Brady Boettcher

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Focus: Audio Signal Processing and Musical Mapping Design

EDUCATION

University of Wisconsin-Madison, Madison, WI *Bachelor's in Computer Engineering, December 2018* ● 3.71/4.0 Cumulative GPA

- 3.88/4.0 Core GPA
- Senior Capstone Project: Semi-Modular Synthesizer ● **IEEE UW-Madison Student Chapter President**

McGill University, Montreal, QC
Master's of Art in Music Technology, ***in progress*** ● Fall 2021 - *present*

- Supervisor: Dr. Marcelo Wanderley
- Focus: Digital Instrument Design

WORK EXPERIENCE

Moodelizer AB, Stockholm, SE
Audio Developer, February 2020 – *present*

- Developed the proprietary interactive music and dynamic playback framework
- Expanded a creation tool for production of the dynamic music format using C++
- Created multiple Android apps in Kotlin to interact with the dynamic music

Qualcomm, San Diego, CA
Audio DSP Software Engineer, January 2019 – February 2020

- Created audio signal processing modules for use in Qualcomm's DSP audio framework
- Developed low power audio solutions for use in smart speakers, automotive, and mobile platforms

Qualcomm, San Diego, CA
Software Engineering Intern, May 2018 – August 2018

- Developed features for a GPU packet visualization tool allowing the graphics teams to debug their drivers with ease ● Utilized modern C++ standards as well as Git and Gerrit for code reviews

Thalchemy Corp., Madison, WI
Undergraduate Intern, January 2018 - December 2018

- Write drivers for sensors to be used in a wearable device
- Write firmware for the wearable device, integrate drivers into device's state machine
- Create a BLE compatible Android application to interface with a wearable device

SKILLS

- **Programming Languages:** C, C++, C#, Python, MATLAB, Javascript, Android Java & Kotlin
- **Frameworks:** JUCE, Max/MSP, NodeJS, Tensorflow, NAudio, Maximilian, MongoDB

- **Embedded Systems:** Arduino, Raspberry Pi, STMicro & AmbiqMicro
- **Developer Tools**: Git, Gerrit, Perforce, AWS (DynamoDB, Elastic Beanstalk)
- **Other:** Unity3D, Ableton Live, Serato

PUBLICATIONS

R. Tredinnick, B. Boettcher, S. Smith, S. Solovy, and K. Ponto. Uni-CAVE: A Unity3D plugin for non-head mounted VR display systems. *IEEE Virtual Reality (VR)*, pp. 393–394, 2017.

PROJECTS

- **Dino Synth (Senior Design Project)**- A semi-modular hardware synth running a JUCE plugin that allows the user to custom map knobs to synth parameters
- **Red Bull Hack the Hits 2018**- A three tiered concentric jog wheel allowing for three turntables in the form factor of one jog wheel, uses a plugin made in JUCE to configure MIDI messages sent to the user's digital audio workstation
- **BEATle**- A standalone Euclidean rhythm generator created in JUCE
- **MIDI Controller**- A Teensy controlled MIDI controller with a jog wheel, slider and buttons created to scratch in Ableton Live
- **Music Sharing Android Application**- An Android app utilizing Spotify's Beta SDK and API with a complete backend on AWS that allows users to listen to music that others are listening to around them in real time. This was created for an independent study over the course of a semester.
- **Harmonigon (v1 and v2)**- A software version of a rearranged piano with key positions based on the harmonic table, v2 includes automating harmonic patterns and other features
- **UniCAVE-** A plugin for the Unity game engine allowing VR applications to be built for non-head mounted display systems

View more projects on *github.com/bboettcher3* or my portfolio at *bboettcher3.github.io*