. Nesta UK, London.

2019–2020 / Frontend Team Lead

Frontend development team lead managing four devs, frontend architect and backend developer for a CRM system using React on the frontend and a Python/Flask/SqlAlchemy/PostgreSQL stack on the backend publishing a REST API service. GoManzanas, Palo Alto, CA.

2016–2017 / CTO, Technical Project Manager and Software Architect

Project manager for Infomernx developing web based administrative systems and applications. Tasks involved deciding the technology roadmap, hiring, training, directing & maintaining a development team, interacting with sales & marketing and designing the architecture of the system based on commercial and technical requirements. Technologies used included Three.JS, Node.JS, React.JS, Socket.IO and various others.

2015-Present / Participation in Interactive Arts Collective

Visual experimentation, live coding performances with live musical bands and interactive installations in Santiago del Estero. Tripulantes, Casa Nave, Santiago del Estero, Argentina.

2015-2016 / Web Technologies Workshops for Artists

Organization of educational workshops teaching web technologies like HTML5, CSS and Javascript for contemporary and conceptual artists. Casa Nave, Santiago del Estero, Argentina.

2013-2015 / Technical Project Manager and Software Architect

Project manager for Ensembleweb developing a gameification based website for enhancing engagement and performance in sales workgroups for EnsembleWeb, a Canadian web site development company. Tasks involved hiring, training, directing & maintaining a development team, interacting with marketing and designing the architecture of the system based on commercial and technical requirements. Technologies used included Node.JS, Angular.JS, React.JS, Socket.IO EnsembleWeb

2010-2014 / Wordpress Plugin Development

Consulting, custom plugin design and development for EnsembleWeb, a Canadian web site development company. EnsembleWeb

2008-2013 / Graphic Design & Technical Consulting

Graphic design, CGI imaging, technical consulting & special purpose software development for Expressart, an advertising agency based in Santiago del Estero, Argentina. Expressart

2007 – 2008 / Team Leader & Software Development

Development of software tools for the human resources industry including design implementation and developer team coordination. The system, based on modern architectural design, provides a sophisticated desktop user interface but accesses distributed web services under the hood thus providing a complete user experience while still reaping the benefits of SOA (Service Oriented Architectures). Responsibilities included maintenance of the various servers running in the system, of the promotional web site and the authorship and maintenance of source code in Java, C# 2.0, HTML and SQL for software destined to run on Windows and Linux. **CandidateHunter International**

2003-2006 / Project Management & Software Development

Funding and managing a 3-person team in the development of an object oriented graph database engine and its supporting developer and management tools for Microsoft's .NET environment and Sun's Java platform. This OODB was my design and is intended to support nearly orthogonal data-persistence facilities for data objects in these platforms. Features being developed include ACID transactions, multi-server distributed storage nodes and data versioning for the purposes of auditing and conflict-resolution.

2004-2005 / Website Content Editor

Front-page story editor for JavaLobby.org, a website specializing in the Java developer community. The main responsibilities involve screening daily Java-related news and writing small articles with the intent of generating in-depth discussions among the members of the Java community. These tasks require staying up-to-date in all Java industry developments.

2000-2004 / Ingeniería de Software

Low-level development of high-performance primitive graphics rendering APIs and components for Java applications including gradient rendering at speeds equalling solid color filling in that platform. Different versions of these components are licensed to open-source projects (**Kunststoff LnF** y **Metouia LnF**) and a **version taking advantage of hardware acceleration** to **Jide Software** for use in its component suite y and user interface framework.

2002-2003 / Software Engineering

Development of software architecture and components for internet connected multi-user server providing multi-company unified facilities for bus seat availability, reservation and ticket sale for nation-wide remote terminals. This system provides a graphical display over a map and when there is no direct service between two geographic points, provides possible connection points based on user-selected time constraints. 2-tier client/server architecture: Database with business logic in Stored Procedures on the server and Java technology including JDBC and SWT on the client-side.

1999-2002 / Software Engineering

Development and maintenance of multi-user system for legal firms managing overdue credit accounts using Java technology including Servlets, JSP, JDBC, JSP, XML, XSL, Dynamic HTML and CSS. 4-tier client/server architecture: Database, Business logic, Document generation on the server side and User Interface in the client. Currently running on company managing 43000+ accounts judicially and extra-judicially on database distributed over several provinces in northwestern Argentina, synchronized through the Internet. The same domain is being modernized in the **Escriba Finanzas** initiative (2025–Present; see above).

1998-2001 / Website Administrator

Web site design, implementation and webmastering for **Poder Judicial de la Provincia de Sgo. del Estero**. This site belongs to the judicial branch of power of this province. Everything in this site including the navigational structure, graphics and animations was designed and created by me. Although no longer in charge, much of the graphics, animations and source code currently in use remain my creation as can be verified by the copyright notice in the html source code.

1998-1999 / Manager - Technical Service & Support Department

Head of technical department for the local franchise of **Arnet**, the largest ISP in Argentina. This franchise includes all the territory of the province of Santiago del Estero.

1996-1997 / Technical Consultant - Information Technology

Development of small information systems in Java for companies local to Sgo. del Estero, Argentina. Personnel training for various organizations in Sgo. del Estero on basic Internet Skills. Consultant for **Icox**, a Canadian-Argentine company providing internet services for Argentine businesses. Ref. **Bruno Schmidt**

1993-1998 / Technical Consultant - Graphics and Video

In charge of installation and maintenance of computer systems and digital/analog video editing equipment. Computer Animation for video. Calibration, digital treatment and preparation of pre-press originals for color catalogs and flyers. Personnel training to assist in these tasks, **AMP Producciones**, Sgo. del Estero, Argentina.

Technical consulting and personnel training, **FREDY Publicidad**, San Miguel de Tucumán, Argentina.

2D & 3D graphic design. Participation in production of TV commercials for these companies.

1992 / Sales Representative

Sales and promotion of educational material and personnel training for direct sales and marketing. **Grolier Inc**, Canada.

1990-1991 / Software Developer

Design and implementation of computer applications and tools, LAN and computer system maintenance and personnel training. Among applications developed are data acquisition and control programs for gel electrophoresis of DNA and mathematical analysis tools, **S.U.N.Y. at Stonybrook, biochemistry department**. Ref. **Dr. Benjamin Chu**

1989-1992 / Freelance Graphic Designer

Freelance graphic design for small companies and businesses in Long Island.

1989-1992 / Programming Assistant

Participation in development of routines in C and Assembly Language for large programming projects for companies such as Radio Shack/Tandy and Lavalin Engineering Inc. in Montreal, Canada. **SOFTPOWER Inc.**, New York.

TECHNICAL SKILLS & DELIVERY STRENGTHS

Product engineer and software architect with deep full-stack, frontend, data-visualization, systems, and delivery experience. Current work centers on SvelteKit, TypeScript, SQL/NoSQL databases, testing, documentation, and LLM-assisted development; long-range background includes systems architecture, graphics, native code, and technical leadership.

Full-stack & production web

Core: TypeScript, JavaScript, Svelte / SvelteKit, React, Node.js, HTML, CSS, Web APIs, REST, accessibility-minded UI, data visualization, XState, Three.js / WebGL.

Recent shipping stack centers on SvelteKit 2 and TypeScript across commercial multi-tenant software, personal sites, and R&D frontends. Earlier professional work includes React CRMs, Nesta-era Svelte/SvelteKit data visualization, and Node- and Python-backed services.

Uses modern LLM coding assistants and agent-style workflows for implementation, review, refactoring, migration, and documentation while retaining direct code ownership and quality control.

Leadership & delivery

Engineering team leadership, frontend architecture, hiring, technical interviews, mentoring, training, roadmap decisions, stakeholder alignment, and technology selection.

Direct experience leading development teams across multiple projects, including frontend-architect and backend work on a React + Python/Flask/PostgreSQL CRM. CTO and technical project-management roles added hiring, training, directing developers, and aligning engineering work with commercial requirements. Also delivered web-technology workshops for artists covering HTML, CSS, and JavaScript.

Platform, data & quality

SQL and NoSQL databases — e.g. PostgreSQL (with row-level security), SQL Server, MySQL, MongoDB, and Elasticsearch / OpenSearch — plus Drizzle ORM, Vitest, Playwright, pytest, technical documentation, migration planning, and testable delivery workflows.

Current product work emphasizes multi-tenant PostgreSQL with RLS, structured documentation, and automated tests. Prior stacks include Flask, SQLAlchemy, JDBC-backed multi-tier systems, and legacy database-backed business applications.

Systems, native code & legacy depth

Systems architecture, interactive graphics, communications, data acquisition and control, operating systems, utilities, and long-running business systems.

Comfortable across Linux, Windows, and UNIX-class environments, with early-career breadth from PC and embedded-era platforms through today's cloud-oriented deployments.

Representative languages include JavaScript/TypeScript, Java, C#, F#, C/C++, assembly, BASIC, Pascal, and Fortran. Historical web and enterprise experience includes JSP/servlets, JDBC, XML/XSL, Classic ASP, ASP.NET, IIS-era deployments, Socket.IO, and Angular.js-era SPAs — retained where migrations or maintenance matter, not as the current default stack.

ML / AI engineering

Python, TensorFlow/Keras, Hydra, Optuna, experiment workflows, benchmarking, C++, and Rust performance libraries.

Personal R&D focuses on multiscale time-series preparation and modeling. The emphasis is engineering depth: numerical representation, fast native resampling, feature pipelines, experiment automation, and integration with standard Python ML tooling. Not positioned as commercial ML leadership.

Creative, visualization & tooling

Blender, photogrammetry-informed 3D for the web, Three.js/WebGL, data visualization, Adobe/GIMP design workflows, WebStorm, and modern editor toolchains.

Earlier professional work included 3D Studio Max, Illustrator, print/video production tooling, CGI imaging, graphics pipelines, and interactive visual experimentation.

Teaching, communication & commercial context

Extensive teaching, mentoring, and training experience. Background in marketing, advertising, print, radio, TV, web, and direct sales, useful when engineering work must connect clearly to users, clients, and business requirements.

EDUCATION

1991-1992

Three terms of advanced courses in mathematics, computer science and physics at **S.U.N.Y. (State University of New York) at Stonybrook.**

1989-1991

Grades 11 and 12 at Smithtown High School East, St. James, NY. Including elective college level courses on computer science, mathematics and analog and digital electronics.

1985-1989

Grades 7, 8, 9 and 10 at F.A.C.E. (Fine Arts Core Education), Montreal, Quebec, Canada. F.A.C.E. is a bilingual (English and French) school with academic orientation toward the arts.

1977-1984

Primary education in Spanish in Santiago del Estero, Argentina except 1982 finished in Flagler Elementary School, Miami, Florida.