

Emma Azelborn

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Experience

DSP Engineering Intern

Goodhertz, Inc. : Summer 2016

- Research and develop class modeling absorption of sound in air
- Optimize IIR filter to model experimental dataset with MATLAB
- Measure and compare frequency response of new dsp to theory
- Develop pitch modulation plugin that expands upon existing code
- Implement versatile LFO for custom auto-panning
- Generate content for real-time visualizations of signal processing
- Extensive use of version control to develop products as a team

Instructional Aide: Intro to C++

University of Michigan : January 2016 - Present

- Teach students the fundamentals of object-oriented programming
- Answer student questions during weekly office hours
- Edit and support project specifications
- Hold review sessions for exam preparation

Studio Instructor & Audio Assistant

University of Michigan Digital Media Commons : May 2013 - Spring 2016

- Manage team of 6 student staff by scheduling hours and coordinating project assignments
- Teach training courses to introduce new users to the studios
- Record faculty projects and performances
- Create documentation of resources for users
- Troubleshoot and repair audio system problems

Eta Kappa Nu Events Officer

Fall 2015

- Organize End-of-Semester Banquet
- Coordinate Student/Faculty Mixer

Audio Engineering Society Webmaster

January 2014 - present

- Design and develop Wordpress child-theme for new website
- Create documentation of officer duties and resources

Education

University of Michigan

Computer Science Engineering BSE

Audio Engineering BS

GPA 3.772

2012-2017

(expected)

Awards

Dean's List

5 Terms

University Honors

5 Terms

Projects

Real-time Biquad Filter "Wah Pedal" Plugin

- Compute the difference equation for a biquad filter
- Implement the DSP for a real-time biquad filter using C++

Melody Star: Educational Toy for Relative Pitch

- Configure finite-state machine using Verilog and DE2-115 microprocessor
- Detect pitch with Assembly and a Fourier Transform module

Console Temperature Monitoring System

- Create 24/7 temperature monitoring system for API Vision console using Raspberry Pi and python
- Automatically shut off console when temperature is too high

Emanmi: Image Hosting Web Application

- Build backend with MySQL and Python Flask
- Maintain version control between 3 group members with Git

Path Finding Algorithms

- Find paths with stacks and queues
- Design test case suite which covers all edge cases
- Parse command-line arguments with getopt

Personal Website

- Develop website with Bootstrap, custom CSS, and JQuery

Electronic Performance

Reflection on Flag and Electronics

- Parse gyroscope and accelerometer data
- Generate timbre based on flag movements

Ages

- Sing in original electronic quintet in the 2015 Collage Concert

Coast

- Perform in a small ensemble with Ableton Push
- Design flexible live performance setup
- Improvise from a graphic score

Harmony // Chaos

- Design and implement user interface using Lua and Urmus
- Collaborate with engineering and music students

Skills

- C++, C, Git, Matlab, Assembly, Clojure, Python, Flask, Lua, HTML, CSS, JQuery, JavaScript, Wordpress, Bootstrap, MySQL
- Google Apps for Work, Adobe Creative Suite, Dante Network Audio
- Apple Logic Pro, Ableton Live, Celemony Melodyne, Audacity
- Voice, Piano, Flute, Ukelele, Recorder, Kazoo