

Rolando Medina Rosner

Full-stack Software Engineer

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Summary

Full-stack engineer with 3 years building and modernizing the hospital information system used across Paraguay's national public hospital network. On a three-person team, led its migration off legacy Java/jQuery to React and TypeScript, introduced containerized deployment and CI/CD, and now own most of its frontend, backend internals, and deployment work.

Experience

Software Engineer, Taiwan ICDF — National Hospital Information System – Asunción, Paraguay Mar 2024 – present

- Own inpatient clinical modules end-to-end (physician orders, diagnoses, nursing workflows, pharmacy and medication requests, medical-history PDF export), used daily by clinical staff across the national public hospital network.
- Rebuilt the largest legacy module from unmaintainable JSP/jQuery into structured TypeScript, and restructured its Struts backend into a DAO/DTO JSON API.
- Replaced webpack with rsbuild, cutting frontend build times by ~60%.
- Chose React over Lit for the rewrite (Lit could not meet SSR requirements), built the entire project setup, and shipped the three most complex modules — physician, nursing, pharmacy — to production.
- Building an offline-first PWA so rural hospitals keep operating through multi-day connectivity loss, using an IndexedDB outbox, service-worker background sync, and version-tagged DTOs that migrate stale client data on reconnect.
- Replaced script-based WAR deployments with a two-image Docker Compose setup; prototyped a k3s cluster and evaluated OpenYurt for edge-deployed hospital servers.
- Self-hosted an LLM and wrote the schema, retrieval, and prompt layer enabling natural-language-to-SQL queries over the clinical database.

DevOps Engineer Jr. (previously Frontend Developer Intern), ROSHKA S.A. – Asunción, Paraguay Aug 2023 – Feb 2024

- Built Jenkins CI/CD pipelines using Git Flow and GitHub Flow, containerized services with Docker, and integrated SonarQube quality gates.
- Contributed React frontend work to a banking web application as an intern; hired into a full-time engineering role at its conclusion.

Projects

Text-to-SQL RAG

Self-hostable natural-language-to-SQL assistant — code

- Answers plain-language questions by writing safe, read-only SQL, with defense-in-depth safety (SELECT-only DB user, sqlglot AST validation, enforced LIMIT), 4-tier RAG retrieval, SSE streaming, and an MCP server.
- FastAPI, Python, React 19, ChromaDB, Ollama/vLLM; runs fully self-hosted with no external API.

D y R Transportes

Production logistics platform — code

- In daily production use by a grain-transport company for trip, cargo, and driver-payment records, including the reports required by the national transport regulator.
- React, TypeScript, Vite, and Material UI (X Data Grid/Charts) frontend; Flask and MySQL backend; self-hosted with multi-arch Docker and Jenkins pipelines, built solo.

Sentiment Analysis on Financial News

2023

Final degree project

- Collected an original financial-news dataset and compared machine-learning methods (finBERT, pyABSA) for classifying article tone against stock-price movement; flagged by the department as one of the standout projects of the 2023 class.

Education

Universidad Politécnica Taiwán – Paraguay (UPTP), BSc in Computer Engineering

2020 – 2024

- GPA 4.81 / 5.00. Exchange student at National Taiwan University of Science and Technology (NTUST), 2022–2023.

Skills

Frontend: TypeScript, React, Next.js, PWA and service workers, IndexedDB, Tailwind CSS, Material UI, shadcn/ui

Backend: Java (Struts, Spring Boot), Python (Flask, FastAPI), REST API design, SQL, MySQL, PostgreSQL, C/C++

Infrastructure: Docker, Kubernetes (k3s), Terraform, GitLab CI, Jenkins, Proxmox, Linux

AI / Data: PyTorch, scikit-learn, pandas, NumPy, transformer models, self-hosted LLMs (vLLM), RAG

Languages: Spanish (native), English (TOEFL iBT 6/6, CEFR C2), German (B1), Mandarin (elementary)

Certifications: NVIDIA DLI Fundamentals of Deep Learning; Machine Learning (Stanford); Statistics 110 (Harvard)