

# Nicholas Russo

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## Skills

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**Languages:** Python, Rust, Go, Mojo, 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, PyO3, maturin, ONNX

## Projects

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**omendb** | [github.com/omendb/omendb](https://github.com/omendb/omendb) | *Rust, Python, PyO3, Vector Database*

- Embedded vector database with Rust core and Python bindings via PyO3/maturin. ACORN-1 filtered search, RaBitQ quantization, hybrid search. LangChain and LlamalIndex 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

**hhg** | [github.com/nijaru/hhg](https://github.com/nijaru/hhg) | *Mojo, Python, ONNX*

- Semantic code search tool. Embeds code with ONNX models for concept-based search across codebases, complementing traditional grep workflows

**jb** | [github.com/nijaru/jb](https://github.com/nijaru/jb) | *Rust, CLI, Developer Tools*

- CLI for managing long-running background tasks. Session-persistent execution, parallel jobs, real-time monitoring. Built for AI development workflows

**pacabot** | *Rust, Finance, Quantitative*

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

## 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 profiling and reducing syscall overhead in filesystem operations
- Built gRPC Python API layer for distributed Go backend services
- Developed regression testing infrastructure across Go and Python codebases

## 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

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*