

**CURRICULUM VITAE**

**Paul Hembree, PhD** | music & interactive media  
 (541) 683-1779 | paulhembree.com | paul.j.hembree@outlook.com

With a background in classical and experimental music, in 2018 I joined the music technology industry in order to make sure that the voice of a composer was heard in rooms full of software engineers working on musical artificial intelligence. At all three companies that I have worked at, none have used “scrape and steal” datasets made of copyrighted material harvested without permission, and all have employed musical experts paid a living wage as part of a continuous creation process. The software that I’m interested in creating is not a replacement for humans, but instead aspires to the cybernetic ideal: a vital aesthetic feedback loop with technology that allows creators to express or discover things otherwise unattainable alone.

**PROFESSIONAL EXPERIENCE****BandLab Technologies – Music Procedural Generation Team**

Popular social media and digital audio workstation app for mobile devices and web, with 60 million worldwide users.

2025      Lead Software Engineer (June 2022 – March 2025)

Lead software engineer on procedural generation techniques for symbolic music (scores and MIDI) used internally at Bandlab. Designs software for a team of several composer-producers to accelerate and enhance their work in creating tracks for Bandlab users. The techniques used do not rely on scraping or stealing copyrighted or user data; all data used by the team is created by the team.

**Shutterstock, Inc. – Audio Machine Learning Team**

Global provider of stock photography, stock footage, stock music, and editing tools.

Acquired Amper Music in November 2020, including generative music technology and engineering personnel.

2022      Software Engineer I (Nov. 2020 – March 2022), Software Engineer II (March 2022 – June 2022)

Developer on music information retrieval and graph-based music taxonomy projects, including audio feature extraction, neural network design and unit tests for audio similarity embedding models. Helped develop a reverse audio search microservice on a wholly-owned catalogue of 34,000 tracks, allowing users without a background in music terminology to search with audio itself. Collaborated with music producers on taxonomy design, paying careful attention to non-Western contributions in the catalogue to avoid bias in ML models. Taxonomy includes more than 14,000 unique tags in more than 70 categories.

**Amper Music, Inc. – Artificial Intelligence Composition**

Former start-up founded by film composers and sound designers, offering a web-based AI composition tool allows non-musicians the capability of sculpting production-ready audio using simple inputs. Clients have included Mastercard, Universal Music Group, Tencent, LG, Adobe, The New York Times, National Public Radio, and Reuters.

2020      Lead Asset Developer (Nov. 2019 – Nov. 2020)

Principal software developer in the Creative department, focusing on creating internal tools in Lua that generate scripts responsible for musical decision making, and as such, works closely with the Engineering department. Used composition expertise to curate harmonic and rhythmic data assets for the artificial intelligence composer, with over 300 genre-mood combinations.

2019      Asset Developer (Aug. 2018 – Nov. 2019)

Software developer in the Creative department, focusing on Lua scripts responsible for musical decision making. Created a proof-of-concept in Wwise showing applicability of Amper-generated music to adaptive audio in video games. Continued to curate musical data assets.

2018      Asset Creator (May 2018 – Aug. 2018)

Used composition expertise to curate harmonic and rhythmic data assets for the artificial intelligence composer. Assisted with developing software in the Creative department.

**University of California, San Diego Music Department / Freelance**

Algorithmic composition software development, sound design, audio recording, editing, mixing, mastering and electronic music performance for Pulitzer prize-winning composer Roger Reynolds.

- 2023 Music Digital Signal Processing Consultant (2015-Present)  
Venues and presenters include the Park Avenue Armory, the Phillips Collection, and the Darmstadt New Music Summer Course, with collaborators including the JACK quartet and violinist Irvine Arditti. Funding provided by various music presenters and ensembles.
- 2015 Computer Music Research Assistant (2011-2015)  
Venues and presenters include the National Gallery of Art, Harvard and Columbia universities, with collaborators including Mark Dresser and Alarm Will Sound. Funding by the University of California.

**University of Colorado at Boulder College of Music, Pendulum New Music Series**

- 2009 Production Manager (2006-09)  
Stage management, advertising, graphic design, videography, web design, and administrative assistance for 24 new music concerts over 3 years.

**TEACHING EXPERIENCE**

---

**Western Michigan University Music Department – Lecturer**

- 2020 Fall Basic Music Theory II (Chromaticism)

**Bard College Music Department, Electronic Music Program – Part-Time Visiting Assistant Professor**

- 2018 Spring Interactive Performance and Composition with MAX/MSP/Jitter
- 2017 Fall Topics in Music Software: Video Game and Media Composition

**Skidmore College Documentary Studies / Media & Film Studies – Lecturer**

- 2018 Spring Photogrammetry and 360 Degree Audio/Video (John. B. Moore Documentary Film Studies Collaborative)
- 2017 Fall Interactive Media Programming in Unity (John. B. Moore Documentary Film Studies Collaborative)
- 2017 Spring Interactive Media Programming in Unity (John. B. Moore Documentary Film Studies Collaborative)
- 2017 Spring Video Games: History, Culture & Design (Media and Film Studies Department)

**University of California, San Diego Music Department – Instructor**

- 2015 Winter Video Game Music and Sound Design: History, Culture & Techniques
- 2014 Summer “Love, Death and Counterpoint:” Renaissance Music in Western Europe
- 2013 Spring Introduction to Composition – III, with Vocal, Guitar and Brass Instrumentation

**University of California, San Diego Music Department – Graduate Teaching Assistant**

- 2014 Winter Video Game Music and Sound Design: History, Culture & Techniques
- 2011 Winter Eighteenth Century Counterpoint
- 2010 Fall Sixteenth Century Counterpoint
- 2010 Summer American Music History
- 2010 Spring Basic Music Theory, Keyboard and Aural Skills – III
- 2009 Fall Basic Music Theory, Keyboard and Aural Skills – I

**University of Colorado at Boulder College of Music – Graduate Teaching Assistant**

- 2006-09 Fall/Spr. Introduction to Music Technology and Electronic Music

## EDUCATION

---

- 2015    **Ph. D. in Music, Composition program, supported by Computer Music**  
 University of California, San Diego (UCSD)  
 Committee: Roger Reynolds (chair), Mark Dresser, Miller Puckette, Amy Alexander, Samuel Buss  
 Composition Instructors: Roger Reynolds, Philippe Manoury, Lei Liang, Chinary Ung
- 2009    **M. Mus. in Composition, with an Emphasis in Technology**  
 University of Colorado at Boulder College of Music  
 Committee: Daniel Kellogg (chair), John Drumheller, Jeremy Smith  
 Composition Instructors: Daniel Kellogg, Carter Pann, Michael Theodore, John Drumheller
- 2005    **B. Mus. in Composition, *magna cum laude***  
 University of Oregon School of Music  
 Composition Instructors: Robert Kyr, David Crumb, Terry McQuilkin, Jeffrey Stolet

## SELECTED EVENTS AS SPEAKER

---

- 2023    “*Audible Geometry*: Using Coordinate Systems as a Resource for Music Generation”  
 Roguelike Celebration, remote conference hosted from San Francisco, CA (Oct. 22-23)
- 2021    “Algorithmic Music Projects in concert music and elsewhere” – Guest Lecture  
 Algorithmic & Computer Assisted Composition with Prof. Michelle Lou – U.C. Santa Cruz (May. 6)
- 2020    “*Audible Geometry*: System for Procedurally Generating and Remixing Audio & Music” – Guest Lecture  
 Composition Seminar with Prof. Fernanda Navarro – Arizona State Univ. (Nov. 9)
- 2019    “*Audible Geometry*: System for Procedurally Generating and Remixing Audio & Music” – Guest Lecture  
 Algorithmic & Computer Assisted Composition with Prof. Michelle Lou – U.C. Santa Cruz (Nov. 13)
- 2019    “*Audible Geometry*: System for Procedurally Remixing Audio Based on Geometric Representations of Pitch”  
 Game Sound Conference, Millennium Biltmore Hotel, Los Angeles, CA (Oct. 29)
- 2019    “Amper Music: How and Why an AI Music Composition Company is Hiring Composers”  
 ICMC: International Computer Music Conference – New York University (June 16)
- 2019    “Amper Music: A Phenomenological Approach to Curating AI Music Composition”  
 SEAMUS: Society for Electro-Acoustic Music in the U.S. Conference – Berklee College (Mar. 21)
- 2017    “*Audiovisual Alchemy*: A Synesthetic Experience in Virtual Reality”  
 Skidmore College Encore Series – Outreach Lectures (Nov. 7 & 9)
- 2017    “Learning and Performing Brian Ferneyhough's *Time and Motion Study No. 2*”  
 DUCKRUBBER (James Bean, T.J. Borden, Hembree), speaking at Recital Hour, U. Mass Lowell, (Mar. 23)
- 2016    “Audiovisual Alchemy”  
 Game Sound Conference, Millennium Biltmore Hotel, Los Angeles, CA (Sept. 28)
- 2016    “Apocryphal Chrysopoeia: Live, Procedurally Generated Audiovisual Media”  
 Univ. of Illinois, Composition Forum Guest Lecture (Mar. 1)
- 2016    “Apocryphal Chrysopoeia: Live, Procedurally Generated Audiovisual Media”  
 Illinois State Univ., Composition Seminar Guest Lecture (Feb. 2)
- 2014    “*Sounding Orbs*: A Generative audiovisual Instrument”  
 Music / Tech EXPO – Art Institute of California, San Diego, CA (May 10)
- 2014    “A Spatial Interpretation of Edgard Varèse's *Ionisation* in 4-channel diffusion”  
 SUNY: Univ. at Buffalo, NY (Apr. 9)

- 2014 “Electroacoustic and audiovisual Compositions, 2012-2014”  
Harvard Group for New Music, Cambridge, MA (Feb. 24)
- 2014 “On composing *Ikarus-Azur*” – Pacific Regent, La Jolla, CA (May 5)
- 2013 “Pre-concert talk with director Steven Schick and composer Paul Hembree”  
La Jolla Symphony and Chorus – Mandeville Auditorium, UCSD (Dec. 7-8)
- 2012 “The Uncanny in my Music”; Acanthes Academy @ IRCAM  
ManiFeste “Rendezvous for Emerging Creation” – Paris, France (June 20)
- 2010 “Spatial Projection in the Music of Edgard Varèse: Meaning, Origins, and Performance Practice”  
Varèse Symposium – Conrad Prebys Experimental Theater, UCSD (Dec. 8)

## RECORDINGS & PUBLICATIONS

---

- 2023 Roger Reynolds: For A Reason (Double Compact Disc Set)  
Music by Roger Reynolds, performed by Irvine Arditti, Pablo Gomez Cano, Liz Pearse, Steven Schick, and Paul Hembree. Neuma 128. Engineering by Paul Hembree, Jacob Sundstrom, and Tornike Karchkhadze.
- 2023 Lost Levels (Digital Release)  
Music by Paul Hembree, original soundtracks to the games *Goodnight Traffic City* and *Rite of Tephra*  
Self-published on Bandcamp: <https://paulhembree.bandcamp.com/album/lost-levels>
- 2023 8-Bit Roots Revival (Digital Release)  
Music by Paul Hembree, inspired by harmonic analyses of classic chiptunes  
Self-published on Bandcamp: <https://paulhembree.bandcamp.com/album/8-bit-roots-revival>
- 2022 Woolgatherer Original Soundtrack (Digital Release)  
Music by Paul Hembree, original soundtrack for the game *Woolgatherer*  
Self-published on Bandcamp: <https://paulhembree.bandcamp.com/album/woolgatherer-ost>
- 2019 Aspiration (Double Compact Disc Set)  
Music by Roger Reynolds, performed by Irvine Arditti, Paul Hembree, inauthentica, and Mark Menzies. Kairos 0015051KAI. Engineering by Paul Hembree, Josef Kucera and Nicolas Tipp.
- 2018 Sixfold Symmetry: Pattern in Art and Science: Teagle Grant Exhibition-Based Teaching Report (Edited Volume)  
Edited by Roe-Dale, Rachel, and Rachel Seligman. Features procedurally generated art by students in my course Video Games: History Culture & Design (Spring 2017)
- 2016 “Audiovisual Alchemy.” In *Proceedings of the first research track of GameSoundCon: The Art, Technology and Business of Game Audio*, Sept. 27-28, Millennium Biltmore Hotel, Los Angeles, CA: 9-16.  
<http://www.gamesoundcon.com/2016-game-audio-research>
- 2015 *Ouroboros and Apocryphal Chrysopoeia: Aesthetics and Techniques* (Dissertation)  
(Audiovisual Software Instrument, Large-Scale Composition, & Technical Manual)  
Published by the Univ. of California, San Diego
- 2015 *Four Real-Time Algorithms* (Technical Manual)  
with Roger Reynolds and Jaime E. Oliver La Rosa, co-authors  
Published by Edition Peters
- 2013 “A Spatial Interpretation of Edgard Varèse’s *Ionisation* using Binaural Audio”  
*Perspectives of New Music*, vol. 51, no. 1 (2013): 256-261. (Journal Article and Compact Disc)  
with Dustin Donahue, percussion
- 2011 *Sound Check No. 5* (Compact Disc)  
Released by UCSD Music Department, featuring *Passion* (2009)  
Curated by Philippe Manoury, mastered by Tom Erbe
- 2009 Invisible College Quartet: Codes & Cyphers (Compact Disc)  
Mystery Cabal MC2009-3. Paul Hembree, keyboard, Brandon Vaccaro, guitar, Chris Rippey, bass, Steven Snowden, horn

**COLLABORATIONS – SORTED BY MOST RECENT EVENT**

	<b><i>Sketchbook</i> (1985)</b>	<b>pianist/soprano, live audio media</b>	<b>30 min.</b>
	Collaboration with Roger Reynolds, composer, Liz Pearce, pianist/soprano.		
	Contributed fixed- or live-media vocal processing		
2024	Faculty Recital – Liz Pearce, sop./pno. – Winona State University, MN (Mar. 19)		
2023	Double Compact Disc Set, Neuma 128 (see Recordings & Publications)		
	<b><i>Rite of Tephra</i> (2017-20)</b>	<b>video game (Unity / C#)</b>	<b>software</b>
	By Platypus Games, a collaboration with William Hembree (artist & programmer)		
	Contributed procedural terrain generation programming, original score and interactive audio programming		
	Self-published on Itch.io: <a href="https://platypusgames.itch.io/rite-of-tephra">https://platypusgames.itch.io/rite-of-tephra</a>		
	Original soundtrack (orchestra):		<b>20 min.</b>
	I. Title, II. Exploration (procedurally remixed harmony with Audible Geometry)		
2023	“ <i>Audible Geometry</i> : Using Coordinate Systems as a Resource for Music Generation”		
	Roguelike Celebration, remote games conference hosted from San Francisco, CA (Oct. 22-23)		
2019	Audible Geometry (Procedurally Remixed Music System) presented at Game Sound Conference		
	Millennium Biltmore Hotel, Los Angeles, CA (Oct. 29)		
	<b><i>PERSISTENCE</i> (2019-2023)</b>	<b>cello, live audio media</b>	<b>30 min.</b>
	Collaboration with Roger Reynolds, composer, Alexis Decharmes, cello, Kyle Johnson, video artist, Jacob Sundstrom, computer musician.		
	Contributed audio editing, mixing & mastering for a digital video release.		
2023	Digital video release ( <a href="https://youtu.be/0pIl25lmwa4?si=4Rze4b6EdMmh2dZd">https://youtu.be/0pIl25lmwa4?si=4Rze4b6EdMmh2dZd</a> )		
	<b><i>Woolgatherer</i> (2020-22)</b>	<b>video game (Unity / C# / Wwise)</b>	<b>software</b>
	By Platypus Games, a collaboration with William Hembree (artist & programmer)		
	Contributed original score, sound design and interactive audio programming.		
2022	Original Soundtrack (orchestra, chorus & electronics):		<b>45 min.</b>
	I. Spring Day, II. Spring Night, III. Summer Day, IV. Summer Night, V. Autumn, VI. Winter Day, VII. Winter Night, VIII. Winter Solstice		
	<b><i>Posittings</i> (2012-13)</b>	<b>quintet, live audio media (Pure Data)</b>	<b>20 min.</b>
	Collaboration with Roger Reynolds, composer		
	Contributed interactive audio programming and performance.		
2021	Offbeat Festival – Ekkozone Ensemble (contributed fixed-media audio) – Copenhagen Distillery (Oct. 27)		
2018	June in Buffalo Festival and Conference – Ensemble Signal – SUNY: Univ. at Buffalo (June 9)		
2014	Miller Theatre Composer Portraits – Ensemble Signal – Columbia Univ., New York, NY (Feb. 22)		
2013	LA International New Music Festival – Southwest Chamber Music		
	Zipper Concert Hall, Los Angeles, CA (Mar. 2)		
	<b><i>Shifting/Drifting</i> (2015)</b>	<b>violin, live audio media (Pure Data)</b>	<b>23 min.</b>
	Collaboration with Roger Reynolds, composer, and violinist Irvine Arditti		
	Contributed interactive audio programming, performance & sound design, audio engineering on Kairos CD.		
2018	June in Buffalo Festival and Conference – SUNY: Univ. at Buffalo (June 7)		
2016	Darmstadt International Summer Course for New Music – Orangerie – Darmstadt, Germany (Aug. 4)		
2015	CCRMA Concerts – Stanford Univ., Palo Alto, CA (Oct. 5)		
2015	Wild Beast, CalArts, Valencia, CA (Sept. 30)		
2015	Art Power: Innovation Series – Conrad Prebys Experimental Theater, UCSD (Sept. 25)		

***Duo for Actual and Human Celli* (2017) cello, two amplified performers 12 min.**

Jenna Lyle, composer; commissioned by DUCKRUBBER (formerly The Heterodyne Trio)

- 2018 DUCKRUBBER – Center for New Music – San Francisco, CA (Jan. 16)
- 2018 DUCKRUBBER – Conrad Prebys Experimental Theater, UCSD (Jan. 9)
- 2017 DUCKRUBBER – The Waverly Project – New York Univ. (Mar. 31)
- 2017 DUCKRUBBER – Stony Brook Univ., NY (Mar. 29)
- 2017 DUCKRUBBER – Dept. of Electronic Music – Bard College, NY (Mar. 27)
- 2017 DUCKRUBBER – Univ. Mass Lowell, (Mar. 23)
- 2017 DUCKRUBBER – Hosted by David Forrest – The Factory, Cambridge, MA (Mar. 22)

***FLiGHT* (2013-16) string quartet, audiovisual media (Pure Data) 70 min.**

Collaboration with Roger Reynolds, composer, the JACK Quartet, video artist Ross Karre

Contributed interactive audio programming, performance & sound design.

- 2017 West Coast Premiere: UCSD Conrad Prebys Music Center (Nov. 30)
- 2016 Premiere: The Park Avenue Armory – New York City (Oct. 31)
- 2016 Preview: Univ. of Colorado at Boulder – ATL&S Black Box Theater (Oct. 3-10)
- 2016 Preview: UCSD Conrad Prebys Music Center (Aug. 25 – Sept. 3)
- 2016 Preview: The Philips Collection – Washington, DC (May 22)
- 2015 Preview: American Music Festival – National Gallery of Art, Washington, DC (Mar. 8)
- 2015 Preview: James Madison Univ. Contemporary Music Festival – Harrisonburg, VA (Feb. 19)

***Goodnight Traffic City* (2017) video game (Javascript / Tone.js) software**

Collaboration with Loren Schmidt, game developer & Kia Labeija, artist

Contributed original score, sound design and audio programming.

Original soundtrack (piano & electronics)

**15 min.**

- 2017 Day of the Devs, The Midway, San Francisco, CA (Nov. 11)
- 2017 Game Developer's Conference (Mild Rumpus orchard)  
Moscone Convention Center – San Francisco, CA (Feb. 27 – Mar. 3)
- 2016 La Mama Galleria (Visual AIDS Everyday Project) – New York, NY (Nov. 17 – Dec. 10)

***Sound Geometries* (2003) chamber ensemble, live audio media (MAX) 25 min.**

Collaboration with Pauline Oliveros, composer, and Zach Leyton, computer musician on 2016 performance.

Contributed interactive audio performance.

- 2017 WNYC New Sounds Live – Darmstadt Ensemble – Brookfield Place Winter Garden, NYC (Oct. 12)
- 2017 Remembering Pauline Oliveros – International Contemporary Ensemble – Park Avenue Armory, NYC (Feb. 6)
- 2016 Pauline Oliveros & the International Contemporary Ensemble  
Fisher Center LUMA Theater, Bard College (Sept. 17)

***his body falling into the repose of his organs* (2017) cello and live audio media (MAX) 10 min.**

Élise Roy, composer; commissioned by DUCKRUBBER (formerly The Heterodyne Trio)

- 2017 DUCKRUBBER – The Waverly Project – New York Univ. (Mar. 31)
- 2017 DUCKRUBBER – Stony Brook Univ., NY (Mar. 29)
- 2017 DUCKRUBBER – Dept. of Electronic Music – Bard College, NY (Mar. 27)
- 2017 DUCKRUBBER – Univ. Mass Lowell, (Mar. 23)
- 2017 DUCKRUBBER – Hosted by David Forrest – The Factory, Cambridge, MA (Mar. 22)

***Justice / Justice: Arias (2001/2016)*      soprano, percussion, live audio media (Pure Data)    50 / 25 min.**

Roger Reynolds, composer; Collaboration with Aurora Borealis Duo & Alice Teyssier

Contributed interactive audio programming & performance.

2017    *Arias*. A Musical Feast – Burchfield Penney Art Center (SUNY Buffalo State) (May 12)

2016    *Arias*. Baird Hall, Univ. at Buffalo (SUNY) (Mar. 24)

2012    *Complete Opera*. Conrad Prebys Experimental Theater, UCSD (Mar. 11)

***Time and Motion Study No. 2 (1973-76)*    cello, live audio media (MAX)      24 min.**

Brian Ferneyhough, composer

DUCKRUBBER (James Bean & Paul Hembree, electronics and T.J. Borden, cello) (formerly The Heterodyne Trio)

Contributed interactive audio programming and performance.

2017    DUCKRUBBER – The Waverly Project – New York Univ. (Mar. 31)

2017    DUCKRUBBER – Stony Brook Univ., NY (Mar. 29)

2017    DUCKRUBBER – Dept. of Electronic Music – Bard College, NY (Mar. 27)

2017    DUCKRUBBER – Univ. Mass Lowell, (Mar. 23)

2017    DUCKRUBBER – Hosted by David Forrest – The Factory, Cambridge, MA (Mar. 22)

2015    June in Buffalo Festival and Conference – SUNY: Univ. at Buffalo (June 7)

2015    Wednesdays @ 7; Palimpsest ensemble – Conrad Prebys Concert Hall, UCSD (Mar. 4)

***Passages 8, 9, 10 and 11 (2012-16)*      intermedia performance (MAX/Jitter)      75 min.**

Collaboration with Roger Reynolds, composer

Contributed interactive audiovisual programming, performance, sound design & moving images.

2016    No. 11: “Collaboration, Cage, Takemitsu, Xenakis, the Sublime, and Obligation”

with the Arditti String Quartet, preproduction support by Johannes Regnier

Darmstadt Int'l. Summer Course for New Music – Orangerie – Darmstadt, Germany (Aug. 3)

2014    No. 10: “Musings on “Good Lives”: Relationships, Sustenance, Aspirations, Truth, Secrets, Boundaries, Purpose, Flight”

The Making of the Modern World Public Lecture Series: The Good Life

Conrad Prebys Concert Hall, UCSD – La Jolla, CA (Mar. 3)

2013    No. 9: “Collaboration, Xenakis, Cage, Takemitsu, the Sublime, and Aesthetic Experience”

with Steven Schick, percussion, Rachel Beetz, flute

Michael Ricca, audio postproduction

Ross Karre, Kyle Johnson, and Frankie Martin, video postproduction

Conrad Prebys Concert Hall, UCSD – La Jolla, CA (Mar. 13)

2012    No. 8 “On Learning, Varèse, Cage, Ashley, Musical Experience, and Intermedia”

with John Pickford Richards, viola, Bill Kalinkos, clarinet

John Knowles Paine Concert Hall – Harvard Univ., Cambridge, MA – (Dec. 6)

***Dream Mirror (2010)*      guitar, live audio media (Pure Data)      22 min.**

Roger Reynolds, composer

Contributed interactive audio performance during the recording.

2014    Audiovisual documentary project “For a Reason” – Pablo Gomez Cano, guitar, Kyle Johnson, videography  
CallIt2 (Nov. 16-18)

<b><i>A Mind of Winter</i> (2009-10)</b>	<b>trio, live audio media (Pure Data)</b>	<b>16 min.</b>
Roger Reynolds, composer		
Contributed interactive audio performance.		
2016	Callithumpian Consort – Jordan Hall, New England Conservatory (Feb. 18)	
2015	Callithumpian Consort – Conrad Prebys Concert Hall, UCSD (Oct. 21)	
2014	Slee Sinfonietta – Lippes Concert Hall, SUNY: Univ. at Buffalo (Apr. 8)	
<b><i>Kokoro</i> (1992/2013)</b>	<b>violin, live audio media (Pure Data)</b>	<b>24 min.</b>
Collaboration with Roger Reynolds, composer, on new live spatialization		
Contributed interactive audio programming and performance.		
2015	Mark Menzies, violin – Wild Beast, CalArts, Valencia, CA (Apr. 5)	
<b><i>Jupiter</i> (1987)</b>	<b>flute, live audio media (Pure Data)</b>	<b>30 min.</b>
Philippe Manoury, composer -- Contributed interactive audio performance		
Ccollaboration with Kyle Johnson and Yeung-Ping Chen on curation.		
2014	{Sound Initiatives}: Three Flutes (co-curator)	
	Michael Matsuno, flute – Conrad Prebys Experimental Theatre, UCSD (June 2)	
<b><i>MARKed MUSIC</i> (2010-14)</b>	<b>contrabass, live audiovisual media (Pure Data, JackTrip)</b>	<b>20 min.</b>
Collaboration with Roger Reynolds, composer and Mark Dresser, bass, on 2013-14 revisions		
Contributed interactive audio performance & telematic audio.		
2014	Telematic Concert between UCSD & NYU – M. Dresser, bass, J. Oliver, computer (Feb. 11)	
2013	Telematic Concerts between UCSD & UC Irvine – M. Dresser, bass (Feb. 14/21)	
<b><i>Submerged Memories</i> (2012)</b>	<b>narrator, ensemble, media (Final Cut, MAX/Jitter)</b>	<b>25 min.</b>
Collaboration with Roger Reynolds, composer		
Contributed interactive audiovisual programming & performance.		
2013	UCSD grad. student musicians – Qualcomm Institute VROOM, UCSD (Apr. 20)	
<b><i>Toward Another World</i> (2011)</b>	<b>clarinet, live audio media (Pure Data)</b>	<b>12 min.</b>
Roger Reynolds, composer; Contributed interactive audio performance.		
2012	Fromm Foundation Visiting Prof. Portrait Concert	
	Bill Kalinkos, clarinet – Paine Concert Hall, Harvard Univ., Cambridge, MA (Dec. 6)	
<b><i>Laconisme de l'aile</i> (1982)</b>	<b>flute, live audio media (Pure Data)</b>	<b>8 min.</b>
Kaija Saariaho, composer; Contributed interactive audio programming & performance to UCSD production.		
2012	Rachel Beetz, flute – Conrad Prebys Concert Hall, UCSD (May 8)	
<b><i>Ping</i> (1968/2011)</b>	<b>small ensemble, live audiovisual media (Pure Data)</b>	<b>24 min.</b>
Roger Reynolds, composer		
Contributed restoration of materials, interactive audio programming & performance.		
2011	Rachel Beetz, fl., Ross Karre, perc., Roger Reynolds, piano	
	Conrad Prebys Experimental Theater, UCSD (May 27)	



**WORKS – sorted by most recent event**

<b><i>Grapple</i> (2011)</b>		<b>drum kit, glockenspiel, live digital audio media</b>	<b>6 min.</b>
2024	Thursdays at Noon – Dustin Donahue, perc. – Walter Hall, University of Toronto (Nov. 21)		
2024	Percussive Arts Society International Convention – Dustin Donahue, perc. – Indiana Convention Center (Nov. 14)		
2016	Dustin Donahue, perc. – University of Washington (Mar. 3)		
2011	Dustin Donahue, perc. – Conrad Prebys Experimental Theater, UCSD (Oct. 24)		
<b><i>Flieg, Kindlein, Flieg</i> (2016)</b>		<b>SSAA chorus, piano</b>	<b>5 min.</b>
2019	Sing About It: 21 <sup>st</sup> Century Song – Amasong: Champaign-Urbana's Premiere Lesbian/Feminist Chorus McKinley Prebyterian Church, Champaign, IL (Jan. 26-27)		
2016	Flight: Songs of Migration – Amasong: Champaign-Urbana's Premiere Lesbian/Feminist Chorus McKinley Prebyterian Church, Champaign, IL (Apr. 9-10)		
<b><i>Anneal</i> (2018)</b>		<b>horn, trumpet, trombone</b>	<b>7 min.</b>
2018	Second Sunday Concert Series – Boston Modern Brass – Jason Huffman, tpt., Emily Wiebe, hn., C. Neil Parsons, btbn. – Boston Sculptors Gallery (Apr. 8)		
<b><i>19-Tone Color Wheel</i> (2018) any instrument(s), live audiovisual media (MAX/Jitter)</b>			<b>10 min.</b>
2018	Adam Tinkle and Paul Hembree – Lunchtime Concerts – Bard College, NY (Mar. 15)		
2018	Adam Tinkle and Paul Hembree – Super Dark Mondays – One Caroline, Saratoga Springs, NY (Mar. 3)		
2018	Adam Tinkle and Paul Hembree – GZ Basement, RPI Experimental Music Media Club Rensselaer Polytechnic Institute, Troy, NY (Feb. 24)		
<b><i>JALEXOWNS</i> (2018) saxophone, trumpet, live audiovisual media (MAX/Jitter)</b>			<b>10 min.</b>
2018	Adam Tinkle and Paul Hembree – Lunchtime Concerts – Bard College, NY (Mar. 15)		
2018	Adam Tinkle and Paul Hembree – Super Dark Mondays – One Caroline, Saratoga Springs, NY (Mar. 3)		
2018	Adam Tinkle and Paul Hembree – GZ Basement, RPI Experimental Music Media Club Rensselaer Polytechnic Institute, Troy, NY (Feb. 24)		
<b><i>Triple Crown</i> (2018)</b>		<b>improvised live audio media (MAX)</b>	<b>45 min.</b>
2018	DUCKRUBBER – Center for New Music – San Francisco, CA (Jan. 16)		
2018	DUCKRUBBER – Conrad Prebys Experimental Theater, UCSD (Jan. 9)		
<b><i>Pulmonary Hyphomycosis</i> (2017)</b>		<b>trumpet, live audiovisual media (MAX/Jitter)</b>	<b>8 min.</b>
2017	Sam Wells and Paul Hembree – Dept. of Electronic Music – Bard College, NY (Nov. 16)		
2017	Neue Forum 5: Sam Wells & Paul Hembree – ShapeShifter Lab, Brooklyn, NY (Feb. 13)		
<b><i>Audiovisual Alchemy</i> (2016-17) live audiovisual media/virtual reality (Unity/C#/Pure Data) software</b>			
2017	Sam Wells and Paul Hembree – Dept. of Electronic Music – Bard College, NY (Nov. 16)		
2017	Mise-En Place Bushwick Open Studios – Brooklyn, NY (Sept. 23)		
2016	Preview: Game Sound Con – Millennium Biltmore Hotel – Los Angeles, CA (Sep. 27-28)		

***Cerebral Hyphomycosis* (2016) 'cello, live audiovisual media (MAX/Jitter) 7 min.**

- 2017 DUCKRUBBER – The Waverly Project – New York Univ. (Mar. 31)
- 2017 DUCKRUBBER – Stony Brook Univ., NY (Mar. 29)
- 2017 DUCKRUBBER – Dept. of Electronic Music – Bard College, NY (Mar. 27)
- 2017 DUCKRUBBER – Univ. Mass Lowell, (Mar. 23)
- 2017 DUCKRUBBER – Hosted by David Forrest – The Factory, Cambridge, MA (Mar. 22)
- 2016 Tyler J. Borden, cello + Paul Hembree, electronics – Darmstadt International Summer Course for New Music  
Lichtenbergschule Open Space – Germany (Aug. 5)
- 2016 Tyler J. Borden DMA Recital – Conrad Prebys Experimental Theater, UCSD (Apr. 6)

***Harsh Noise Improv.* (2015) any instrument, live audio media (Pure Data) 10 min.**

- 2017 Sam Wells and Paul Hembree – Dept. of Electronic Music – Bard College, NY (Nov. 16)
- 2017 Neue Forum 5: Sam Wells, trumpet & Paul Hembree, computer musician  
ShapeShifter Lab, Brooklyn, NY (Feb. 13)
- 2016 with Adam Tinkle, alto saxophone  
The Fifth International Pure Data Conference – Maxwell's Tavern, Hoboken, NJ (Nov. 16)
- 2015 with Drew Ceccato, tenor saxophone – Qualcomm Institute IDEAS: Initiative for Digital Exploration of Arts  
and Sciences -- Qualcomm Institute VROOM, UCSD (June 29)

***Apocryphal Chrysopoeia* (2015) live audiovisual media (MAX/Jitter) 10 min.**

- 2017 Neue Forum 5: Sam Wells, trumpet & Paul Hembree, computer musician  
ShapeShifter Lab, Brooklyn, NY (Feb. 13)
- 2016 New York City Electroacoustic Music Festival – National Sawdust (June 5)
- 2016 The Callithumpian Consort – Jordan Hall, New England Conservatory, Boston, MA (Feb. 18)
- 2015 Qualcomm Institute IDEAS: Initiative for Digital Exploration of Arts and Sciences  
Qualcomm Institute VROOM, UCSD (June 29)
- 2015 NIME: New Interfaces for Musical Expression Conference  
Louisiana State Univ., Baton Rouge, LA (May 31)
- 2015 SEAMUS: Society for Electro-Acoustic Music in the U.S. Conference  
Virginia Tech., Blacksburg, VA (Mar. 26)
- 2015 N\_SEME: National Student Electronic Music Event, Bowling Green State Univ., OH (Mar. 6)

***Blue Sky Catastrophe* (2010/13) trumpet 7 min.**

- 2017 Sam Wells and Paul Hembree – Dept. of Electronic Music – Bard College, NY (Nov. 16)
- 2017 Neue Forum 5: Sam Wells & Paul Hembree – ShapeShifter Lab, Brooklyn, NY (Feb. 13)
- 2016 Radical Brass, Vol. 4 – Sam Wells, trumpet – Spectrum, New York City (Jan. 3)
- 2015 June in Buffalo Festival and Conference – Sam Wells, trumpet – SUNY: Univ. at Buffalo (June 7)
- 2015 Sam Wells presents works for Trumpet and Electronics  
Sam Wells, trumpet – Conrad Prebys Experimental Theater, UCSD (Mar. 8)
- 2015 Northern Arizona Univ. Guest Artist Series  
Sam Wells, trumpet – Northern Arizona Univ., Flagstaff, AZ (Mar. 5)
- 2011 Written for and recorded by Peter Evans, as part of the International Contemporary Ensemble's 2011 CalIt2  
Residency – Studio A, UCSD (Jan. 18)

<b><i>Chemical Oscillator</i> (2011)</b>		<b>live audiovisual media (MAX/Jitter)</b>	<b>8 min.</b>
2017	Sam Wells and Paul Hembree – Dept. of Electronic Music – Bard College, NY (Nov. 16)		
2017	Neue Forum 5: Sam Wells, trumpet & Paul Hembree, computer musician ShapeShifter Lab, Brooklyn, NY (Feb. 13)		
2015	Qualcomm Institute IDEAS: Initiative for Digital Exploration of Arts and Sciences Qualcomm Institute VROOM, UCSD (June 29)		
2012	St. Louis Composers' Night – Tavern of Fine Arts, St. Louis, MO (Oct. 17)		
2011	California Electronic Music Exchange Concerts Littlefield Concert Hall Mills College, Oakland, CA (Apr. 24)		
2011	California Electronic Music Exchange Concerts Conrad Prebys Experimental Theater, UCSD (Apr. 22)		
2010	San Diego New Music Collective California Tour – Swarm Gallery, Oakland, CA (Aug. 8)		
<b><i>Light from Outside</i> (2012)</b>		<b>soprano, percussion, live audio media (Pure Data)</b>	<b>15 min.</b>
2017	Aurora Borealis Duo – XX New Music Miami ISCM Festival – Florida Int'l Univ. (Feb. 2)		
2016	Tiffany DuMouchelle Faculty Recital, Univ. at Buffalo (SUNY) (Mar. 24)		
2015	Bank of the West Music Series – Aurora Borealis Duo – Cheyenne Central High School (Apr. 7)		
2013	Aurora Borealis Duo – Conrad Prebys Concert Hall, UCSD (Apr. 8)		
2013	UCSD Gluck Outreach Concerts – Aurora Borealis Duo – Spring Valley Community Center (Mar. 22)		
2013	UCSD Gluck Outreach Concerts – Aurora Borealis Duo – Downtown Senior Center (Mar. 19)		
2013	UCSD Gluck Outreach Concerts – Aurora Borealis Duo – Bayside Community Center (Mar. 12)		
2012	UCSD Pierrot Project – Conrad Prebys Experimental Theatre, UCSD (Apr. 21)		
<b><i>Des Wahnsinns sanfte Flügel</i> (2015)</b>		<b>soprano and fixed audio media (Pure Data)</b>	<b>11 min.</b>
2015	Leslie Leytham: The Lonely Voice – Mengi Gallery, Reykjavik, Iceland (Nov. 20)		
<b><i>Ouroboros</i> (2014-15)</b>		<b>ensemble, live audiovisual media (MAX/Jitter)</b>	<b>18 min.</b>
2015	Hembree Dissertation Recital; UCSD graduate musicians, David Medine, conductor Conrad Prebys Experimental Theater, UCSD (May 17)		
<b><i>Nimbus</i> (2011)</b>		<b>chamber orchestra</b>	<b>8 min.</b>
2015	Exit 128 Chamber Orchestra – First Baptist Church, Columbia, MO (May 10)		
2013	Red Note Composition Competition finalist		
2011	ASCAP Morton Gould Awards finalist		
2011	Palimpsest (UCSD New Music Ensemble) – Conrad Prebys Concert Hall, UCSD (Nov. 16)		
<b><i>Sounding Orbs</i> (2014)</b>		<b>live audiovisual media (MAX/Jitter)</b>	<b>15 min.</b>
2014	California Electronic Music Exchange Concerts Littlefield Concert Hall, Mills College, Oakland, CA (Apr. 19)		
2014	UCSD Spring Festival, "Immersion: Soundtracks for Sea Life" Scripps Institute Birch Aquarium, La Jolla, CA (Apr. 13)		
<b><i>Ikarus-Azur</i> (2013)</b>		<b>SATB chorus and large orchestra</b>	<b>15 min.</b>
2013	La Jolla Symphony & Chorus (Thomas Nee Commission) – Mandeville Auditorium, UCSD (Dec. 7-8)		

<b><i>Werkstoffwissenschaft</i> (2013)</b>	<b>trio, fixed audio media (Pure Data)</b>	<b>7 min.</b>
2013	ensemble et cetera – Conrad Prebys Recital Hall, UCSD (May 18)	
<b><i>Lumière: Glacée et Réfractée</i> (2012)</b>	<b>chamber orchestra</b>	<b>8 min.</b>
2012	Acanthes Academy @ IRCAM: ManiFeste “Rendezvous for Emerging Creation” Ensemble Intercontemporain – Le Centquatre, Paris, France (June 28)	
<b><i>Eclipses</i> (2009/2012)</b>	<b>trumpet, fixed audiovisual media (MAX/Jitter)</b>	<b>8 min.</b>
	Collaboration with Stephen Dunn, trumpet	
2012	Creinconcert, Ronzo-Chienis, Italy (June 23-24)	
<b><i>Nosferatu</i> (2011/1922)</b>	<b>live film score (quartet, fixed audio media)</b>	<b>84 min.</b>
	Film score to F.W. Murnau's film, commissioned by UCSD German Studies Program	
2011	San Diego New Music Collective – Mandeville Auditorium, UCSD (Oct. 21)	
<b><i>Passion</i> (2009)</b>	<b>soprano, ensemble</b>	<b>12 min.</b>
2010	San Diego New Music Collective – Swarm Gallery, Oakland, CA (Aug. 8)	
2010	New Music Forum Festival of Contemporary Music (Aug. 7) San Diego New Music Collective – San Francisco Community Music Center, CA	
2010	First-Year Graduate Recital – Conrad Prebys Hall, UCSD (Jan. 22)	
<b><i>Antikythera Mechanism</i> (2008-09)</b>	<b>chamber orchestra, audiovisual media (MAX/Jitter)</b>	<b>35 min.</b>
2009	Hembree master's thesis recital – Univ. Colorado musicians, Boulder Laptop Orchestra ATL&S Black Box Theater, Boulder, CO (Apr. 11)	
2009	Pendulum New Music series: Alarm Will Sound Graduate Composer Readings Grusin Hall, Univ. of Colorado – Boulder, CO (Jan. 18)	
<b><i>Hénon Map</i> (2008)</b>	<b>laptop orchestra (MAX)</b>	<b>8 min.</b>
2009	Pendulum New Music series – Boulder Laptop Orchestra – ATL&S Black Box Theater, Boulder, CO (Mar. 18)	
2008	International Society of Improvised Music Conference – Boulder Laptop Orchestra Lamont School of Music, Denver, CO (Dec. 7)	
<b><i>Nyx &amp; Eris</i> (2007 – 2008)</b>	<b>chamber ensemble</b>	<b>12 min.</b>
	Edward Levy Commission, Univ. of Colorado at Boulder	
2009	Modern Miscellanea: The Playground Ensemble Hamilton Recital Hall, Newman Center – Denver, CO (Jan. 29)	
2008	Pendulum New Music series – Tasman String Quartet and Arundo Winds Grusin Hall, Univ. Colorado, Boulder, CO (Mar. 5)	
<b><i>Jökulhlaup</i> (2007)</b>	<b>piano</b>	<b>5 min.</b>
2009	Colorado Music Educators Conference – Heide Brende, piano – Colorado Springs, CO (Jan. 23)	
2008	New Keys Series; Kate Campbell, piano – Lisser Hall, Mills College, Oakland, CA (Nov. 15)	
2008	Colorado Composers Concert – The Playground Ensemble Heide Brende, piano – King Center, Metro. State College of Denver, CO (Apr. 25)	
2008	Michael Ippolito, piano – Temple Terrace Presbyterian Church, Tampa, FL (Jan. 6)	

- 2007 Guest Artist Recital – Michael Ippolito, piano  
Morphy Recital Hall, Univ. of Wisconsin – Madison, WI (Nov. 7)
- 2007 Michael Ippolito, piano – Redeemer Lutheran Church, Minneapolis, MN (Oct. 21)
- 2007 Oregon Bach Festival: Piano Reborn – Kate Campbell, piano  
Beall Hall, Univ. of Oregon, Eugene, OR (July 7)

***Meditation on a Spent .38 Shell* (2004-05) fixed audio media (Kyma) 7 min.**

- 2008 Electro-Acoustic Juke Joint – Delta Music Institute, Cleveland, MS (Nov. 15)
- 2005 Eugene Composers Collective – Downtown Initiative for Visual Arts, Eugene, OR (Winter)
- 2005 Future Music Oregon – School of Music, Univ. of Oregon, Eugene, OR (May 21)

***Model Bride* (2008) film score (fixed audio media)(Reason) 7 min.**

- 2008 48 Hour Film Festival, Denver Edition – Austin Heller, director (Team Glamorous Duplicity)  
Gothic Theater, Denver, CO (Aug. 26)

***Voltage Controlled Passacaglia* (2007) live audiovisual media (Moog synthesizer) 12 min.**

- 2007 New West Electronic Arts & Music Organization Festival  
ATL&S Black Box Theater – Boulder, CO (Oct. 13)
- 2007 Pendulum New Music series – ATL&S Black Box Theater, Boulder, CO (Feb. 28)

***Archaeopteryx* (2006 – 2007) sextet 9 min.**

- 2007 ASCAP Morton Gould Young Composers Awards finalist
- 2007 Pendulum New Music series – The Playground Ensemble  
Grusin Hall, Univ. of Colorado, Boulder, CO (Sept. 26)
- 2007 Modern Miscellanea – The Playground Ensemble  
Hamilton Recital Hall, Newman Center, Denver, CO (Sept. 18)
- 2007 MusicX Festival – Cincinnati College-Conservatory of Music musicians  
Cincinnati College-Conservatory of Music, Cincinnati, OH (June 15)
- 2007 Colorado Composers Concert – The Playground Ensemble – Bethany Lutheran Church, Denver, CO (May 25)
- 2007 Pendulum New Music series – eighth blackbird Graduate Composer Readings  
Grusin Hall, Univ. of Colorado, Boulder, CO (Feb. 5)

***Der Doppelgänger* (2007) contrabassoon and live audio media 6.5 min.**

- 2007 Aspen Underground – Helena Kopchick, contrabassoon, Paul Hembree, computer  
Aspen Community Church, Aspen CO (Jul. 30)

## **FREELANCE WORK**

- 2020 Freelance Arranger, Engraver, Audiovisual Technologist (2007-Present)  
Previous clients include: Ekkozone (Copenhagen), Darmstadt Ensemble (New York), Irvine Arditti (London), International Contemporary Ensemble (New York), the JACK Quartet (New York), the Callithumpian Consort (Boston, MA), Ensemble Signal (Rochester, NY), the Aurora Borealis Duo (Buffalo, NY), Cappella Orpheus (Champaign, IL), Amasong (Champaign, IL), violinist / Prof. Mark Menzies (CalArts), trumpeter / Prof. Edwin Harkins (UC San Diego), soprano Lucy Shelton (New York), flutist Matteo Cesari (Italy), composer Brian Griffeth-Loeb (San Diego, CA), saxophonist Eliot Gattegno (San Diego, CA), violinist Batya MacAdam-Somer (San Diego, CA), percussionist Bonnie Whiting (San Diego,

CA), guitarist Pablo Gómez (San Diego, CA), the Boulder Laptop Orchestra, pianist Hsing-ay Hsu (Boulder, CO). *Also see COLLABORATIONS for details on major creative projects.*

### **COMMISSIONS, SCHOLARSHIPS, GRANTS, AWARDS & HONORS**

---

2021	Shutterstock Hackathon First Prize Winner (Footage to Sound Effects cross-asset recommendation system prototype)
2017	Funded Teaching with Tang Museum <i>Sixfold Symmetry: Pattern in Art and Science</i> (portion of Teagle Grant)
2015	Music Department Competitive Travel Grant (UCSD)
2015	Graduate Student Association Competitive Travel Grant (UCSD)
2013	Red Note Competition, Chamber Orchestra Division Finalist
2013	La Jolla Symphony & Chorus Thomas Nee Commission Prize
2013	Music Department Competitive Travel Grant (UCSD)
2012	American Music Center (New Music USA) Composer's Assistance Program Grant
2012	ASCAP Morton Gould Student Composer Awards Finalist
2012	Music Department Competitive Travel Grant (UCSD)
2011	UCSD German Studies Program Commission for F.W. Murnau <i>Nosferatu</i> Film Score
2008	Center for Humanities and the Arts Eaton Grant (Univ. Colorado)
2008	ASCAP Morton Gould Student Composer Awards Finalist
2007	MusicX eighth blackbird Competition Finalist
2007	Edward Levy Commission Prize (Univ. Colorado)
2006	College of Music Dean's Small Grant (Univ. Colorado)
2005	Award for Outstanding Work in Composition (Undergraduate Division, Univ. Oregon)

### **SERVICE WORK**

---

2023	Roger Reynolds Trust – Personal Library Cataloguing & Composition Sketches / Scores Preservation (2016-present)
2015	Composition Focus (Colloquium) Organizing Committee – UCSD (2014-15)
2015	Judge: Undergraduate Composition Juries – UCSD (May)
2014	Co-curator: {Sound Initiatives} Electroacoustic Music Series “Vox Mea” – Conrad Prebys Experimental Theatre, UCSD (Mar. 15) “Three Flutes” – Conrad Prebys Experimental Theatre, UCSD (June 2)
2014	Curator: UCSD Spring Festival, “Immersion: Soundtracks for Sea Life” Scripps Institute Birch Aquarium, La Jolla, CA (Apr. 13)
2014	UCSD Spring Festival Videographer (2010-14)
2013	Judge: Undergraduate Composition Juries – UCSD (May)
2012	Judge: Young Composers Competition – Webster Univ. Community Music School (Oct.)
2012	Web Design Consultant: John Cage Centennial Festival – Washington, DC (Aug.)
2010	Board Member and Videographer: The Playground Ensemble, Denver Univ. (2008-10)
2006	Artistic Director & Co-founder: New Frontiers Chamber Symphony – Eugene, OR (2005-06)
2005	Assistant to the Director: Oregon Bach Festival Composers Symposium – Eugene, OR (Sum.)

### **TECHNICAL EXPERIENCE**

---

Programming Languages (Python, C#, Lua)  
 Version Control (git / Bitbucket / github) & Project Management / Issue Tracking (Jira/Confluence)  
 Games & VR (Wwise, Unreal Engine, Unity/C#, Processing)  
 Audio Processing (MAX/Jitter, Pure Data, Tone.js, SuperCollider, Kyma)  
 Digital Audio Workstations (Reaper, ProTools, Ableton Live, Reason, Logic, Audacity)  
 Photogrammetry & Structure-from-Motion Tools (VisualSFM, Meshlab and Blender)

3D Video / Audio (Adobe Premiere, Reaper Ambisonics Toolkit, Google Resonance)

A/V Engineering (Studio & Live Recording, Live Sound Engineering, Projection Design, Show Control)

Web & Graphic Design (HTML, CSS, Adobe Photoshop, GIMP, Inkscape)

Video Editing (Final Cut, Adobe Premiere)

Music Engraving Software (Sibelius, Finale)

Music Information Retrieval & Machine Learning tools (librosa, music21, pytorch)