Post-doc position in virtual reality

Subject: Auditory and multisensory perception for user experience in shared virtual environments

Keywords: Virtual reality, Multisensory substitution, Auditory Feedbacks, Co-presence, Sensory Immersion, User Experience

Job description

The present post-doctoral project is done in the frame of the **2 years FUI United-VR** project whose goal is to develop tools for the design and management of VR video game content, so virtual reality arcades can offer games where the players are spread over several sites.
The objective of the recruited postdoctoral researcher will be to optimize the players' experience. As players will not all share the same physical space, particular attention will be paid to the feeling of co-presence. In addition, players will physically move into large rooms equipped with both real and virtual walls and obstacles. Affordance of virtual obstacle avoidance will therefore be addressed as well.
Specific tasks include:

1. Designing experimental protocols to determine the role of each sensory modality on the user experience, especially the auditory one. Four criteria will be evaluated: co-presence, spatial presence, sensory immersion, and self-embodiment. Independent variables will include quality of graphical animation rendering, audio-graphical desynchronization, and quality of tracking systems.
2. Analyzing experimental results to establish recommendations about acceptable technological limits in terms of graphical degradation, motion tracking, and animation rendering.
3. Designing auditory feedbacks that fit the game universe, to counterbalance the technological limits and guide the players to avoid virtual obstacles.
4. Write scientifical papers and reports for the industrial partners.

The position lies within the Interactivity to Read and Play research group of the CEDRIC laboratory within the Computer Science Department of the CNAM. The post-doc will benefit from a close interaction with the industrial partners of the project, including Spirops, G4F, Persistance, Stormancer and SolidAnim. Therefore, the position offers the opportunity to confirm lab results during prototype validation in real context.

Requirements

The candidate should have a Ph.D. in one or more of the following areas: human-computer interaction, acoustics, perception sciences, cognitive psychology. Knowledge in human factors will be more than appreciated for designing and conducting experiments with human participants. Good programming skills is desired. Prior knowledge of 3D audio or mixed / immersive real-world environments is not mandatory but is considered an added value (unity framework or others).

Starting date: as soon as possible (early Spring 2020)

Duration: 20 to 24 months

Net salary: determined on individual basis, starting 2200€ / month

Complements: Although it is not a requirement and does not factor into the selection process, the position also offers the opportunity for interested candidates to participate in the teaching mission of ENJMIN (National School of Game and Digital Media : http://www.cnamenjmin.fr/en/introduction/presentation), in either Engineering or Master programs.

Location : CNAM-CEDRIC (Paris, 3ème arr.)

Language : English or French

How to apply : Please submit a CV, a cover letter, and any document describing the quality and adequacy for the profile to Tifanie BOUCHARA (tifanie.bouchara@lecnam.net, phone : +33(0)1 40 27 25 98, mobile : +33(0)6 25 31 49 75)

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