

Russell McClellan

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Summary

I'm a software developer with a career focus on building innovative products to inspire creativity in customers. I've contributed to over 20 new software product launches as a developer, tech lead, or architect, including software that has won an [Emmy](#). I have a pragmatic approach to software development and I believe in using the best tool for the job. I have a track record of enabling teams to excel technically through mentorship and collaborative system design.

Key Skills

- Professional experience creating software in **C++**, **Typescript**, and **Python**, personal experience with **Rust** and **Haskell**
- Development and productization of **machine learning** solutions
- Shaping product strategy from a technical portfolio perspective
- Guiding teams to continuous improvement of practices and tools such as **codebase design**, **CI/CD**, **automated regression testing**
- Designing APIs, systems, and libraries to enable teams to quickly create valuable features
- Communicating the needs and goals of engineering teams to non-technical stakeholders
- Signal processing algorithm design and implementation for **audio effects**
- Developing robust and high quality **cross-platform**, **multi-threaded**, and **soft real-time** software for **Apple** platforms, **Windows**, **embedded Linux**, **bare-metal embedded**, **Linux-based servers** and **containers**, and the **web**
- Improving quality and adding new capabilities to large, pre-existing codebases
- Measuring and improving run-time performance of code
- Technical leadership for agile product teams

Work Experience

2016- Principal Software Engineer
2014-2016 Senior Software Engineer
iZotope, Inc., Cambridge, Massachusetts

Technical System Design

I've been responsible for technical design of important systems that enabled teams to rapidly deliver novel features in cross-platform audio software, including:

- Deep learning driven audio analysis and processing
- Cloud-delivered signal processing and UI for audio plug-ins
- Inter-plug-in communication system enabling [features that work across our products](#)
- High-framerate audio metering with best-in-market temporal accuracy
- Behavioral Analytics reporting, enabling valuable insights about how customers use our products

Product Strategy

- Acted as the technical voice in cross-functional "Product Strategy Taskforce" responsible for setting strategic pillars for iZotope's music-focused products
- Participated as the technical member of a cross-functional discovery and prototyping team, leading to a new design direction for our assistive features, enabling improvements across our product line.

Team Enablement

- Provided frequent mentoring and technical guidance across all levels of the engineering team.
- Introduced or created developer productivity tools to the company, including automated C++ refactoring, static analysis and runtime sanitizers in CI, automated statistical analysis and regression testing of runtime performance in CI, and Python bindings to allow faster development of integration-level testing
- Acted as technical product owner of the "DSP Chapter", a working group of cross-team engineers dedicated to improving signal processing codebase

Signal Processing

- Invented and co-invented numerous innovations in signal processing, enabling first-to-market product features

2009-2014 Software Developer, Mark of the Unicorn, Cambridge, Massachusetts

- Created and expanded tools for musicians on Mac and Windows using C++
- Led development on browser-based mixing board control app for audio interface hardware

2008 Software Intern, Line 6, Calabasas, California

- Contributed subsystems written in C for a portable sound recorder for guitarists

Education

2009 B.S. in Computer Science, California Institute of Technology, Pasadena, CA. GPA 4.0

Patents and Selected Publications and Presentations

- US Patent 10,972,065 [Systems and Methods for identifying and remediating sound masking](#)
- US Patent 10,635,389 [Systems and methods for automatically generating enhanced audio output](#)
- [A Practical Perspective on Deep Learning in Audio Software](#) Audio Developer Conference 2019
- eDAFX 2020 [K.J. Werner and R. McClellan, Moog Ladder Filter Generalizations Based on State Variable Filters](#)
- [Developing Inter-plugin Communication at iZotope](#)
- [Engineering a Career Outside of Management](#) - an interview on navigating career growth as an individual contributor
- [Lo-Fi, a hip-hop story](#) - an interview with a collaborator about the creation of a new signal processing feature

Classes And Certificates

- [Certified Scrum Product Owner](#) (Issued 2021)
- Test-Driven-Development Training from [Rob Myers](#) (2014)
- Audio Signal Processing for Music applications - Coursera
- Statistical Mechanics: Algorithms and Computations - Coursera
- Principles of Reactive Programming - Coursera (With Distinction)
- Machine Learning - ml-class.org (100%)

More information

Please refer to the [extended online version](#) of this resume for further information, including discussion of selected open source and commercial projects.