

# Nicholas Russo

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## Skills

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**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

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**omendb** | [github.com/omendb/omendb](https://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](https://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*

- Rust trading bot with statistical edge detection. Real-time price feeds, fair-value pricing, risk-managed position sizing

**jb** | [github.com/nijaru/jb](https://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](https://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

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### 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

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**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

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### 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