Curriculum Vitae and Track Record

PERSONAL DETAILS

Michele Geronazzo, ORC : 0000-0002-0621-2704, Google Scholar: Profile

Current position(s)

Since 12/2021 Associate Professor in Computer Engineering, Dept. of Engineering and Management, University of Padova, IT.

Since 2024 Member of the Human Inspired Technologies (HIT) Research Centre, University of Padova, IT.

Since 2021 Visiting Researcher. Dyson School of Design Engineering, Imperial College London, UK. Coordination unit of the EIC Pathfinder Proactive project SONICOM (Grant No. 101017743, H2020 RIA action).

Previous position(s)

2020-2021 Assistant Professor in Computer Science and Digital Media, Dept. of Humanities and Cultural Heritage, University of Udine, IT.

2020 Research Associate. Audio Experience Design group, Dyson School of Design Engineering, Imperial College London, UK.

2017 – 2019 Postdoctoral Fellow. Technical Faculty of IT and Design, Aalborg University, DK.

2016 – 2017 Postdoctoral Researcher. Dept. of Neurosciences, University of Verona, IT.

2014 – 2016 Postdoctoral Researcher. Dept. of Information Engineering, University of Padova, IT

Education and key qualifications

2014 Ph.D. in Information and Communications Technology. Dept. of Information Engineering, University of Padova. Supervisor: Federico Avanzini. “Mixed Structural Models for 3D Audio in Virtual Environments”.

2009, 2006 MSc and BSc in Computer Engineering. University of Padova, IT.

RESEARCH ACHIEVEMENTS AND PEER RECOGNITION

Research achievements

My research sits at the intersection of computer science, acoustics, engineering, and psychology, focusing on modelling and simulations of sonic interactions in complex virtual/augmented reality systems. My academic career can conceptually be framed similarly to the structure of the new research field “Sonic Interactions in Virtual Environments (SIVE)” I have defined in a three-level reversed pyramid (see Figure).

- Main Organizer. Since 2015, the SIVE workshop within the A-ranked IEEE Virtual Realty conference.
- Book Editor. Sonic Interactions in Virtual Environments. In Human-Computer Interaction Series, Springer Nature, 2023, under Open Access license.

The relevance of my multidisciplinary profile can be certified by my unique academic path:

- Immersive audio concerns the computational aspects of the acoustical-space properties of technologies.
- Strong background in computer science and engineering. According to Scopus, my Ph.D. works (3 papers in int. journals, 15 papers in int. conf. proceedings, and a monographic Ph.D. thesis) have been cited 208 times (35% of my total citations). My research made a substantial contribution to the modelling of user acoustics and the personalization of immersive audio technologies.
- Contribution to international standardization projects in acoustics: “SOFA–Spatially Oriented Format for Acoustics” by characterizing headphones, and to “The Princeton Headphone Open Archive (PHOnA)” supported by Sony Corporation of America and Princeton University.
- Sonic interactions refer to human-computer interplay through auditory feedback in 3D environments.
- Cochlear R&D (U.K.), a world leader in cochlear implants, funded my work at the Dept of Neurosciences - University of Verona, where I studied movement analysis and applied neurophysiological signal processing in the action-perception loop with Prof. Paola Cesari.
- Aalborg University awarded me an international research fellowsh

ip. I developed new sonic interactions in multimodal VR scenarios such as educat ion, rehabilitation, assistive technologies, and storytelling.
- Multimodal VR/AR systems impact different application domains.
- In 2020, I was appointed tenure-track Assistant Professor after a highly competitive public call at the Department of Human Studies of the Unive rsity of Udine. That position focused on the philosophical and cultural aspects of computer science.
- In 2021, I was appointed Associate Professor at the University o f Padova, supporting the Mechatronic program focusing on cyber-physical systems and robotics.

Four records mainly certify my influence on the international research communiti es:
- In 2019, the Institute of Electrical and Electronic Engineers (I EEE) elevated my membership to Senior Member due to my significant technological contributions to the engineering society.
- In 2020, at Imperial College London, I started a network of exce llence funded by the EIC via the prestigious Pathfinder Challenges scheme, the S ONICOM project, by collaborating with internationally established research group s in the psychoacoustic, human-computer interaction (HCI), and artificial intell igence domains.
- In 2023, prof. Bobby Bodenheimer, EiC of ACM Transactions on App lied Perception, invited me to join the editorial board as Associate Editor spec ializing in SIVE, psychoacoustic, and computational acoustics.
- 2023-2024, the IEEE Signal Processing Society sponsored the “The Listener Acoustic Personalization (LAP) Challenge,” which I envisioned while wr iting the SONICOM project proposal. I chaired the 1st edition on machine learnin g for spatial upsampling.
- In 2024, prof. Brendt Wohlberg, EiC of IEEE Open Journal of Sign al Processing, invited me to join the editorial board as Associate Editor specia lizing in audio and multimodal signal processing.
- In 2025, prof. Borko Furht, EiC of Multimedia Tools and Applicat ions (Springer Nature), invited me to join the editorial board as Associate Edit or.

Breakthrough works. >30 articles in peer-reviewed int. journals since 2013, incl uding 11 as first author and 13 without the Ph.D. supervisor. >80 articles in co nferences since 2010, including 30 as the first author. Quantified impact: Googl e Scholar: 1609 cit., h-index of 21. Scopus: 873 cit., h-index of 16 (Sept 2025) .

I advanced my knowledge in this highly multidisciplinary field through the follo wing selected works:

(First)
Main
author

M. Geronazzo, “Strong and weak head-related transfer functions: The eHRTF analyt ical framework,” JASA Express Lett., vol. 5, no. 8, p. 087202, Aug. 2025.

Pioneering theoretical research: a new definition of the dynamic nature of liste ning through HRTF.

M. Geronazzo, R. Barumerli, and P. Cesari, “Shaping the auditory peripersonal sp ace with motor planning in immersive virtual reality,” Virtual Reality, Oct. 202 3.

Novel research methodology: directional dependent characterization of periperson al space in VR.

M. Geronazzo, L. S. Vieira, N. C. Nilsson, J. Udesen, and S. Serafin, “Superhuma n Hearing-Virtual Prototyping of Artificial Hearing: a Case Study on Interaction s and Acoustic Beamforming,” IEEE Transactions on Visualization and Computer Gra phics, vol. 26, no. 5, pp. 1912–1922, May 2020

Pioneering research: 1st virtual prototyping approach to human-system interactio

ns with hearables.

M. Geronazzo, E. Sikström, J. Kleimola, F. Avanzini, A. De Götzen, and S. Serafi n, “The impact of an accurate vertical localization with HRTFs on short explorat ions of immersive virtual reality scenarios,” in Proc. 17th IEEE/ACM Int. Symp. on Mixed and Augmented Reality (ISMAR), Germany, Oct. 2018.
Innovative research: a joint exploration of user acoustic and non-acoustic facto rs in experiences.

M. Geronazzo, S. Spagnol, and F. Avanzini, “Do we need individual head-related t ransfer functions for vertical localization? The case study of a spectral notch distance metric,” IEEE/ACM Transactions on Audio, Speech, and Language Processin g, vol. 26, no. 7, pp. 1243–1256, Jul. 2018.
New research frontier: systematic use of computational auditory models in spatia l hearing research.

M. Geronazzo, A. Bedin, L. Brayda, C. Campus, and F. Avanzini, “Interactive spat ial sonification for non-visual exploration of virtual maps,” International Jour nal of Human-Computer Studies, vol. 85, Jan. 2016.
Research breakthrough: map exploration with personalized immersive audio and hap tics.
Key
author
D. Fantini, M. Geronazzo, F. Avanzini, and S. Ntalampiras, “A Survey on Machine Learning Techniques for Head-Related Transfer Function Individualization,” IEEE Open Journal of Signal Processing, vol. 6, pp. 30–56, 2025.

A. G. Privitera, F. Fontana, and M. Geronazzo, “The Role of Audio in Immersive S torytelling: a Systematic Review in Cultural Heritage,” Multimed Tools Appl, Jun e 2024.

D. Fantini, G. Presti, M. Geronazzo, R. Bona, A. G. Privitera, and F. Avanzini, “Co-immersion in Audio Augmented Virtuality: the Case Study of a Static and Appr oximated Late Reverberation Algorithm,” IEEE Transactions on Visualization and C omputer Graphics, pp. 1–11, 2023.

L. Picinali, B. F. Katz, M. Geronazzo, P. Majdak, A. Reyes-Lecuona, and A. Vinci arelli, “The SONICOM Project: Artificial Intelligence-Driven Immersive Audio, Fr om Personalization to Modeling,” IEEE Signal Processing Magazine, vol. 39, no. 6 , pp. 85–88, Nov. 2022.

E. Degli Innocenti, M. Geronazzo, D. Vescovi, R. Nordahl, S. Serafin, L. A. Ludo vico, F.Avanzini, “Mobile virtual reality for musical genre learning in primary education,” Computers & Education, vol. 139, pp. 102–117, Oct. 2019.
Invited

A. G. Privitera and M. Geronazzo, “Designing Sonic Interactions in Intelligent R eality with Egocentric Audio Technologies,” in Routledge Handbook on Sound Desig n, Taylor&Francis Group, 2024.

M. Geronazzo, E. Peruch, F. Prandoni, and F. Avanzini, “Applying a single-notch metric to image-guided head-related transfer function selection for improved ver tical localization,” Journal of the Audio Engineering Society, vol. 67, no. 6, p p. 1--15, Jun. 2019.

M. Geronazzo, entries: Sound spatialization | Immersive auralization using headp hones | User acoustics with head-related transfer functions. In Encyclopedia of Computer Graphics and Games. Springer, 2018

M. Geronazzo, F. Avanzini, and F. Fontana, “Auditory navigation with a tubular a coustic model for interactive distance cues and personalized head-related transf er functions,” J Multimodal User Interfaces, vol. 10, no. 3, pp. 273–284, Sep. 2

016.
Knowledge transfer:
2024 Founder of ATENA Space s.r.l.s. - A startup company developing an innovative digital ecosystem to optimize management and communication in e-health dental practices through XR.
2023 ATENA Virtual Assistant - Cyberphysical environment for dental clinics, enhanced by immersive human-machine collaboration. Stat-up winner of the ICT category of Start-up Veneto 2023, IT.

Peer recognition

- MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Since 2022 Member of the Association for Computing Machinery (ACM) and Special Interest Group on Computer-Human Interaction (SIGCHI)
Since 2017 Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) and member of the Technical Committee on Audio and Acoustic Signal Processing
Since 2013 Associate Member of the European Acoustics Association (EAA) and member of the Technical Committee on Psychological and Physiological Acoustics

- INVITATIONS, LECTURES AND SEMINARS

Since 2011, I have given more than 20 talks, 13 selected from peer-review on my papers, 6 by invitation, at international and national conferences, which include prestigious venues such as IEEE/ACM Int. Symposium on Mixed and Augmented Reality, ACM Symposium on Virtual Reality Software and Technology, and the International Congress on Acoustics.
2025 Keynote speech. “HRTF Individualization: State of the Art & Current Challenges”, Huawei Tech Arena, Munich, DE.
2022 Invited Talk. “Sonic Interactions in Headphone-mediated Virtual Environments”, AudioVisual Tech Lab of Huawei Munich Research Center, DE.
2021 Invited Talk. “The Egocentric Audio Perspective in Virtual Environments”, 2nd Symposium: The Acoustics of Ancient Theatres, Verona, IT
2019 Invited Talk. “On the evaluation of HRTFs with probabilistic auditory models of human sound localization”, International Congress on Acoustics, Aachen, DE.
2019 Invited Talk. “(Non)Acoustically trained 3D audio models for virtual reality applications”, Imperial College, London, U.K. .
2018 Invited Lecture. “Physical Modeling in Spatial Audio”, Aalborg University, Copenhagen, DK.
2018 Invited Talk. “Technologies for Sonic Interactions in Immersive Virtual/Augmented Reality Contexts” Congress on Musical Informatics (CIM), Udine, IT.
2015 Invited Talk. “The external ear acoustics: a mixed structural modeling approach in virtual auditory displays”, Congress of the Italian Association of Acoustics (AIA), Florence, IT.

- HONORS AND FUNDING

2022 IT-MUR Grant. Coordinating PI of the MUR’s PRIN 2022 (Research Projects of National Interest) project S-TWIN No. C53D2300366 (€331,000, ERC PE6)
2020 EU Grant. Co-proponent of EU’s Horizon 2020 project SONICOM No. 101017743, FETPROACT-EIC-07-2020 success rate 2.7% (€1.8M to my organization, €5.6M in total).
2017 International Research Fellowship, awarded by Aalborg University (€150,000) under the 2016-2021 Aalborg University program - Knowledge for the World in collaboration with Prof S. Serafin.
2017 Research Fellowship, awarded by Brain Research Foundation Verona (€21,000).
2015 “Gino Sacerdote” Prize for the Best Ph.D. Thesis on topics related to acoustics, awarded by the Italian Association of Acoustics
2014 Project manager of "Personal Auditory Displays for VR", University of Padova (€43,000).
Since 2010 Six Best Paper/Poster awards at international conferences.

ADDITIONAL INFORMATION

Other contributions to the research community

- ORGANISATION OF SCIENTIFIC MEETINGS

Since 2023 Chair and main organizer. IEEE Signal Processing Society sponsored “The Listener Acoustic Personalization (LAP) Challenge.”
Since 2015 Organizing Committee. IEEE VR Workshop on Sonic Interactions in Virtual Environments (SIVE). Chair of 2018, 2020, and 2022 editions.
2011 Local Organising Committee. 8th-International Conference on Sound and Music Computing.

- INSTITUTIONAL RESPONSIBILITIES

Since 2024 Board of Ph.D. School, Mechatronics and Product Innovation Engineering, University of Padova.
2020 - 2024 Founder - Board of Ph.D. School, Computer Science and Artificial Intelligence, University of Udine.
2017 – 2019 Examinations Board, MSc Sound & Music Computing, Aalborg University.

- SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Since 2023 I have been PI of one post-doc student, Dr. Andrea Gulli, in the fields of artificial intelligence and psychoacoustics.
Since 2018 I supervised 4 Ph.D. students in psychoacoustics, virtual reality, machine learning, and human-computer interaction. I supervise Rapolas Daugintis, a Ph.D. student at the Imperial College London on training/adaptation in audio-augmented reality, and Eng. Alessandro Privitera, a Ph.D. student at the University of Udine on sonic interaction design, and Eng. Emanuele Zanoni, a Ph.D. student at the University of Padova on machine learning applied to acoustics. Dr. Roberto Barumerli is now a research scientist at the University of Verona, recently awarded the title of Marie Skłodowska-Curie Fellow at Imperial College London.
Since 2023, I have been PI of 2 research associates in the fields of machine learning, speech therapy, and psychoacoustics.

- REVIEWING ACTIVITIES

Since 2025 Editorial Board, Associate Editor, Multimedia Tools and Applications - Springer Nature.
Since 2024 Editorial Board, Associate Editor, IEEE Open Journal of Signal Processing.
Since 2023 Editorial Board, Associate Editor, ACM Transactions on Applied Perception.
Since 2019 Editorial Board, Frontiers in Virtual Reality - Technologies for VR section.

Since 2053 International Program Committee, Associate Chair, IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR).
Since 2023 International Program Committee, Associate Chair, ACM CHI Conference on Human Factors in Computing Systems (ACM CHI).
Since 2023 International Program Committee, Associate Chair, ACM Virtual Reality Software and Technology (ACM VRST).
2019 – 2023 Book Editor, Sonic Interactions in Virtual Environments - Human-Computer Interaction Series, Springer International Publishing.
Since 2021 Evaluator, Evaluation of Research Quality, Ministry of Research, Italy.
Since 2020 Evaluator, Centre of International Excellence “Alexander von Humboldt“, University of Bayreuth, DE.
2018 – 2019 Lead Guest Editor, Special issue “Interactions in Mobile Sound and Music Computing” - Wireless Communications and Mobile Computing, John Wiley & Sons and Hindawi.
2018 Program Committee, 6th ACM Symposium on Spatial User Interaction (SUI'18).
2015 – 2018 Editor of Proceedings, Proc. of IEEE Virtual Reality Workshop on Sonic Interactions for Virtual Environments, IEEE Computer Society.
Since 2014 Reviewer for prestigious international journals such as the IEEE Trans. Vis. Comput. Graph. (since 2017), IEEE/ACM Trans. on Audio Speech Lang. (since 2014), IEEE Trans. on Mobile Computing (since 2021), Int. J. Hum. Comput. Stud. (since 2016), J. Acoust. Soc. Am. (since 2016).

Since 2014 Reviewer for high-profile international conferences such as IEEE Virtual Reality (VR), IEEE Int. Symp. on Mixed and Augmented Reality (ISMAR), ACM Symp. on Virtual Reality Software and Technology (VRST), ACM Conf. on Human Factors in Computing Systems (CHI), etc.