

Madhav Ghei

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Education

Northwestern University, Evanston, IL **Aug 2019 (Expected)**

School of Communication

Master of Arts in Sound Arts and Industries

Northwestern University, Evanston, IL **Aug 2018**

Robert R. McCormick School of Engineering and Applied Science

Bachelor of Science in Computer Science, Minor in Music Technology

Work Experience

Summer Audio Engineering Intern, SONDE Publishing (Olivia Block), Chicago, IL **Jun 2019-Ongoing**

- Create an indoor “Bertoia Sonambient” instrument for Block using wind sensors, Arduino, and Max/MSP.
- Coach and co-conduct the ChiMOP Summer Youth Orchestra, for whom Block composed a score.
- Update and re-design Block’s website.

Ableton Live Workshop Leader, Northwestern University, Evanston, IL **May 16, 2019**

- Formulated a targeted lesson plan by gathering questions from attendees in advance.
- Trained, educated, and mentored attendees on selected concepts in production and post-production in Live.

Graduate Teaching Assistant, Northwestern University Evanston, IL **Apr-Jun 2019**

Class name: RTVF 376 - Digital Musical Instrument Design

- Provided additional instruction and one-on-one lessons with students as needed.
- Solidified understanding of Arduino microcontrollers and prototyping simple circuits with breadboards.
- Expanded Max/MSP skills by incorporating sensor serial data from Arduinos into complex patches.
- Worked with students to help them craft plans for prototyping and constructing their instruments.

Undergraduate Research Assistant, Interactive Audio Lab (Northwestern University), Evanston, IL **Jan-Sep 2018**

- Developed a UI for an audio search engine in HTML5/CSS/JavaScript which allows users to search a database of sounds using a vocal imitation of the desired sound as the query.
- Connected the web UI to a Python Flask backend that runs a deep learning-based similarity metric.
- Aided in data cleaning to increase accuracy of search engine results.
- Co-authored two research papers, published in DCASE conference proceedings.

Ford Motor Company, Business Continuity & Disaster Recovery (BC/DR) Intern, Dearborn, MI **Jun-Sep 2017**

- Planned, coordinated, and drove DR tests.
- Optimized DR test workflow by eliminating redundancies and automating steps of the process.
- Developed an online form to gather feedback and evaluate future Call-Tree Tools and BC tests.
- Created a metric tracker to automatically report results from future DR tests.
- Gained an understanding of Ford policies relating to BC/DR, and logistically, how multiple departments work together to perform testing.
- Created a dynamically updating performance metric tracker in Excel for easier reporting.

Coursework and Solo Projects

The Sir Ghei Project, (Music Production) **Sep 2014-Ongoing**

- Create musical compositions, some pieces sample other works (see Website).
- Produce in Ableton Live, mix in Pro Tools, and master in Adobe Audition or ProTools.

Sir Ghei EP, Northwestern University, Evanston, IL **Apr-Jun 2019**

- Composed a five-track EP of sound art and experimental electronic music.
- Presented the EP at Northwestern University for the MA in Sound Arts and Industries Symposium.

Partial Occluder, Arup Sound Lab, Chicago, IL **May 2019**

- Composed an experimental sound art piece, using VCV Rack and Ableton Live, then mixed into ambisonics in Reaper using IEM ambisonic plugin suite.
- Selected as one of five artists to present pieces at the Arup Sound Lab.

DJ Performance & Instruction, Northwestern University, Evanston, IL **2018**

- Performed a 20-minute DJ set for Dillo Day Battle of the DJs at Evanston Rocks.
- Offered basic mixing instruction (tempo-matching, key-matching, FX for song transitions) to several peers.

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SAI 501: *Introduction to Sound Production, Northwestern University*.....Sep-Dec 2018

- Learned the basics of signal flow, recording techniques, mixing and mastering within ProTools on an SSL AWS 948 analog mixing board in the Northwestern SoundStage.
- Recorded, mixed and mastered a song performed by a friend's folk band.
- Composed, mixed and mastered an original composition using MaxMSP and Max4Live in Ableton Live.

SAI 401: *Advanced Sound Production, Northwestern University*.....Jan-Mar 2019

- Learning the advanced features of the SSL AWS 948 console, such as onboard compression, using the board as a control surface for ProTools, and other ways to streamline workflow.
- Created an analogue mix on the SSL using onboard mix/record busses for monitoring/recording.
- Delving deeper into recording techniques.

EECS 397: *Digital Luthier, Northwestern University*.....Mar-Jun 2018

- Learned about fundamentals of instrument design and history of digital instruments.
- Built a digital instrument, the Musical Facemask, using Max MSP, Arduino board, and sensors embedded in a wrestling mask.

EECS 352: *Machine Perception of Music and Audio, Northwestern University*.....Jan-Mar 2017

- Learned about basics of signal processing, as well as mathematical foundations of sound.
- Implemented in code: Fourier Transform, convolution filters, similarity matrices, spectrograms, cepstrograms, beat and pitch-tracking algorithms, REPET source separation algorithm, audio fingerprinting and music recommendation systems in Python.

Production Credits

Sain Levrad - Insain [Unreleased], Evanston, IL.....Sep 2018-Ongoing

- Recording vocals for and co-producing two songs
- Mixing and mastering all songs

The Greenleaf Band - [Unreleased Album], Chicago, IL.....Sep-May 2018

- Recorded entire ensemble: vocals, guitar, violin, mandolin, cajon, and double bass.

Ryan Martin: The Incredible Six-Thousand Foot Ladder to Heaven.....Apr 2019

- Recorded entire ensemble: vocals, guitar, electric bass, piano, cello, and violin.

Skills

- **Instrumental:** Violin (classically trained), Ableton Push (self-taught), Guitar (self taught), Traktor (self-taught).
- **Software:**
 - **Music:** Ableton Live, Pro Tools, Max/MSP, Traktor Pro,
 - **Programming Languages:** Python, HTML, CSS, JavaScript, SQL, C++, C#, Java, Racket.
- **Spoken Languages:** English (native), German (B2 level), Hindi (colloquial/familial), Spanish (AP-level).

Publications

- Margolis, B., **Ghei, M.**, Pardo, B. (2018) "Applying Triplet Loss to Siamese-Style Networks for Audio Similarity". *DCASE 2018 Proceedings*. <https://bit.ly/2Wneo7U>.
- Kim, B., **Ghei, M.**, Pardo, B., Duan, Z. (2018) "Vocal Imitation Set: a dataset of vocally imitated sound events using the AudioSet ontology". *DCASE 2018 Proceedings*. <https://bit.ly/2RQTWh0>.