Ricardo **Piro-Rael**

SENIOR BACKEND ENGINEER · DISTRIBUTED SYSTEMS ARCHITECT

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Skills

Languages	Python (Expert), SQL, Ruby, Scala, Swift
Data & Storage	PostgreSQL (Internals, Tuning), Redis, Firestore, CoreData
Infrastructure	Google Cloud Platform (GCP), Docker, Cloud Run, ROS
Concepts	Celery, Kafka, Distributed Systems, Asynchronous Event Loops, Hardware Integration

Work Experience

GainTain, Inc. *San Francisco, CA*
CTO & COFOUNDER *May 2025 - Present*
- Architected a hybrid data model using **PostgreSQL** for strict transactional integrity and **Firestore** for low-latency, real-time client synchronization.
- Built a highly concurrent backend using **FastAPI** and **Google Cloud Platform (GCP)**, designing for idempotency and horizontal scalability from Day 1.

The June Care Company *Remote*
HEAD OF ENGINEERING (MAY 2025) • SENIOR SOFTWARE ENGINEER (JAN. 2024) *Jan. 2023 - May 2025*
- Executed a "lift and shift" infrastructure migration from AWS to GCP, ensuring zero downtime for legacy systems.
- Modernized a legacy Rails monolith on GCP Compute Engine, implementing aggressive cost-optimization strategies that significantly reduced monthly cloud spend.
- Led the engineering team through a period of resource constraints, prioritizing stability and performance improvements.

Carta *San Francisco, CA*
SENIOR SOFTWARE ENGINEER *Oct. 2022 - Jan. 2023*
- Engineered high-precision financial reporting pipelines using **Python** and **Scala**, ensuring strict data accuracy for equity management.

Iron Ox *San Carlos, CA*
SENIOR BACKEND ENGINEER *Jan. 2022 - Oct. 2022*
- Developed control software for autonomous agricultural robots using **Python** and **ROS** (Robot Operating System).
- Bridged the gap between high-level REST APIs and low-level hardware execution, writing code that directly actuated propagation and mover robots.
- Debugged complex hardware-software integration issues in a live production farm environment.

Unit21 *San Francisco, CA*
SOFTWARE ENGINEER *Aug. 2020 - Dec. 2021*
- Maintained and optimized a fraud detection distributed system ingesting **billions of transactions**.
- Architected the "Embedded Filters" engine, a domain-specific query builder that allowed users to compose complex logical conditions; this feature became a primary revenue driver for the platform.
- Acted as a lead "firefighter" for critical production incidents, stabilizing the codebase through aggressive refactoring of legacy Python/Flask services and optimizing database query performance.

Hint Health *San Francisco, CA*
APPLICATIONS ENGINEER *Jun. 2018 - Aug. 2020*
- Designed the "Affiliates" synchronization protocol, enabling independent provider networks to securely share patient data and coordinate care.

University of New Mexico *Albuquerque, New Mexico*
APPLICATION DEVELOPER & TEACHING ASSISTANT *Aug. 2014 - Jun. 2018*
- Served as Technical Lead/TA for a Ruby on Rails MOOC with **50,000+** students, managing automated grading systems at scale.
- Developed the OpenDaylight SDN interface for a **US Air Force** network security prototype, translating high-level policies into physical switch flow rules.
- Integrated research-grade NLP modules into legacy Java simulations for a **US Navy** Anti-Submarine Warfare grant (STTR), enabling enhanced operator spatial awareness.
- Replaced a brittle Prolog-based degree audit system with a flexible graph-based data structure, enabling complex requirement verification.

Education

University of New Mexico *Albuquerque, New Mexico*
SELECTED COURSEWORK IN COMPUTER ENGINEERING (FOCUS ON HARDWARE/SOFTWARE INTEGRATION) *2014 - 2018*