FOREWORD

It has been quite a while since the last SONICOM newsletter, and we have several news and updates to share with you!

In the past 10 months many important things have happened! From the research side of things, we have started to tackle the challenge of HRTF individualisation from different sides, looking for example at parametric pinna models as well as acoustic measurements and AI-based spatial oversampling.

We have also launched two studies focussing on binaural reverberation, and one looking at the effect of simulated source distance within AR/VR-based interactions.

From the project management side of things, we have successfully completed our year 1 review, engaging with the EC project officer as well as with three independent researchers, who gave us very positive feedback about our progress.

In this issue we'll be describing some of the studies mentioned above, and briefly describe our next steps, providing some pointers about how external people could get in involved in our research.

Dr Lorenzo Picinali
*SONICOM coordinator and on behalf of the SONICOM consortium*

IN THIS ISSUE

INTRODUCING THE TURRET LAB

In our last newsletter we teased the setup of our sophisticated new lab at Imperial College London by the **Audio Experience Design Team.** It has been tailor-made for measuring people's head-related transfer functions (HRTFs) that can be used to personalise their audio experiences.

The lab has now been active since the end of 2021 and our bank of HRTFs is steadily growing. If you're interested in having your HRTF measured, get in touch with **Dr Lorenzo Picinali**.
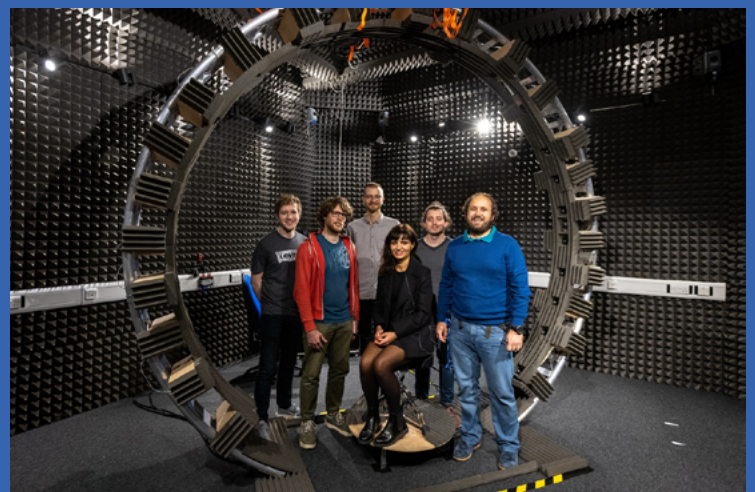
SONICOM AT IMPERIAL LATES

SONICOM researchers recently exhibited at one of Imperial College London's "Lates" public engagement events. We chatted to visitors about SONICOM, including giving them the opportunity to experience binaural audio and a tour of our Turret Lab, as well as a talk about the future of sound.

For those who missed it, we've put together a video capturing a flavour of the event.

>WATCH THE VIDEO

MEET AABBA

AABBA - not the latest Swedish pop group, but a group of scientists dedicated to collaboration and building connections to promote exploration and development of different models of human hearing and their applications.

Set up in 2009 by Professor Jens Blauert, the group has grown to include members across 14 countries and is now led by SONICOM's Dr Piotr Majdak.

>LEARN MORE ABOUT AABBA
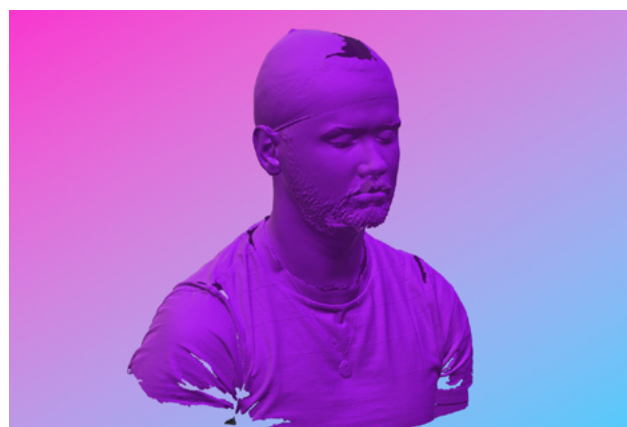
TAKE PART IN SONICOM'S RESEARCH

Our Science Communication Officer, Harry Jenkins, got stuck into SONICOM's research by having his HRTF measured and head 3D scanned.

"What better way to get to know a project than to have a 3D rendering of your head created as part of it?"

>READ ABOUT HARRY'S EXPERIENCE AND HOW YOU CAN GET INVOLVED

SONICOM'S REVERB STUDY

Want to help further SONICOM's research? Take part in our Reverb Study! This is a listening test looking at how much we can simplify ray-tracing-based reverberation simulations. It only takes 30 minutes all you need is a relatively silent room and a decent pair of headphones.

**>LEARN MORE AND TAKE PART IN THE REVERB STUDY**

PUBLISHED WORK

Sonic Interactions in Virtual Environments

This book tackles the design of 3D spatial interactions in an audio-centered and audio-first perspective, providing the fundamental notions related to the creation and evaluation of immersive sonic experiences.

It features state-of-the-art research on real-time auralization, sonic interaction design in VR, quality of the experience in multimodal scenarios, and applications.

Contributors and editors include interdisciplinary experts from the fields of computer science, engineering, acoustics, psychology, design, humanities, and beyond.

THE AUDITORY MODELING TOOLBOX
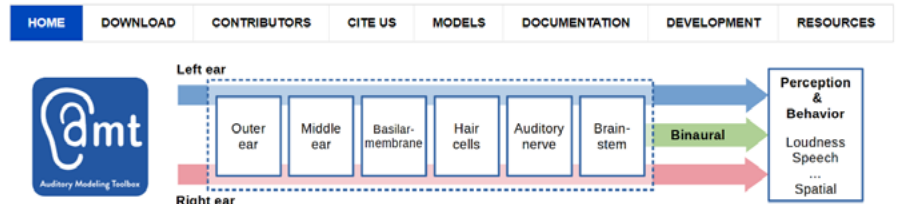
The Matlab/Octave toolbox for auditory modeling.

AMT 1.x: A toolbox for reproducible research in auditory modeling

The Auditory Modeling Toolbox (AMT) is a MATLAB/Octave toolbox for the development and application of computational auditory models with a particular focus on binaural hearing.

The recently released AMT 1.1 includes over 60 models and is freely available as an open-source package

A comparative study of eight human auditory models of monaural processing that are openly accessible in the AMT has already been produced.

We discuss the considerations required to make the model outputs comparable to each other, as well as the results for various model processing stages or their equivalents.

UPCOMING WORK

Advances in Fundamental and Applied Research on Spatial Audio

This book will offer a collection of recent research carried out in the field of spatial audio, ranging from the fundamental psychoacoustic perspective of spatial hearing, via cognitive aspects of spatial auditory cognition, to the applicative perspective of spatial-audio reproduction over headphones. World leaders in these domains will contribute articles to provide a clear state-of-the-art of this rapidly developing field.

Never miss a beat

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