Will Ruggiano

[GitHub]: https://github.com/willruggiano
[LinkedIn]: https://linkedin.com/in/willruggiano

Summary

Software engineer with 9+ years building high-performance systems at scale. Deep expertise in modern C++ (11/14/17) and distributed systems architecture. Self-directed learner with strong theoretical foundation in consensus protocols (Raft, Paxos, Viewstamped Replication) through academic papers, open-source code study, and readiness to translate theory to production implementation. Proven track record of delivering robust, scalable solutions handling millions of daily transactions at Amazon/AWS.

Core Skills

Languages: C++ (11/14/17, familiar with 20+ features), Lua, Nix, Python, TypeScript, Zig (learning)
Systems: Distributed systems, real-time streaming protocols, concurrent/multi-threaded programming
Infrastructure: AWS, Docker, PostgreSQL, DynamoDB, Linux systems administration
Protocols & Concepts: UDP/STUN/TURN, consensus algorithms (theoretical), fault tolerance, idempotency

Experience

Software Engineer, Amazon/AWS

2016 – 2023

- Core developer in a small team building a real-time streaming protocol for AWS WorkSpaces
  - Implemented high-performance C++17 library optimized for high-latency, low-throughput environments
  - Designed fault-tolerant protocol with ordering guarantees and data consistency mechanisms
  - Built configurable multi-threaded/single-threaded execution modes for cross-platform compatibility (including WASM)
  - Developed UDP-based transport layer with STUN/TURN integration for NAT traversal
- Scaled notification service to handle Amazon's order-volume scale notifications requirements
  - Designed and deployed new Java-based service replacing legacy Perl system
  - Achieved 70% infrastructure cost reduction through architectural improvements and resource optimization
  - Discovered and fixed critical bug causing 20% message loss in legacy system, recovering significant revenue
  - Ensured distributed system reliability through idempotency and fault-tolerant design patterns
- Led iOS rich-content push notification integration for Amazon mobile app
  - First engineer to identify and implement Apple's new notification APIs
  - Delivered feature supporting Amazon's order-volume scale notifications

Software Engineer, Tendrel

2023–2025

- Full-stack engineering on internal tools (React, TypeScript, GraphQL, Postgres).
- Developed a state-machine-driven runtime framework for dynamic workflows.
- Managed developer environment automation and CI/CD using Nix.

Open Source / Tooling

- neovim-nightly-overlay: Co-maintainer; manages nightly Neovim builds in the Nix ecosystem.
- neovim.drv / dotfiles: Personal Nix-based dev environment; Linux and Neovim configuration, declarative system setup.
- tendrelhq/graphql: Application backend demonstrating state-machine orchestration via GraphQL.
- Random side quests :)

Education

B.S. Architecture, University of Virginia

2012–2016

- Transitioned from architecture to software engineering; self-taught in Java, Python.