

Nicholas Russo

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Skills

Languages: Python, Rust, Go, TypeScript, Ruby, C, C++

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, Bun, ONNX

Projects

omendb | github.com/omendb/omendb | *Rust, Python, TypeScript, PyO3, Vector Database*

- Embedded vector database, 4x faster than hnswlib. Rust core with Python (PyO3/maturin) and TypeScript (napi-rs) bindings. Powers a Claude Code memory plugin for persistent agent context

omengrep | github.com/nijaru/omengrep | *Rust, Python, ONNX*

- Semantic code search CLI. ONNX embeddings for concept-based retrieval and tree-sitter AST parsing across 22 languages

canto | github.com/nijaru/canto | *Go, AI/ML*

- Go framework for LLM agents and swarms. Composable provider, agent, session, and tool interfaces with multi-provider support, append-only session state, and deterministic orchestration

ion | github.com/nijaru/ion | *Rust, Go, AI/ML*

- Coding agent with multi-provider LLM support and persistent context management. Go rewrite in progress on canto

aku | github.com/nijaru/aku | *Go, net/http*

- Go web framework for JSON APIs. Typed handlers with automatic request extraction, zero-reflect hot path, and OpenAPI 3.0 generation. 5% faster with 41% lower memory than raw net/http

jb / tk | github.com/nijaru/jb | *Rust, Go, CLI*

- Agent tooling: jb manages long-running background tasks with log streaming; tk tracks tasks and dependencies across LLM context boundaries

Experience

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

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