Gabriel Zalles Ballivian

Audio, media, education

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Education

2012–2016	**BA**, *UC San Diego*, La Jolla, *Bachelors*. Interdisciplinary Computing in the Arts Major
2016–2018	**MA**, *NYU*, New York, *Masters*. Music Technology
2018–2023	**PhD**, *UC San Diego*, La Jolla, *Doctorate*. Computer Music (expected)

Master thesis

Title	*Design of a highly coincident microphone array for stereo and surround sound.*
Supervisors	Agnieszka Roginska
Description	Evaluated the effects of increased capsule coincidence in FOA recordings using state-of-the-art MEMS capsules. Objective measurements were obtained using a custom, Arduino powered, motorized microphone platform. Subjective assessments of the first order ambisonic array with extreme capsule coincidence were also conducted using a DIY head-tracker. The experiment sought to determine if improvements towards spatial aliasing can outweigh the SNR deficits of MEMS systems in FOA arrays. Statistical methods such as ANOVA were used to analyze results. The full thesis can be found at this link

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Experience

Professional

2020–2021	**Technical/Teaching Support**, *UCSD*, La Jolla, California. Instructional assistant responsible for troubleshooting the LMS (Learning Management System) Canvas, the videotelephony system Zoom, and any other network systems related to musical instruction at UC San Diego (UCSD).
2019–2020	**Production Assistant**, *UCSD*, La Jolla, California. Experimental theatre production assistant at UCSD's Conrad Preby's Music Center. As a production assistant I provide support to composers who want add computer music elements to their piece. In particular I advice on spatial audio solutions.

2018–2019	**Teaching Assistant**, *UCSD*, La Jolla, California.
	Teaching assistant for three computer music undergraduate courses including: Musical Acoustics, Computer Music I and Computer Music II. These courses serve to teach: mathematics, acoustics, music and programming via the Puredata software environment. [MUS 170/171/172]
2017–2018	**Research Assistant**, *NYU*, New York City, New York.
	Assisted with a THX research collaboration which evaluated binaural renderers used for spatial audio reproduction. Updated and maintained a GUI written in MATLAB which was used for a subjective study. Along with my other peers, wrote and submitted peer-reviewed papers to AES written in LaTeX.
2017–2018	**Teaching Assistant (DSP)**, *NYU*, New York City, New York.
	Helped students understand the programming environment MATLAB as well as core concepts of digital signal processing. Created teaching material used to help students accomplish assignments. Provided one-on-one tutoring and graded both assignments and exams.
2016/2018	**AV Technician**, *UCSD*, San Diego, California.
	Currently working at audio visual technician setting up and stricking audio and lighting equipment used for concerts, conferences and other events. Live mixing, signal flow, and lighting are daily tasks. As an AV tech I operate sound boards personally for duration of events which include wireless mics and multiple bands.

Awards

2020	**FIC Fitzsimmons Scholarship**, *UCSD FIC*, Site.
2019	**Norman Design Fund Grant**, *UCSD Media Lab*, Site.
2018	**Convergence for Innovation and Entrepreneurship (CIE) Institute Grant**, *NYU Leslie eLab JTerm Startup Sprint*.
2018	**Best Graduate Student Project**, *Steinhardt Music Technology Open House*.
2017	**Bronze Medal - AES Student Design Competition**, *AES 143*.

Papers

Author

2019	**Audio Engineering Society 147**, Effects of Capsule Coincidence in FOA using MEMS: Objective Experiment, UCSD.
	Zalles PDF
2018	**Master Thesis**, The Design of a Highly Coincident Microphone Array for Stereo and Surround Sound , NYU.
	Zalles PDF
2017	**Audio Engineering Society 143**, A Low-Cost, High-Quality MEMS Ambisonic Microphone, NYU.
	Zalles et al. PDF

Co-author

2017	**Audio Engineering Society 143**, Evaluation of Binaural Renderers: A Methodology, NYU.
	Reardon et al. PDF

2018 **Audio Engineering Society 144**, Evaluation of Binaural Renderers: External-ization, Front/Back and Up/Down Confusions, NYU.
Reardon et al. PDF

2018 **Audio Engineering Society 144**, Evaluation of Binaural Renderers: Localiza-tion, NYU.
Reardon et al. PDF

2018 **Audio Engineering Society AVAR**, Evaluation of Binaural Renderers: Multidi-mensional Sound Quality Assessment, NYU.
Reardon et al. PDF

2018 **Audio Engineering Society AVAR**, Acoustic perturbations in HRTFs mea-sured on Mixed Reality Headsets, NYU.
Genovese et al. PDF

Workshops given

2019 **Linux Audio Conference**, Making Ambisonic Plug-ins in JUCE, CCRMA Stan-ford University.
Zalles Site

Programming Languages

Proficient MATLAB, MAX/MSP, C++
Fluent Puredata, Git(hub)
Familiar Arduino, RPI, Processing

Spoken Languages

Spanish **Native**
English **Fluent**
French **Proficient**

References

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○ Miller Puckette
○ Agnieszka Roginska

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