Aaron Karp

Education

2017-2019 **MA in Digital Musics**, *Dartmouth College*, Hanover, NH.

2013-2017 **BS in Music, Computer Science**, *Northwestern University*, Evanston, *3.57*.
CS Concentrations: *Interfaces* and *Artificial Intelligence*

Research

2017-ongoing *Digital Musics Master's Thesis, Dartmouth College*

professor Dr. Michael Casey

project *Audio Surveillance*: Creating an ontological definition for machine listening and audio surveillance, and extending these definitions into a real-time system to hide sounds from methods of mass audio surveillance using audio fingerprinting, speech reconstruction, and LSTMs. This system will be presented as a technical design and used in a sound art installation piece. Awarded Best Graduate Research Writing from Dartmouth College for a write-up of the project proposal.

2016-2017 *Interactive Audio Lab, Northwestern University*

professor Dr. Bryan Pardo

projects *Haptic Equalizer*: Created a physical system which allows users to create complex line graphs by touch. The system consists of a chain resting on a board and a camera pointed at the board. The camera reads the scene as users manipulate the chain freely, thus allowing people with visual impairments to directly manipulate audio effects using industry-standard representations. For demonstration, this input was used to update an equalizer plugin in Ableton Live in realtime. A paper detailing HaptEQ was presented at the 2017 ACM Audio Mostly conference, where the talk was selected Runner-up for Best Presentation.

Experience

Vocational

2018-2019 **Teaching Assistant**, Dartmouth College.
Assisted professors in undergraduate courses including Global Sounds, Introduction to Sonic Arts, and Programming for Interactive Audio-Visual Arts.

2017 **Research Assistant**, *Learning Sciences Lab*, Northwestern University.
Exploring accessibility of 3D fabrication software by connecting a custom natural language understanding engine to Blender.

2015 **IT Consultant**, *School of Education and Social Policy*, Northwestern University.

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Volunteer

2015-2017 **AMPED**, *Mentor*, Northwestern University.
Taught music production and songwriting skills to 15-17-year-old residents at the Cook County Juvenile Temporary Detection Center. Over the course of 10 weeks, each resident gained the technical ability to articulate their thoughts musically and produce two original songs.

Awards

2018 **Best Graduate Research Writing**, Dartmouth College.
Awarded for a write-up of my thesis proposal.

2017 **Best Presentation**, *Runner Up*, Audio Mostly Conference.
Awarded for presentation of the HaptEQ system in London.

2016 **Summer Undergraduate Research Grant**, Northwestern University.
Awarded a research grant to pursue work on audio production interfaces for people with visual impairments.

2016 **Best Use of API**, *Wildhacks*, Northwestern University.
Awarded at a hackathon for JiffyPrint, a chrome extension which allowed users to easily print photos from the anywhere online and have them delivered within the hour.

Recent Works

2018 *with in* - installation for four speakers and projection
Installed at Black Family Visual Arts Center at Dartmouth College, 2018

2018 *Tare* - for String Quartet, 3 Sopranos, and Reel-to-Reel
Premiered by the Mivos Quartet at Dartmouth College in May 2018

2018 *Traces* - Sound Design for Animated Short Film
Premiered at the Digital Arts Exposition at Dartmouth College in June 2018

2018 *Introduction* - for Fixed Media
Premiered at the Digital Arts Exposition at Dartmouth College in June 2018
Played at the International Computer Music Conference in Daegu, South Korea in August 2018

2017 *Restrained Form* - installation of Wood, Metal Sheet, Rope, and Bass Shaker
Installed at Dartmouth College in December 2018

Publications

Aaron Karp and Bryan Pardo. Hapteq: A collaborative tool for visually impaired audio producers. In *Proceedings of the 12th International Audio Mostly Conference on Augmented and Participatory Sound and Music Experiences*, AM '17, pages 39:1–39:4, New York, NY, USA, 2017. ACM.

Robin N. Brewer, Mark Cartwright, Aaron Karp, Bryan Pardo, and Anne Marie Piper. An approach to audio-only editing for visually impaired seniors. In *Proceedings of the 18th International ACM SIGACCESS Conference on Computers and Accessibility*, ASSETS '16, pages 307–308, New York, NY, USA, 2016. ACM.

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