

2022-05170 - Inria and InterDigital - Haptic "super-powers" for improving the exploration of metaverse

Contract type : Fixed-term contract
Level of qualifications required : PhD or equivalent
Fonction : Tempary Research Position

About the research centre or Inria department

The Inria Rennes - Bretagne Atlantique Centre is one of Inria's eight centres and has more than thirty research teams. The Inria Center is a major and recognized player in the field of digital sciences. It is at the heart of a rich R&D and innovation ecosystem: highly innovative PMEs, large industrial groups, competitiveness clusters, research and higher education players, laboratories of excellence, technological research institute, etc.

Context

The "Nemo.ai" laboratory is a joint laboratory dedicated to research and applications in Metaverse and Virtual Reality, gathering Inria (the French national research institute for computer science, www.inria.fr) and Interdigital company (www.interdigital.com/).

Assignment

The present postdoc aims at investigating novel usages of haptic technologies for augmenting the user experience in metaverse and virtual worlds. Haptic interfaces correspond to tactile and force-feedback systems providing means of for physical and tangible interactions within virtual reality systems. This postdoctoral program represents a highly exploratory journey meant to reveal novel usages of haptic feedback for augmenting the perceptual or interaction capabilities of user in virtual environments, enabling some kind of novel "super-powers". For instance, [Willett and al. 2022] provide examples of "superpower" metaphor using the human visual system to enhance users' cognitive abilities. In our case, the sense of touch could notably be used to sense the invisible properties of the environment around users, or to inform about incoming events/alerts. The successful post-doctoral fellow will therefore conceive, implement, and evaluate such novel haptic approaches, progressively defining a taxonomy of "haptic super-powers".

Main activities

To sum up with, the role of the post-doctoral fellow in this project will be:

- To invent novel haptic and VR approaches meant to augment 3D interactions in virtual environments and increase the capabilities or perceptions of the user
- To implement the subsequent interactive techniques and haptic rendering algorithms
- To conduct human experiments to assess the novel techniques in terms of either user experience or 3D task performance
- To analyze the experimental data of participants
- To write scientific papers
- To present the research in project meetings and conferences

Benefits package

- Subsidized meals
- Partial reimbursement of public transport costs
- Possibility of teleworking (90 days per year) and flexible organization of working hours
- Partial payment of insurance costs

Remuneration

Monthly gross salary between 2653 € and 4150 € depending on work experience

General Information

- **Theme/Domain :** Interaction and visualization
Instrumentation et expérimentation (BAP C)
- **Town/city :** Rennes
- **Inria Center :** Centre Inria de l'Université de Rennes
- **Starting date :** 2023-02-01
- **Duration of contract :** 2 years
- **Deadline to apply :** 2023-06-30

Contacts

- **Inria Team :** HYBRID
- **Recruiter :**
Lecuyer Anatole / anatole.lecuyer@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

Instruction to apply

Please submit online : your resume, cover letter and letters of recommendation eventually

Defence Security :

This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy :

As part of its diversity policy, all Inria positions are accessible to people with disabilities.

Warning : you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.