Matthew Fredrick

Software Developer

620 Washington St.
Gloucester, MA 01930

617-596-2190

mattcfredrick@gmail.com
github.com/mcfredrick
dayjobdev.com
linkedin.com/in/mattcfredrick

OBJECTIVE

I am looking to leverage the skills and experience from my engineering career to tackle new challenges in software development. I'd like to bring my knowledge of technology and product development to a team of innovators. I'm happiest when I'm learning and I'm always looking for the best way forward.

EDUCATION

BS Mechanical Engineering (GPA 3.58)   Worcester Polytechnic Institute   Grad: 2013

Relevant Coursework: MATLAB/Octave algorithm development and programming for signal processing and design calculations, Java, engineering testing using signal analysis from sensors, CAD, architectural acoustics

Specialist Certificate Creating Audio Plugins with JUCE and C++   Kadenze   Awarded: 2019

Description: Project-based course of study in advanced audio plugin development. I built a Chorus/Delay effect plugin which is currently open-source and available on GitHub. A full release version is in the works as part of a larger collection

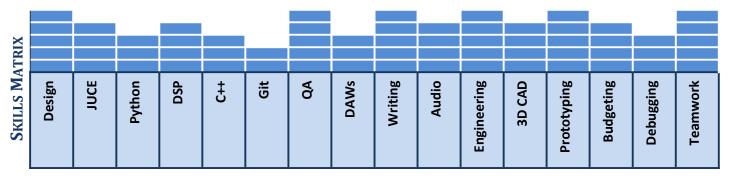## PROJECTS

Augmented Reality Device :

- Bringing computer vision, MIDI, and audio synthesis together in a mobile augmented reality device
- Leading technical and engineering operations for new product development

Utilized: JUCE, OpenCV, C++, Visual Studio, Git, audio synthesis, DSP, hardware prototyping

Audio Delay Plugin (VST/AU/AAX) : github.com/mcfredrick/TimeMachineDelay

- Built a cross-platform DSP app on a modular and reusable collection of C++ source files
- Plugin integrates with all major DAWs and parameters are accessible for host automation
- Implements efficient DSP algorithms for delay, LFO-modulated chorus, and gain control
- Includes a preset management system allowing storage of user parameter presets
- Provided a clean, attractive UI with intuitive controls

Utilized: C++, JUCE, Visual Studio, Git, InVision Studio, digital signal processing, Ableton, Cakewalk, DAWs

SKILLS MATRIX: Design, JUCE, Python, DSP, C++, Git, QA, DAWs, Writing, Audio, Engineering, 3D CAD, Prototyping, Budgeting, Debugging, Teamwork

EXPERIENCE

Founder / Developer   DayJobDevelopment and dIOtonic   06/2019 - present

Breaking new ground on a project bringing computer vision, MIDI and audio synthesis together in an augmented reality device. Also developing a suite of tools to bolster productivity and creativity in audio production while building reusable source and templates to streamline development.

Skills Utilized: C++, JUCE, OpenCV, Visual Studio, Git, Python, InVision Studio, DSP, DAWs, MIDI

Project Manager   Dave A. Mangano Fine Carpentry   08/18 - 07/19

Exceeded expectations by delivering high-quality solutions within a tight budget and schedule. Fostered excellent relationships with clients, design professionals, contractors, and colleagues.

Skills Utilized: QA, project management, budgeting, teamwork, leadership, advocacy

Inventor Drafting and Automation Specialist   Ipswich Bay Glass   02/18-07/18 (contract)

Reduced time to production by automating drafting work flow and data handling in Autodesk Inventor. Gave IBG an edge on competitors with custom software solutions moving drafting to cutting edge 3D CAD and CAM technologies.

Skills Utilized: C++, VBA, Excel, iLogic, Vault (version control), Autodesk Inventor, Inventor API, AutoCAD

Design Engineer   SARC Global Inc.   10/17-01/18

Maximized profitability and design effectiveness using data analysis, cost-tracking, and new manufacturing techniques. Owned R&D projects from conception to production. Leveraged prototypes, computer models, and multimedia assets to boost investor engagement. Maintained a high standard for documentation, version control, and overall quality of work.Produced 3D models and prototypes using Solidworks and 3D printing.

Skills Utilized: Solidworks, DFM, GD&T, QA, 3D printing, version control, product development, cost analysis, design analysis, technical writing

Chief Marine Engineer   World Ocean School   08/16-06/17

Completed an international educational voyage as engineering crew on a national historic landmark pilot schooner, Roseway. Oversaw mission critical systems in compliance with USCG, FCC and TSA regulations. Provided water, power, and amenities for 37 crew and students through self-sufficient shipboard systems with limited resources.

Skills Utilized: electrical/mechanical troubleshooting, marine systems engineering, resource management, failure mode prediction, critical component inventory, materials sourcing, design workarounds, teamwork, management, advocacy

Solutions and Documentation Engineer   Vacuum Technologies Inc. (VTI)   09/14-09/15

Reduced customer service reliance and boosted sales through new product documentation standards, innovative hardware, software design solutions and excellent client relations. Quickly mastered technology and provided remote and in-person technical training and troubleshooting. Set a new standard for documentation quality and delivered high-value customized solutions to researchers in private and government laboratories.

Skills Utilized: PLC programming, controls integration, electro-mechanical design, Solidworks, technical writing, customer support, troubleshooting