

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

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 than RocksDB with 5x lower write amplification

omendb | *Rust, Vector Database, Database Systems*

- Vector database with embedded library (oadb) and cloud service. Tested at 1-10M+ vectors, optimizing for billion-scale. Tiered storage (RAM → SSD → S3)

Pacabot | *Python, LangGraph, AI/ML, Finance*

- AI trading bot using LangGraph multi-agent system with 13 data sources including market data, SEC filings, news, and social sentiment. Real-time research with automated risk management

Aircher | github.com/nijaru/aircher | *Python, LangGraph, AI/ML*

- AI coding agent with 3-layer knowledge system (SQLite + DuckDB + ChromaDB). LangGraph multi-agent orchestration with cross-session learning. ACP-compatible

sy | github.com/nijaru/sy | *Rust, CLI Tools, Systems Programming*

- Modern rsync alternative in Rust. 2-11x faster for local ops, delta sync, SSH/S3 support. Published on crates.io and Homebrew

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

Computer Science

2018 - 2020

Fremont, CA

Las Positas College

Computer Science

2014 - 2015, 2016 - 2018

Livermore, CA

- Computer Science Club President 2016 - 2017

Dev Bootcamp

Web Development

March 2016 - May 2016

San Francisco, CA