

MULTI SENSORY EXPERIENCE LAB



THE MULTI SENSORY EXPERIENCE AT AALBORG UNIVERSITY

DEPARTMENT OF ARCHITECTURE, DESIGN AND MEDIA TECHNOLOGY
TECHNICAL FACULTY OF IT AND DESIGN

At the Multisensory Experience Lab (ME-Lab) we work with virtual reality, augmented reality, and multisensory experiences, exploring the combination of different input and output modalities in interactive applications. We are interested in the development of novel hardware and software technologies as well as evaluation of users' experiences.

RESEARCH

KEY RESEARCH AREAS

At the Multisensory Experience Lab (ME-Lab) we are particularly interested in researching topics related to sonic interaction design for multimodal environments, simulating walking experiences, sound rendering and spatialization, haptic interfaces, cinematic VR and evaluating user experience in multimodal environments.

Our research aims to achieve:

- › New interfaces for natural interactions with virtual and augmented reality including multiple senses (beyond the visual one)
- › New sound technologies
- › Training children with special needs in performing everyday skills or in coping with anxiety
- › Substituting missing modalities or enhancing existing ones (e.g. hearing impaired users or visually impaired users)
- › Rehabilitation using immersive technologies

WHAT WE DO

Broadly speaking, the current and future work performed in the ME-Lab falls into three categories:

- › Basic research: We aim to improve immersive technology and understand its users (e.g. perception, cognition, and affect).
- › Applied research: We aim to assist and empower specific user groups by means of immersive technology.
- › Art and culture: We aim to explore new forms of artistic expression and preserve cultural heritage using immersive technology.

EDUCATION

STUDY RELATED ACTIVITIES

The lab supports the Medialogy, Sound and Music Computing programmes.

COLLABORATION

WHO BENEFITS FROM OUR RESEARCH

We apply our technologies to health, rehabilitation, training, learning and entertainment.

EXTERNAL PARTNERS

Municipalities (including Rødovre, Frederiksberg, Copenhagen), companies interested in working with immersive technologies (including Oticon, Bang & Olufsen, Bruel and Kjaer, GN resound) and several international universities.

PUBLICATIONS

IMPORTANT PUBLICATIONS

- › [Sonic interaction design](#)
- › [Virtual reality musical instruments: State of the art, design principles, and future directions](#)
- › [Sonic interactions in virtual reality: state of the art, current challenges, and future directions](#)
- › [Augmented Reality Views for Occluded Interaction](#)
- › [Magnetips: Combining Fingertip Tracking and Haptic Feedback for Around-Device Interaction](#)



AALBORG UNIVERSITY
DENMARK

KEY PROJECTS

NORDIC SOUND AND MUSIC COMPUTING

The Nordic Sound and Music Computing Network (NordicSMC) brings together a group of internationally leading sound and music computing researchers from all five Nordic countries, from Aalborg University, Aalto University, KTH Royal Institute of Technology, University of Iceland, and University of Oslo, and is supported by Nordforsk.

IT'S A DIVE

Individual Three-dimensional Spatial Auditory Displays for Immersive Virtual Environments is a European research project funded at Aalborg University Copenhagen within the Horizon 2020 Marie Skłodowska-Curie Actions.

USING VIRTUAL REALITY FOR POPULATIONS IN NEED

This project is supported by Aalborg University, Frederiksberg municipality, Oticon, GN ReSound, Rødovre municipality, Cool Kids, Konfront, Danish Radio).

VIDEO PRESENTATION



CONTACT

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