Brady Boettcher

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Focus: Musical Interaction and Signal Mapping Design

EDUCATION

University of Wisconsin-Madison, Madison, WI, USA

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, Canada

Master's of Art in Music Technology, March 2023

- Supervisor: Dr. Marcelo Wanderley
- Focus: Digital Instrument and Signal Mapping Design
- Thesis: **Developing Maturity in DMIs and Mapping Tools**

WORK EXPERIENCE

Moodelizer AB, Stockholm, SE and remote

Audio Developer, February 2020 – September 2021, March 2023 – *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.

B. Boettcher, J. Malloch, J. Wang and M. Wanderley. Mapper4Live: Using Control Structures to Embed Complex Mapping Tools into Ableton Live. New Interfaces for Musical Expression (NIME) Conference, 2022.

B. Boettcher, J. Sullivan and M. Wanderley. Slapbox: Redesign of a Digital Musical Instrument Towards Reliable Long-Term Practice. New Interfaces for Musical Expression (NIME) Conference, 2022.

B. Boettcher, E. A. Meneses, C. Frisson, M. M. Wanderley, and J. Malloch. Addressing Barriers for Entry and Operation of a Distributed Signal Mapping Framework. New Interfaces for Musical Expression (NIME) Conference, 2023.

NOTABLE SOFTWARE PROJECTS

- **gRainbow**- A synthesizer that uses pitch detection to choose candidates for granular synthesis or sampling.

- **Harmonigon v2**- A simple harmonic table MIDI sequencer.

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