Brady Boettcher

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Focus: Audio Software Development

EDUCATION

University of Wisconsin-Madison, Madison, WI, USA	McGill University, Montreal, QC, Canada
Bachelor's in Computer Engineering, December 2018	*Master's of Art in Music Technology, March 2023*
• 3.71/4.0 Cumulative GPA • 3.88/4.0 Core GPA • Senior Capstone Project: Semi-Modular Synthesizer • **IEEE UW-Madison Student Chapter President**	• 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 – January 2024

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

Signal Mapping Intern, Montreal, Canada

MITACS Accelerate Intern, September 2022 - December 2022

- Integrated a complex signal mapping framework into immersive space tools to connect audiovisual systems in new ways using C, Python and Javascript
- Created a public installation at the Satosphere where participants can interact with the audio and visual elements

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 using C++
- 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

SKILLS

- **Programming Languages:** C++, C, Python, Kotlin, Java, C#, MATLAB, Javascript, Rust

- **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, TouchDesigner, Ableton Live, Bitwig, Serato

PUBLICATIONS

B. Boettcher. Developing Maturity in DMIs and Mapping Tools. M.A Thesis, Schulich School of Music. McGill Univ., Montreal, QC, 2023.

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.

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.

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.

NOTABLE SOFTWARE PROJECTS

- **gRainbow**- A free and open source synthesizer that uses pitch detection to choose candidates for granular synthesis or sampling. https://github.com/StrangeLoopsAudio/gRainbow

- **Standard Input M4L device**- A free and open source Max for Live device that exposes mouse and trackpad signals as mappable modulators in Ableton Live. https://github.com/StrangeLoopsAudio/StandardInput_M4L

- **Harmonigon v2**- A harmonic table MIDI sequencer. https://github.com/StrangeLoopsAudio/Harmonigon

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