

Ryan Michael McGee, PhD

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Engineer, composer, researcher, teacher, and new media artist experienced in development of custom and commercial software for spatial audio, sonification, sound design, synthesis, visualization, interactivity, and VR

EDUCATION

- PhD in Media Arts and Technology | University of California, Santa Barbara | 2015
Dissertation: "Scanning Spaces: Paradigms for Spatial Sonification and Synthesis"
Committee: JoAnn Kuchera-Morin (Chair), Curtis Roads, George Legrady
Deutsch Foundation Fellowship (2013-2014), Graduate Dean's Advancement Fellowship (2013)
- Master of Science in Media Arts and Technology | University of California, Santa Barbara | 2010
Thesis Project: "Sound Element Spatializer" GPA: 3.9/4.0
- Bachelor of Science in Electrical Engineering | The University of Texas at Dallas | 2007
Engineering Honors Scholarship (2005-2007) GPA: 3.7/4.0 (Cum Laude)
- Texas Academy of Math and Science | The University of North Texas | 2003-2005
Publicly funded, residential, early university program

PROFESSIONAL EXPERIENCE

Proficiency with *C/C++*, *Objective-C*, *JUCE*, *VST/AU/AAX Plug-In Development*, *Unity*, *WWise*, *openFrameworks*, *Cinder*, *Processing*, *Max/MSP*, *Mac*, *Windows*, *Linux*, *iOS*, *Android*

- Owner / Principal Engineer | Life Orange LLC | 2017 - Present
Agile software development for audio plug-ins, DSP, VR, sound design, spatial audio, LED control, interactive installations.
Clients: Intel Studios, Walt Disney Imagineering, With.in, Slate Digital, Final Mix Inc, TONSTURM
- Developer | MEZMO | 2015-2016
Created a mesh network for connecting artists to fans at dense venues using offline BTLE P2P + ultrasonic communication with indoor/micro-location resolution for spatial light, sound, and haptics on mobile devices
- Contract Software Developer | 2012-2016
Software development for several pro-audio companies, interactive multimedia artworks, architectural lighting, mobile, and multi-touch applications. Notably, I was the original developer for the Raven MTX/MTi mixing consoles and lead a small team to develop all software products for Slate Media Technology from 2012 to 2015
Other clients: Dolby, Neyrinck, Penteo/Perfect Surround, Final Mix Inc
- Founder / Developer | Unfiltered Audio LLC | 2012-2016
DSP for Renoun Reverb RackFX, business operations, technical consulting, and software prototyping
- Research Intern | Nokia Research Hollywood | 2011
Created C++/Qt application for dynamic mapping of mobile sensors to sound synthesis parameters.
- Electrical Design Engineer | Polatomic Inc, Richardson, TX | 2007-2008
Designed and programmed user interface for an embedded data acquisition system used on Navy P-3 aircraft.
- Student Engineer | Southwest Research Institute, San Antonio, TX | 2007
Wrote MATLAB scripts to predict orbit propagation, designed simple analog circuits, calibrated embedded digital audio recording systems, authored technical documents
- Intern | And/Or Gallery, Dallas, TX | 2006-2007
Artwork installation and customer assistance for new media art gallery
- Mac Specialist | Apple Store Willow Bend, Plano, TX | 2005-2006
Assisted retail customers and lead public workshops on Final Cut Pro/iMove/iTunes

ACADEMIC EXPERIENCE

- Lecturer | [UCSB Department of Art](#) | Winter 2016
[Art 22: Introduction to Computer Programming for the Arts](#)
- Teaching Associate | [UCSB Department of Art](#) | Fall 2015
[Art 22: Introduction to Computer Programming for the Arts](#)
- [AlloSphere Research Group](#) | UCSB | 2012-2014
Development of custom C++ software for spatial audio, sonification, and immersive graphics within a 10 meter spherical 3D audio-visual display
- Teaching Associate | UCSB Department of Art | Fall 2014
[Art 102: Advanced topics course on audio/visual creative coding in the browser using Javascript and P5.js](#)
- Teaching Associate | UCSB Department of Art | Spring 2013
[Art 122: Advanced topics course on software and hardware development using Processing and Arduino](#)
- Teaching Assistant | UCSB, Media Arts and Technology | 2009-2011
Led lab and discussion sections involving C++ audio APIs, digital sound synthesis, audio recording/mixing, multi-touch computing, sound spatialization, and graphics rendering
 - Realistic Image Synthesis (Fall 2011)
 - Digital Audio Programming: Spatial Audio (Winter 2011)
 - Multimedia Engineering Technology (Spring 2010)
 - Music and Technology (Winter 2010)
 - Digital Audio Programming: Sound Synthesis (Fall 2009)
- Teaching Assistant | UCSB Department of Physics | 2010-2011
Course TA and instructor for undergraduate lab and discussion sections involving mechanics, waves, optics, and magnetism.
- Graduate Student Researcher | UCSB Department of Physics | 2010
Developed cross-platform software application for the sonification of cosmic microwave background power spectra. Awarded NASA California Space Grant.

PUBLICATIONS

- McGee, R., Rogers, D.V., [Musification of Seismic Data](#). Proceedings of the International Conference on Auditory Display (ICAD) 2016
- McGee, R., [Spatial Modulation Synthesis](#). Proceedings of the International Computer Music Conference (ICMC). 2015.
- McGee, R., [VOSIS: a Multi-touch Image Sonification Interface](#). Proceedings of New Interfaces for Musical Expression (NIME). 2013.
- McGee, R., Dickinson J., Legrady G. [The Voice of Sisyphus: an Image Sonification Multimedia Installation](#). Proceedings of the International Conference on Auditory Display (ICAD). 2012.
- McGee, R., Ashbrook D., White S. [SenSynth: a Mobile Application for Dynamic Sensor to Sound Mapping](#). Proceedings of New Interfaces for Musical Expression (NIME). 2012.
- McGee, R. and Wright, M. [Sound Element Spatializer](#). Proceedings of the International Computer Music Conference (ICMC). 2011.
- McGee, R., Fan, Y.Y., and Ali, S.R. [BioRhythm: a Biologically-inspired Audio-Visual Installation](#). Proceedings of New Interfaces for Musical Expression (NIME). 2011.
- McGee, R., van der Veen, J., Wright, M., Kuchera-Morin, J., Alper, B., and Lubin, P. [Sonifying the Cosmic Microwave Background](#). Proceedings of International Conference on Auditory Display (ICAD). 2011.

INSTALLATIONS / TALKS / PERFORMANCES

- *Runnin'* | Sundance New Frontier | VR Music Video Installation | Park City, UT | January 24th-31st, 2019
Premiere of VR music video utilizing Intel's volumetric video capture, software developed by Life Orange in partnership with Intel Studios, Reggie Watts, and Wajatta. Also @ SXSW 2019 - Winner of Jury Award for Best Interactive.
- IEEE Vis Arts | Live video sonification performance | Phoenix, AZ | October 3rd, 2017
- Currents New Media Festival | [Live video sonification performance](#) | Santa Fe, New Mexico | June 9th, 2017
- *TABULA* | Custom LED graphics control software for permanent lighting installation, 385 Sherman, Palo Alto, CA
- *SV+VS (Sonifying Visuals + Visualizing Sound)* | DDP (DongDaeMoon Design Plaza), Seoul | Aug - Sep , 2016
VOSIS iPad image sonification software installation
- *Life Orange* | Live Radio Performance on KCSB, Santa Barbara | August 12th, 2016
Utilized custom software for image sonification, earthquake audification and live-coding in Gibber
- *Magnitude* | @Nitro, Sydney, NSW | July 17th, 2016
1 hour public sound/led performance of electronica and light generated from seismic data
- *Terramomentum* | Australian National University, Canberra NSW | July 4-7th, 2016
Subsonic, haptic, seismic installation as part of ICAD 2016
- *Kinetic v3* | SBCAST, Santa Barbara, CA | May 28th and June 2nd, 2016
Live audio-visual performance over quadraphonic outdoor PA with wall projection
- *Kinetic v3* | AlloSphere, UCSB | May 27th, 2016
Live audio-visual performance over a 54.1 spherical sound system with full surround 3D projection
- *SV+VS (Sonifying Visuals + Visualizing Sound)* | Fellows of Contemporary Art, LA | Jan-March 2016
Participating artist and iPad image sonification performance
- *Creating the Sensorial Space* | Dolby, San Francisco, CA | November 12th 2015
Panel discussion on spatial sound design and composition
- *Concourse* | Dolby, San Francisco, CA | September-October 2015
30 Channel Generative Sound Installation Synchronized with 100ft Display Wall (with Reza Ali)
- *Seismic Spaces* | [Futra Presents Pangea](#), Los Angeles, CA | November 7th, 2015
Live performance of music made from sonifications of major earthquakes
- *Seismic Spaces / DOMUS* | Materials and Applications, Silverlake, CA | May 30th, 2015
Live performance of music made from sonifications of major earthquakes
- *Kinetic v1 and v2* | AlloSphere, UCSB | June 6th, 2014 & May 29th, 2015
Live audio-visual performances utilizing a 32.1 spherical sound system with full stereo 3D projection
- *No Heritage* | Lotte Lehman Concert Hall, UCSB | October 13th, 2011
Octaphonic acousmatic work featuring accelerometer audification, image sonification, and high-speed Doppler
- *Skate 1.0* | Los Angeles Architecture and Design Museum | July - September, 2011
Collaborative 12.2 channel light and sound installation with Electroland
- *BioRhythm* | Mindshare, Los Angeles | August 19th, 2010
Collaborative real-time PPG bio sonification installation with Yuan-Yi Fan and Reza Ali
- *W.A.N.T.S.* | Lotte Lehman Concert Hall, UCSB | February 25th, 2010
Octaphonic acousmatic work for soprano and motorcyclist featuring fibonacci spirals of sound
- *Life Orange* | Biko House, Isla Vista, CA | Feb/March/May 2009
Live electronica, chip-tune, and musique concrète performances