

## Internship Institut *∂*'Alembert – LAM Team – 2024

### Room acoustics as core mechanics in VR and AR gameplay

Place: LAM team, Institut Jean le Rond d'Alembert, Jussieu (Sorbonne Univ.), Paris

Duration: 4-6 months

Start: March (can adapt to school schedules)

Supervision: David Poirier-Q.<sup>1</sup> (researcher)

Co-supervision: Brian F.G. Katz<sup>2</sup> (research director)

Salary: Following university policy.

#### Context and goal

Part of the LAM team, the Sound and Space group conducts research on room acoustics, spatial sound and interaction in mixed realities. This internship stems from two research projects, focusing on real-time acoustics for blind exploration, and on the creation of natural interactions in virtual environments. The aim of the internship is to design, implement, and run tests on mixed reality games whose core mechanics is centred on room acoustics.

#### Expected results

The intern will be tasked to identify a workflow to support the creation of plausible real-time room acoustics rendering in virtual reality. Using that workflow, the intern will then be in charge of designing and implementing one or several game prototypes for internal testing. The intern will then further polish one of those prototypes into a minimalist yet complete game. If time allows, the intern will be in charge of designing and running an experiment around this game, to assess the usability of VR/AR technologies for training users to better appreciate the acoustics of a place.

#### Sought skills

Unity, C#, Max/MSP, hunger for Virtual and Augmented Reality technologies.

#### Contact

David Poirier-Q. ([david.poirier-quinot@sorbonne-universite.fr](mailto:david.poirier-quinot@sorbonne-universite.fr))

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<sup>1</sup>David Poirier-Q. website: <https://pyrapple.github.io>.

<sup>2</sup>Brian F. G. Katz website: <http://www.lam.jussieu.fr/Membres/Katz/index.php?page=accueil>.