

Nicholas Russo

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Skills

Languages: Python, Go, Rust, C, C++, JavaScript

Backend/APIs: FastAPI, Flask, Django, Ruby on Rails, gRPC

Infrastructure: Docker, Linux (Fedora, Ubuntu, RHEL/CentOS, CoreOS, Gentoo), AWS, GCP, DigitalOcean, Cloudflare

Databases: PostgreSQL, SQLite, MySQL, Redis, ChromaDB, DuckDB

Tools: Git, GitHub Actions, Zed, Ghostty, Fish

Projects

omendb | github.com/omendb/omendb | *Rust, Python, Vector Database*

- Embedded vector database for Python. ACORN-1 filtered search, RaBitQ quantization, hybrid search. LangChain and LlamaIndex integrations

seerdb | github.com/omendb/seerdb | *Rust, Storage Engine, Database Systems*

- LSM storage engine with ALEX learned indexes and WiscKey key-value separation. 2.5x faster writes, 2x faster reads, and 5x lower write amplification vs RocksDB

pacabot | *Rust, Finance, Quantitative*

- Quantitative trading system. Black-Scholes pricing, Kelly criterion sizing, real-time volatility tracking with regime detection

jb | github.com/nijaru/jb | *Rust, Developer Tools*

- Background job manager for long-running tasks. Parallel execution, session persistence, real-time monitoring. Used for AI agent workflows

aircher | github.com/nijaru/aircher | *TypeScript, Bun, AI/ML*

- Local-first memory framework for AI agents. Multi-layer memory (episodic, semantic, contextual, task-based) with pluggable archetypes

Experience

Software Engineer

January 2021 - May 2023

Omnitier, Inc.

- Reduced test suite runtime by 90% (45 min to 5 min) by reducing syscall overhead in filesystem operations
- Built Python backend API and gRPC integrations for distributed services
- Developed regression testing infrastructure in Go and Python

Awards

2nd Place & Ingenico Winner, Money 20/20 Las Vegas 2016 | Team Kairos

- Developed cross-terminal payment application with REST API for business partnerships. Built with Go and PostgreSQL, deployed on CoreOS

Education

42 Silicon Valley

2018 - 2020

Computer Science

Fremont, CA

Las Positas College

2014 - 2015, 2016 - 2018

Computer Science

Livermore, CA

- Computer Science Club President 2016 - 2017

Dev Bootcamp

March 2016 - May 2016

Web Development

San Francisco, CA