

Carlos Hinostroza Droguett

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Open to Relocation (SF Bay Area / Global / Visa Sponsorship)

PROFESSIONAL SUMMARY

Principal Systems Engineer & Researcher with **10+ years** of mastery in Native Mobile ecosystems (**Swift/Kotlin**) and high-scale distributed architecture. Proven track record of organizational leadership, managing **15+ engineers** and driving the career progression. Currently architecting deterministic AI orchestration at **ZEA**, leveraging **Elixir/OTP** and **Rust** to solve the reliability gap in agentic workflows. Expert in bridging low-latency infrastructure with world-class **Developer Experiences (DX)** and high-performance mobile products.

CORE COMPETENCIES

- **Mobile Architecture:** Native Excellence (10+ yrs Swift/Kotlin), React Native Bridge Optimization, **Kotlin & Compose Multiplatform (KMP/CMP)**, Clean Architecture (MVI/MVVM), Performance Profiling (TTI/Memory).
- **AI & Systems Infra:** LLM Orchestration (Cerebelum/Cortex), Event Sourcing, gRPC, Distributed Systems, **Rust (Actor Model/OTP-style)**, Elixir/OTP, Observability.
- **Engineering Strategy:** **DX-focused API Design**, Mentoring & Upskilling, Technical Evangelism, Cross-functional Leadership, Product Lifecycle Management (Scaling teams from 10 to 100+ members).

PROFESSIONAL EXPERIENCE

Founder & Lead AI Architect | ZEA Platform | Oct 2024 – Present

- **Cerebelum:** Architected a next-generation orchestration engine in **Elixir/OTP**, bridging the gap between **LangGraph's** stateful graph management and **Temporal.io's** workflow durability.
- **Hybrid Orchestration:** Designed the system to handle high-throughput event-sourcing for deterministic AI agent execution, featuring long-running process hibernation and "time-travel" debugging capabilities.
- **Cortex:** Developed a resilient **AI Gateway** featuring sub-millisecond failover and intelligent routing across OpenAI, Anthropic, and local LLMs, reducing API costs through optimized prompt caching and token rotation.
- **Systems Integration:** Adopted a **DX-first (Developer Experience)** approach in designing **gRPC SDKs** that bridge mobile edge devices with complex Elixir backends; successfully **minimized workflow cognitive load and reduced implementation**

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Principal Software Engineer (Mobile) | MOBDEV | Apr 2018 – Sep 2024

- **Organizational Impact:** Played a pivotal role in scaling the engineering organization from **10 to 100+ members** while directing the Android unit (15+ devs).
- **Architecture Strategy:** Led the technical migration of high-traffic platforms to a hybrid **React Native** stack, building custom **Native Modules (Swift/Kotlin)** that solved TTI bottlenecks and significantly enhanced overall application responsiveness.
- **Scale:** Spearheaded the adoption of **Kotlin & Compose Multiplatform (KMP/CMP)** to share both business logic and UI components across platforms. This initiative resulted in a **30% reduction in maintenance costs** and a highly unified engineering culture for iOS and Android.
- **Mentorship:** Established a technical career ladder that promoted **5 junior engineers** to Senior/Lead roles within 24 months, increasing team retention by 20%.

Android Engineer | Multicaja S.A. (Fintech) | May 2017 – Oct 2018

- Modernized a mission-critical financial app for 1M+ users, implementing **TDD** and **Clean Architecture**. Achieved **99.9% crash-free sessions** and **reduced critical bug reports by 60%** within the first 6 months.

Software Engineer (R&D) | Pontificia Universidad Católica de Chile | Aug 2015 – Sep 2016

- **Advanced Medical Imaging:** Developed cardiovascular software for **3D blood flow quantification** and structural measurements using **Finite Element Methods (FEM)**.
- **Systems Interoperability:** Engineered a high-performance integration layer between low-level **Objective-C** libraries and **Python**, exposing complex C-based **image quantification algorithms** to researchers and scientists for advanced data analysis.
- **Optimization:** Optimized volumetric data processing pipelines, reducing **image quantification and processing time by 50%** while maintaining precision for clinical research.

Co-Founder | Loadingplay (Startup Factory) | Jan 2012 – Dec 2014

- Directed the full tech lifecycle for a portfolio of digital products. Managed the delivery of **12+ MVPs**, leading to successful market validation.

Software Engineer (R&D) | Gtd (Telecommunications) | 2010 – 2011

- Built a real-time monitoring platform for national-scale network infrastructure, handling **high-concurrency data ingestion** for equipment observability across 500+ nodes.

EDUCATION

- **M.S. in Computer Science (Candidate)** | Universidad de Santiago de Chile
 - *Thesis: Implementing OTP-style concurrency primitives in **Rust** for memory-safe, high-throughput AI agent orchestration.*
- **B.S. in Software Engineering** | Universidad de Santiago de Chile