Ryan Robinson

Software Engineer

Modern C++ · Real-time Programming · Signal Processing

(503) 867-7878
rygrob@gmail.com
rygrob.com
Medford, OR · Open to relocation

SUMMARY

Software engineer experienced with hard real-time constraints, lock-free concurrency techniques, and development of audio signal-processing algorithms. Nine years experience owning and shipping commercial software.

SKILLS

Languages	C++, Swift, Objective-C, Python
Platforms	macOS, Windows, iOS, Android
Tools	CMake, Git, Xcode
Focus Areas	Real-time programming, SIMD optimization, polynomial function approximation

EXPERIENCE

Owner & Software Engineer | Sketch Audio, LLC 2023–Present

- Shipped five commercial audio plug-ins written from scratch in C++.
  - Designed, implemented, and optimized audio DSP algorithms.
  - Built a minimal, cross-platform UI framework.
  - Automated releases including validation against four plug-in format specs.
- Built **tinyplug**, a C++20 audio plug-in framework.
  - Designed architecture for decoupled UI and real-time-safe DSP code.
  - Implemented lock-free and wait-free concurrency primitives.
  - Implemented platform-specific layers for macOS, Windows, and iOS.
- Built **vsl**, a header-only C++20 SIMD-compatible math library for ARM NEON and x86 SSE.
  - Derived polynomial fits for transcendental functions using Python.
  - Achieved precision within 20 ULP (float32), performance up to 3x faster than standard library per scalar call.

Mobile Developer | Self employed 2017–Present

- Created a portfolio of iOS and Android apps with over 200,000 downloads.

High School Math & Science Teacher | Rogue Valley Adventist Academy 2016–2021

- Taught math (pre-algebra through precalculus), physics, chemistry, and technology.
- Designed curriculum for technology class, including basic programming and 3D printing.

TALKS

Fun with Functions (50 min) | Audio Developer Conference Bristol Nov 2026

Survey of approximation theory focusing on Chebyshev polynomials, with C++ examples and benchmarks.

Fun with Functions (20 min) | ADCx San Francisco May 2023

Overview of Taylor polynomials, Padé approximants, and minimax approximations for transcendental functions.

EDUCATION

B.S. Biology, minors in Chemistry and French — *summa cum laude* | Walla Walla University 2016

Coursework in C++ through data structures; math through linear algebra and differential equations.