

## LLOYD MAY

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### EDUCATION

#### DARTMOUTH COLLEGE

HANOVER, NH

Masters of Arts (MA), Digital Musics, June 2020

Bachelor of Engineering (BE), Analytical Engineering (Honors), June 2018

Bachelor of Arts (BA), Engineering Science and Economics, June 2018

**GPA: 3.50**

Graduate Coursework Includes: Cognitive Musical Neuroscience, Deep Learning, Game Design, Musical Systems, Computer Music Composition, Advanced Synthesis & DSP, Writing with Algorithms

### PROJECT EXPERIENCE

#### PHANTASM

**April 2019 - Present**

*Lead Graduate Researcher, Cognitive Musical Neuroscience*

- Co-designed and conducted a series of experiments to decode imagined sound from fMRI data with Michael Casey and Andrea Halpern
- Implemented a behavioral evaluation task to ascertain the efficacy of decoding
- Conducted a series of interviews about the phenomenological experience of imagined sound

#### TEMPEST

**Sept. 2018 – Present**

*Project Manager, Acoustic Simulation*

- Lead a small team of programmers in designing and evaluating a ray tracing algorithm to rapidly simulate the sonic behavior of solid materials in *Rhino 3D*
- Evaluated the algorithm through a comparison of the simulated audio against a 48-channel recording of an exemplar physical scene

#### SYRINX

**June 2016 – May 2019**

*Product Design Engineer, Instrument Design*

- Co-designed, prototyped and mathematically modeled *Syrinx*, a novel acoustic synthesizer implementing controlled nonlinear acoustic synthesis
- Awarded a National Science Foundation Innovation CORPS grant

#### BLIKSEM

**June 2018 – May 2019**

*Lead Design Engineer, Instrument Design & Fabrication*

- Adapted nonlinear acoustic synthesis for application as a fuzz pedal effect
- Designed and fabricated a prototype pedal through iterative user testing

#### LODU

**Jan. 2019 – Present**

*Project Lead, Sound Art Game System*

- Created a novel, physical system for interactive exploration of the physical nature of sound
- Runner up for *Most Innovative Tabletop* at the Boston Festival of Indie Games (BFIG)
- Featured installation at the SHIFT Arts Festival 2019

### PUBLICATIONS

Mentch, J, **L. May**, M. A. Casey. (forthcoming). "Musical Harmony Reconstruction from fMRI of Perception of Rich Music Stimuli." *Nature Scientific Report*

**May, L.**, M. A. Casey. 16<sup>th</sup> Sept. 2019. "Familiar Feelings: Listener-rated Familiarity in Music Emotion Recognition." *12<sup>th</sup> Int. Workshop on Music & Machine Learning*, Würzburg, Germany

**May, L.**, S. Topel. 1<sup>st</sup> June 2019. "BLIKSEM: An Acoustic Synthesis Fuzz Pedal." *19<sup>th</sup> Symposium for New Interfaces for Musical Expression*, Porto Alegre, Brazil

**May, L.**, J. Hill. 2018. "Towards A Rapid Breath-Based Diagnostic for Pulmonary Tuberculosis in Pediatric Patients." *Analytical Engineering Honors Thesis, Thayer School of Engineering*

Chang, H, **L. May**, S. Topel. 15<sup>th</sup> May 2017. "Nonlinear Acoustic Synthesis in Augmented Musical Instruments." *17<sup>th</sup> Symposium for New Interfaces for Musical Expression*, Copenhagen, Denmark

## PRESENTATIONS

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**May, L.** "Jittered Grooves: Micro-timing Burial's *Archangel*." *Rhythm in Music Since 1900*, Boulder, Colorado, 22<sup>nd</sup> November 2019

**May, L., J. Hill,** "Potential Biomarkers of Tuberculosis in the Breath of Pediatric Patients." *Wetterhahn Honors Thesis Showcase*, Hanover, New Hampshire, 23<sup>rd</sup> May 2018

Sampedro, I, **L. May,** J. Hill, et al., "Pseudomonas aeruginosa chemotaxis in pathogenesis." *Karen E. Wetterhahn Science Symposium*, Hanover, New Hampshire, 26<sup>th</sup> May 2016

Sampedro, I, **L. May,** J. Hill, et al. "Chemoattraction in Pathogenesis: P. aeruginosa's response to hydroxylysine, a biomarker in lung injury." *Karen E. Wetterhahn Science Symposium*, Hanover, New Hampshire, 28<sup>th</sup> May 2015

## SELECT WORKS

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*Dust* | Fixed Media (c. 9') | 2019

Premiered at the *32<sup>nd</sup> Annual Meeting of the Society of Electro-Acoustic Music in the United States (SEAMUS)* in Boston, Mass. on the 22<sup>nd</sup> March 2019

*ZAAM* | Interactive sound art game | 2019

Featured at the *Boston Festival of Indie Games* on 14<sup>th</sup> September 2019 at Harvard University. Runner-up for *Most Innovative Tabletop Award*

*Piler* | Interactive sound art game | 2019

Activated performance by Sō Percussion in Hanover, New Hampshire on 28<sup>th</sup> April 2019 and a featured installation at the *SHIFT Arts Festival* in Hanover, New Hampshire on 21<sup>st</sup> June 2019.

*Hammerroid* | Punk Album (c. 22') | 2019

Produced, engineered & mixed *TCIYF's* album in Soweto, South Africa in July 2019

*Kanye In A Room* | Generative Lyric Book | 2019

500-page handbound & gilded book of recursively generated verses trained on *Kanye West* lyric

*Phantasm* (forthcoming) | For acoustic, imagined and fMRI decoded sound | May 2020

*Untitled #1* (forthcoming) | For sensors and electronics, with *Share Music Sweden* | June 2020

## TECHNICAL SKILLS & CERTIFICATIONS

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- fMRI operator certified
- Biohazard safety level 2 certified
- Python, R, Matlab, Solidworks, Rhino 3D
- Reaper, Ableton, Logic, Arduino, Max MSP, LARA,
- Fluent in English and Afrikaans

## AWARDS & GRANTS

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Alumni Research Award, *Guarini School of Advanced Studies at Dartmouth College* (2019)

Most Innovative Tabletop Game, Runner-Up, *Boston Festival of Indie Games* (2019)

CompX Grant, Graduate Researcher, *Neukom Institute for Computing* (2019)

Travel Grant, *Neukom Institute for Computing* (2018, 2019)

Innovation CORPS Grant, *National Science Foundation* (2018)

Eugene Roitman 1943 Memorial Award for Excellence in Music, *Dartmouth College* (2018)

Honors Thesis Grant, *Thayer School of Engineering* (2018)

Foreign Research Grant, *Dartmouth Undergraduate Research Center* (2017)

Science Scholar Research Award, *Dartmouth Undergraduate Research Center* (2015, 2016, 2017)

Desmond Davis & War Memorial Scholarship, *Desmond Davis Foundation* (2014-2018)

## **ADDITIONAL ACTIVITIES**

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**Bregman Studio**, Studio Manager & Engineer

**Sept 2018 – Present**

**Hill Lab**, Research Associate & Fabrication Engineer

**Jan 2015 – June 2018**

**Dartmouth Track and Field**, 3 time all-Ivy Medalist, Volunteer Coach

**Sept 2014 – Present**

**Dartmouth Residential Education**, Undergraduate Advisor & Resident Fellow

**Sept 2015 – Present**

**Tomorrow Trust** STEM Educator and Adviser

**June 2015 – Sept 2015**

**TEARS** Advocate for survivors of sexual assault in Johannesburg

**June 2015 – Sept 2015**