MATTHEW FREDRICK

SOFTWARE ENGINEER

mattcfredrick@gmail.com

617-596-2190

6 Perham St.
Chelmsford, MA 01824

linkedin.com/in/mattcfredrick

github.com/mcfredrick

SKILLS

C++ | Visual Studio | Xcode | Audio | MIDI | VST / AU | JUCE | GIT | Jira | DSP | Cross-platform Dev. | UI / UX | Python | Agile | DAWs | Web APIs | OOP | JSON | JavaScript | Web3

OBJECTIVE

I am excited to leverage my audio software engineering experience to tackle new challenges. I'd like to bring my expertise in music technology and product development to a team of innovators leading the industry. I'm happiest when I'm learning and I'm always striving for personal and professional growth.

EDUCATION

Bachelor of Science - 2013
Mechanical Engineering
WORCESTER POLYTECHNIC INSTITUTE

- Programming for DSP, iterative design calculation, and data analysis
- MATLAB/Octave, Java
- Technical writing
- Architectural acoustics

Specialist Certificate - 2019
Creating Audio Plugins with JUCE & C++
KADENZE

- Project-based course in advanced audio plugin development.
- Built a Chorus / Delay plugin.
- The source code is available here:
github.com/mcfredrick/TimeMachineDelay

PROJECTS

PIANO ROLL MIDI EDITOR

BandLab

- Collaborated with designer, project manager, QA and development team to specify and deliver an elevated UX in a richly-featured creative tool
- Implemented GUI and performance-optimized data model for creating and editing MIDI performances using a piano roll view.
- Wrote code for buffering MIDI from data model for streaming in our multi-threaded audio engine
- Wrote code to persist user-created MIDI sequences with relevant event data
- Implemented an accompanying multi-touch compatible on-screen MIDI keyboard with QWERTY to MIDI functionality

AUDIO PLUGIN BROWSER

BandLab

- Collaborated with development team to devise and implement data structures and logic for performant search, categorization, and retrieval of audio plugins meeting dynamic user criteria
- Implemented GUI and full feature set for a flexible, reusable plugin browser
- Refined browser UX with feedback from QA, beta testers, and dev. team peers

EXPERIENCE

June 2019 - Present
SOFTWARE ENGINEERING CONSULTANT

DayJobDevelopment LLC

- Realizing each client's vision by identifying the most impactful features for their audience, curating the right suite of technologies, and providing software development expertise to ultimately deliver clean, maintainable code
- Providing software development services to diverse clients across the audio and music tech industry.
- Constantly expanding my working knowledge of the most up-to-date technologies for bringing software products to market.
- **Skills Utilized:** Project Management, C++, Git, Visual Studio, Xcode, JUCE, MIDI, VST/AU, Audio, Jira, UI / UX, OOP, STL, JSON, JavaScript, Web3 features

Nov. 2019 - April 2022
SOFTWARE ENGINEER

BandLab

- Crafting innovative audio software in C++ to fulfill our mission to bring fantastic music-creation tools to a global audience
- Leverage skills in Visual Studio, Xcode, C++ STL, Git, and the JUCE UI framework to create clean, efficient, maintainable and reliable cross-platform applications
- Utilize audio plug-in SDKs (VST / AU) from both the host and plug-in sides striving for flawless integration of third-party software

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SKILLS

C++ · Visual Studio · Xcode · Audio · MIDI · VST / AU · JUCE · GIT · Jira · DSP · Cross-platform Dev. · UI / UX · Python · Agile · DAWs · Web APIs · OOP · JSON · Confluence · Tech. Writing

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EXPERIENCE

BandLab

- Bringing my passion for UI / UX to the implementation of elegant, reusable solutions in our growing GUI library which is shared across our desktop apps
- Contributed MIDI rendering, editing, and storage capability to our multi-threaded engine
- Designed, implemented, refactored and debugged code with diverse applications including GUI elements, DSP, user data persistence, and cloud integration
- Led Apple Silicon support efforts for desktop development porting Intel intrinsics to ARM alternatives for ARM Mac builds
- **Skills Utilized:** C++, Git, Visual Studio, Xcode, JUCE, MIDI, VST/AU, Audio, Jira, UI / UX, OOP, STL, JSON

Aug. 2018 - July 2019
PROJECT MANAGER

Dave A. Mangano Fine Carpentry

- Fostered excellent client and colleague relationships in a leadership role on a team of professionals with diverse disciplines and skills
- Delivered high-quality construction solutions within a competitive budget
- **Skills Utilized:** QA, project management, prioritizing, client relations, budgeting, teamwork, leadership, advocacy

Feb. 2018 - July 2018 (Contract)
DRAFTING & AUTOMATION SPECIALIST

Ipswich Bay Glass

- Reduced time to production by automating drafting and BIM workflows in Autodesk Inventor
- Created custom software and Inventor plug-in solutions for 3D CAD / CAM and project data handling to increase our competitive edge
- **Skills Utilized:** Autodesk Inventor API, VB.NET, VBA, Excel, iLogic, Vault version control, AutoCAD

Oct. 2017 - January 2018
DESIGN ENGINEER

SARC Global Inc.

- Maximized profitability and design effectiveness using data analysis, cost-projections, and new manufacturing techniques.
- Introduced additive manufacturing techniques and CAD model analysis for new design testing
- Produced prototypes, computer models, and multimedia assets for R&D projects
- **Skills Utilized:** Product design, Solidworks modeling, 3D printing, technical writing, QA, manufacturing cost analysis