

# Marian Weger

Kernstockgasse 10  
8020 Graz  
Austria  
+43 676 44 33 690  
mail@marianweger.com  
https://marianweger.com  
pronouns: he, him, his



Born 1986 in Nürnberg, German nationality



## Education

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### Doctor of Philosophy / PhD «with distinction»

2022 Sound and Music Computing | University of music and performing arts (KUG), Graz  
Dissertation: *Plausible auditory augmentation of physical interaction*  
Supervisors: Robert Höldrich, Gerhard Eckel, Thomas Hermann

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### Master of Science / Dipl.-Ing.

2016 Electrical Engineering / Sound Engineering | KUG / TU Graz  
Specialization: computer music and multimedia  
Thesis: *Auditory perception of spatial extent in the horizontal and vertical plane*

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### Bachelor of Science

2013 Electrical Engineering / Sound Engineering | KUG / TU Graz  
Thesis: *Monster – an interactive projection system for dance performances*

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### Further trainings

2019 *Project management for third-party funded projects* | KUG  
2016 *Higher education didactics* | Graz University



## Professional experience

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### Researcher & Lecturer

since 2022 Lecturer | Institute of Electronic Music and Acoustics (IEM), KUG  
2016–2022 Research & teaching associate | IEM, KUG  
2017, 2018 Guest researcher | Center for Cognitive Interaction Technology (CITEC), Bielefeld University, Germany  
2014–2015 Research assistant | IEM, KUG

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### Community services (selection)

Affiliations ACM, AES, DEGA, IEEE, VDT  
2023 Paper Chair | International Conference on Auditory Display, Norrköping, Sweden  
2020 Paper Chair | Audio Mostly Conference, Graz

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## Teaching: University courses

- 2019–2023 *Physical Modeling of Sound and Material Science* | IEM, KUG  
2022 *Do-It-Yourself Electronics* | IEM, KUG  
2019 *Sonic Interaction Design* | IEM, KUG  
2018–2019 *Sonification and Auditory Displays* | IEM, KUG  
2016–2017 *Musical Acoustics* | IEM, KUG  
Study programs MA Sound Design, BA/MA Computer Music and Sound Art, MA Musicology, BSc/MSc Electrical Engineering / Sound Engineering

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## Teaching: Workshops

- 2022 *Schrödinger's box: augmenting physical objects by sound* | Interactive Sonification Workshop (ISon), Hanse-Wissenschaftskolleg (HWK), Delmenhorst, Germany  
2018 *Science by Ear 4 Workshop (SBE4)* | IEM, KUG  
2015 *Examining the value of evaluation in the context of interactive sound art* | International Conference on Auditory Display (ICAD), Graz  
2013 *Sound editing / radio production* | FH Joanneum, Graz  
2011–2013 *Extended View Toolkit: video projection mapping with Pure Data*
  - Linux Audio Conference (LAC) 2013, Graz
  - Digital Worlds Institute, University of Florida, USA | via streaming from Graz
  - WORM, Rotterdam, Netherlands
  - FH Joanneum / University of Applied Sciences, Graz
  - Zurich University of the Arts (ZHdK), Switzerland
  - Pure Data Conference (PDCon) 2011, Weimar, Germany

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## Art engineering (selection)

- 2022 Akademie Graz | *Why Frets? Tombstone* (Marko Ciciliani)  
electronics engineer
- 2018 Klanglicht, Graz | *pianometalspace//soundlinks* (Winfried Ritsch)  
video projection, robotic piano machinist
- 2017 Tanzquartier (TQW), Vienna | *Every Move a Sound* (Gerhard Eckel et al.)  
motion tracking operator, sound engineer
- 2016 Tage neuer Musik, Graz | *Quadraturen* (Peter Ablinger)  
sound engineer, robotic piano machinist
- 2015 Steirischer Herbst, Graz | *50 years IEM – Pure Electronic / Vintage Concerts*  
technical director, live sound engineer
- 2015 PARSE Conference, Gothenburg | *Zeitraum* (Gerhard Eckel)  
hardware/software developer
- 2014 Festival der Projektgruppe Neue Musik, Bremen | *Portrait meiner Eltern* (Peter Ablinger)  
robotic piano machinist
- 2011 Ars Electronica Festival, Linz | *Heptapiano* (Winfried Ritsch)  
robotic piano machinist, software developer
- 2011, 2010 Wien Modern, Vienna & Steirischer Herbst (opening concert), Graz | *Maschinenhalle #1* (Bernhard Lang, Winfried Ritsch, Christine Gaigg, Philipp Harnoncourt)  
robotic piano machinist, hardware/software developer, sound engineer
- 2010 NetPlay Festival, IEM Graz / Sarc Belfast / HFMT Hamburg | *I am playing in one netroom* (Winfried Ritsch)  
robotic piano machinist



## Art (selection)

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### Sound installation

- 2022 Audio Mostly, FH St. Pölten | *Schrödinger's box*
- 2012 Kunstbad Raiffeisenhof, Graz | *Freischwimmer-Freischwinger*
- 2011 ORF Musikprotokoll / Steirischer Herbst, Graz | *Raumsonde Venus-Wega*

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### Computer music

- 2019 STWST48x5, Ars Electronica Festival, Linz, Austria | *RE:TALK expanded patching*
- 2015 International Conference on Spatial Audio (ICSA), Graz | *3ma3*
- 2012, 2011 Jazzwerkstatt Wien, Porgy&Bess, Vienna | *IEM Computer Music Ensemble (ICE)*

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### Sound & interaction design

- 2013 Deutsche Oper, Berlin, Germany & Mumuth, Graz | *3x Così fan tutte*  
→ Aventis Foundation scholarship
- 2013 Theater am Lend, Graz | *Orpheus & Eurydike*
- 2011 Mumuth, Graz | *Alice Schalek – die letzten Tage der Menschheit*

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### Video projection mapping

- 2013 mur.sat: Covered Skies Phase II, ESC medien kunst labor, Graz | *In Caelum*
- 2012 International Computer Music Conference (ICMC), Ljubljana, Slovenia | *Monster*  
+ performances in Vienna: Porgy&Bess, Semperdepot / Academy of Fine Arts, Odeon  
→ Awarded: Fidelio competition, Vienna, Austria
- 2010 Kunsthaus Muerz, Mürzzuschlag, Austria | *Extended View Streamed*

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### Residencies

- 2012–2014 Rondo, Graz | working studio, funded by the state of Styria
- 2012 moddr\_ Hackerspace / WORM, Rotterdam, Netherlands



## Skills

- Spoken & written German (native), English (fluent), French (fluent)
- Programming Matlab/Octave, Python, Micro-/CircuitPython, Arduino
- Computer music Pure Data (Pd), SuperCollider, Max/MSP



## Publications (peer-reviewed)

- 2022 Marian Weger, Michael Aurenhammer, Thomas Hermann, and Robert Höldrich. “The information capacity of plausible auditory augmentations: percussion of rectangular plates.” In: *Interactive Sonification Workshop (ISon)*. Delmenhorst, Germany, 2022
- Celia Moosbrugger, Katharina Groß-Vogt, and Marian Weger. “Real-time button display and chord verification – an interactive learning app for the diatonic accordion.” In: *Audio Mostly*. St. Pölten, Austria: ACM, 2022, pp. 163–170. DOI: 10.1145/3561212.3561218
- Marian Weger, Iason Svoronos-Kanavas, and Robert Höldrich. “Schrödinger’s box: an artifact to study the limits of plausibility in auditory augmentations.” In: *Audio Mostly*. St. Pölten, Austria: ACM, 2022. DOI: 10.1145/3561212.3561222
- Katharina Groß-Vogt, Iason Svoronos-Kanavas, Marian Weger, and Clemens Amon. “The augmented floor – assessing auditory augmentation.” In: *Audio Mostly*. St. Pölten, Austria: ACM, 2022, pp. 7–14. DOI: 10.1145/3561212.3561219
- Marian Weger, Thomas Hermann, and Robert Höldrich. “AltAR/table: a platform for plausible auditory augmentation.” In: *International Conference on Auditory Display (ICAD)*. Virtual Conference, 2022. DOI: 10.21785/icad2022.005  
→ ★ best paper award
- 2020 Andreas Greindl, Patrick Heidegger, Katharina Groß-Vogt, and Marian Weger. “Expergefactor: sonic interaction design for an alarm clock app”. In: *Audio Mostly*. Graz, Austria: ACM, 2020, pp. 241–244. DOI: 10.1145/3411109.3411149
- Katharina Groß-Vogt, Marian Weger, Matthias Frank, and Robert Höldrich. “Peripheral sonification by means of virtual room acoustics”. In: *Computer Music Journal* 44.1 (2020), pp. 71–88. DOI: 10.1162/comj\_a\_00553
- 2019 Andrea Lorena Aldana Blanco, Marian Weger, Steffen Grautoff, Robert Höldrich, and Thomas Hermann. “CardioScope: ECG sonification and auditory augmentation of heart sounds to support cardiac diagnostic and monitoring.” In: *Interactive Sonification Workshop (ISon)*. Stockholm, Sweden, 2019, pp. 115–122
- Marian Weger and Robert Höldrich. “A hear-through system for plausible auditory contrast enhancement”. In: *Audio Mostly*. Nottingham, UK: ACM, 2019, pp. 1–8. DOI: 10.1145/3356590.3356593
- Marian Weger, Thomas Hermann, and Robert Höldrich. “Real-time auditory contrast enhancement”. In: *International Conference on Auditory Display (ICAD)*. Newcastle upon Tyne, UK, 2019, pp. 254–261. DOI: 10.21785/icad2019.026
- Thomas Hermann and Marian Weger. “Data-driven Auditory Contrast Enhancement for Everyday Sounds and Sonifications”. In: *International Conference on Auditory Display (ICAD)*. Newcastle upon Tyne, UK, 2019, pp. 83–90. DOI: 10.21785/icad2019.005
- 2018 Katharina Groß-Vogt, Marian Weger, and Robert Höldrich. “Exploration of auditory augmentation in an interdisciplinary prototyping workshop”. In: *Forum Media Technology*. St. Pölten, Austria, 2018, pp. 10–16  
→ ★ honorable mention award
- Katharina Groß-Vogt, Marian Weger, Robert Höldrich, Thomas Hermann, Till Bovermann, and Stefan Reichmann. “Augmentation of an institute’s kitchen: an ambient auditory display of electric power consumption”. In: *International Conference on Auditory Display (ICAD)*. Houghton, MI, USA, 2018, pp. 105–112. DOI: 10.21785/icad2018.027

Lisa Frohmann, Marian Weger, and Robert Höldrich. “Recognizability and perceived urgency of bicycle bells.” In: *International Conference on Auditory Display (ICAD)*. Houghton, MI, USA, 2018, pp. 128–135. DOI: 10.21785/icad2018.025  
→ ★ best paper award

Marian Weger, Thomas Hermann, and Robert Höldrich. “Plausible auditory augmentation of physical interaction”. In: *International Conference on Auditory Display (ICAD)*. Houghton, MI, USA, 2018, pp. 97–104. DOI: 10.21785/icad2018.024

2017 Marian Weger, David Pirrò, and Robert Höldrich. “Evaluation of an acoustic interface for tremor analysis”. In: *Sound and Music Computing Conference (SMC)*. Espoo, Finland, 2017, pp. 234–241

Georgios Marentakis, David Pirrò, and Marian Weger. “Creative evaluation”. In: *Designing Interactive Systems (DIS)*. Edinburgh, UK: ACM, 2017, pp. 853–864. DOI: 10.1145/3064663.3064710

2016 Marian Weger, David Pirrò, Alexander Wankhammer, and Robert Höldrich. “Discrimination of tremor diseases by interactive sonification.” In: *Interactive Sonification Workshop (ISon)*. Bielefeld, Germany, 2016, pp. 34–40  
→ ★ best paper award

Marian Weger, Georgios Marentakis, and Robert Höldrich. “Auditory perception of spatial extent in the horizontal and vertical plane.” In: *International Conference on Digital Audio Effects (DAFx)*. Brno, Czech Republic, 2016, pp. 301–308

2012 Fabio Kaiser, Marian Weger, and Winfried Ritsch. “Designing simulacra or the electronic replication of a mechanical instrument.” In: *Sound and Music Computing Conference (SMC)*. Copenhagen, Denmark, 2012, pp. 201–207

2011 Peter Venus, Marian Weger, Cyrille Henry, and Winfried Ritsch. “Extended View Toolkit.” In: *Pure Data Convention*. Weimar, Germany, 2011, pp. 161–167



## Publications (not peer-reviewed)

2022 Martin Czuka, Marian Weger, and Robert Höldrich. “Acoustic characterization of impacted rectangular plates.” In: *International Congress on Acoustics (ICA)*. Gyeongju, Korea, 2022, pp. 356–363

2021 Martin Czuka, Marian Weger und Robert Höldrich. „Klangsynthese und akustische Erkennung rechteckiger Platten“. In: *DAGA - Jahrestagung für Akustik*. Vienna, Austria, 2021

2020 Marian Weger, Johannes Zmölnig, Lukas Göllles, and Thomas Deppisch. “3D-Audio im Web-Browser: Wie lassen sich Online-Konzerte zum Leben erwecken?” In: *VDT Magazin*. Cologne, Germany: Verein Deutscher Tonmeister, 2020, pp. 16–20  
→ invited article