Matthew Fredrick

Software Developer

620 Washington St.
Gloucester, MA 01930

617-596-2190

mattcfredrick@gmail.com
github.com/mcfredrick
mcfredrick.github.io
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 would like to continue to build on a solid knowledge base in a field that pushes me to learn and innovate. I'm particularly interested in expanding my knowledge of object-oriented programming and digital signal processing through developing innovative software applications.

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

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

Description: Project-based course of study in advanced audio plugin development. I created a Chorus/Delay effect plugin which I host and maintain as a GitHub repository.

PROJECTS

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

- Developed a plugin using C++ and the JUCE framework to apply delay/chorus effects to audio
- Plugin integrates with digital audio workstations and parameters are accessible for automation
- Utilized DSP algorithms for delay, LFO-modulated chorus, and gain control in reusable class structure
- Implemented 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

Android Synthesizer App : github.com/mcfredrick/PocketSynth

- Created a polyphonic synthesizer using Java, Android NDK, AAudio API, and C++
- Two octave piano keyboard UI controls the synth module and provides visual feedback while playing

Utilized: Java, Android Studio, Android NDK, AAudio API, C++, Git, synthesis algorithms, music theory

SKILLS

C++	Python	OOP	Git	MATLAB	DSP	JUCE	Java

EXPERIENCE

Project Manager   **Dave A. Mangano Fine Carpentry**   **2018-2019**

Fostered excellent relationships with clients, design professionals, contractors, and colleagues. Provided high-quality solutions and material selections within a tight budget and deadline.

Inventor Drafting and Automation Specialist   Ipswich Bay Glass   2018 (6 mo. contract)

Pioneered programs and developed algorithms to reduce time to production by automating drafting work flow in Autodesk Inventor. Worked with a team to migrate drafting from AutoCAD to 3D CAD technology ahead of competitors. Implemented custom solutions using Inventor API, iLogic, C++, VBA, and Excel.

Design Engineer   SARC Global Inc.   2017-2018

Managed R&D projects from conception to production process. Used data analysis, cost-tracking, and documentation to maximize profitability and effectiveness of designs. Produced 3D models and prototypes using Solidworks and 3D printing. Created the documentation for products and processes under development and maintained records of revisions and changes.

Chief Marine Engineer   World Ocean School   2016-2017

Oversaw the engineering systems aboard Schooner Roseway on an international educational voyage. In this role, I documented the shipboard mechanical and electrical systems, planned for expected modes of failure and maintenance needs, and sourced materials and information to prepare for operations where self-sufficiency was required and down-time of critical systems was unacceptable.

Solutions and Documentation Engineer   Vacuum Technologies Inc. (VTI)   2014-2015

Led technical operations for the organization's North American outpost. Worked with a team on PLC machine control GUI development. Debugged and improved control algorithms. Wrote and edited technical documentation including the North American product operation manual for a product line, engineering and troubleshooting guide to streamline service calls, and the North American web page for an international equipment manufacturer. Provided remote and on-site support and troubleshooting and technician training.

Founder   Fish City Cycles   2013-2016

Built a brand and ran a small business specializing in customized motorcycle service. Developed inventory control systems, optimized cost-efficiency, managed personnel and prided myself on high quality customer service and delivering work that exceeded expectations. Built relationships with clients and vendors and managed compliance with state and local laws. Held a state vehicle inspection license personally and at a station level.

Lead Carpenter   Rocky Neck Associates   2010-2016

Progressed from an apprenticeship to lead a crew of tradespeople in high-end construction and renovation projects. Upheld a high level of quality and maintained superb relationships with clients and contractors.