Research Internship

Mixed-method research for interactive audio quality evaluation.

Description:

Recent trends in research have sought to use Interactive virtual environments (IVEs) as a controlled lab environment to evaluate several human behavioral and cognitive processes. For audio quality evaluation, many challenges remain to understand the impact of interactive environments on our perceptual quality judgments. Moreover, many real-time acoustic auralization techniques depend on models where no ground-truth reference is available. Hence comparing other physiological and cognitive factors may yield further insight into the construction of a task-based paradigm for future quality evaluation studies in interactive settings.

In this internship, you will be assisting in the configuration, execution, and analysis of a mixed-method study to understand observable perceptual and behavioral differences across subjects performing different tasks inside VR. The tasks (t.b.d) shall be focused on auditory perception within high-quality multimodal IVEs, to understand the impact of audio rendering on exploration, behavior, and quality judgments.

The Work:

- Background work on task-based paradigms for behavioral evaluations.
- Implementing the required acoustic rendering features and parameters for evaluation.
- Assisting with the implementation of the required quality metrics using available libraries for physiological and behavioral in Unity.
- Assisting with data collection and analysis of the study.

You Will Gain:

- Opportunity to learn/improve coding and programming skills and contribute to an ongoing project (https://qoevave.github.io)
- Knowledge in subjective test design, implementation, and statistical analysis.
- Practical experience with state-of-the-art virtual reality hardware and software.

Desired Prerequisites:

- C# Programming skills (basic – intermediate level).
- Experience in statistical computing and data visualization
- Eager to learn about virtual reality and audio quality evaluation.

Supervisor
M.Sc. Thomas Robotham
E: thomas.robotham@audiolabs-erlangen.de

Professor
Prof. Dr. ir. Emanuël Habets