



Offre n°2024-07476

PhD Position F/M Understanding and Improving Human Interactions in Social eXtended Reality

Le descriptif de l'offre ci-dessous est en Anglais

Type de contrat : CDD

Niveau de diplôme exigé : Bac + 5 ou équivalent

Fonction : Doctorant

Niveau d'expérience souhaité : De 3 à 5 ans

A propos du centre ou de la direction fonctionnelle

The Inria Centre at Rennes University is one of Inria's nine centres and has more than thirty research teams. The Inria Centre 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 SMEs, large industrial groups, competitiveness clusters, research and higher education players, laboratories of excellence, technological research institute, etc.

Contexte et atouts du poste

This PhD position is framed in the context of a European project META-TOO (A transfer of knowledge and technology for investigating gender-based inappropriate social interactions in the Metaverse). The META-TOO project is placed at the intersection of VR/AR uptake, and social, behavioral and technological research. In this fast-evolving digital environment, META-TOO addresses the urgent matter of abusive behavior within the virtual space, doing that while facilitating the collaboration (twinning), of three distinguished institutions in Europe: and Kapodistrian University of Athens, Greece (NKUA), National Institute for Research in Digital Science and Technology, Rennes, France (Inria) and Fundació de Recerca Clínic Barcelona, Spain (IDIBAPS). This initiative not only contributes to apply research in the XR field but also commits to addressing misbehavior that emanate from social interactions in the physical world that now transcend into the digital and virtual social spaces.

META-TOO addresses the issue of online misconduct in virtual spaces, taking a significant step towards the creation of a more inclusive and equitable digital world. The Metaverse, though a digital domain, is increasingly mirroring society itself and thus, efforts to combat harassment and promote respectful interactions in this space have far reaching societal consequences. META-TOO's work empowers VR/AR users to deter and address inappropriate behavior, directly contributing to their well-being and safety in the Metaverse.

Mission confiée

To address the subject of creating safe and inclusive online interaction in immersive applications, the teams at Inria will focus on two main research topics: the impact of avatar and environment characteristics on the perception of inappropriate behaviour of VR users, and design and evaluation of interaction techniques to cope with such behaviour. The **first topic** will include exploration of avatar characteristics, such as realism of appearance and movement, animation, gender, ethnicity, attraction, etc. Another aspect to consider will be the virtual environment (e.g., size, population density, social setting, and context). In the **second topic**, we will explore interactive methods to enable users to initiate their response when they detect inappropriate behaviour of others. Some potential research venues in this topic range from modulating the avatar appearance or dynamically controlling personal space distances between themselves and other avatars. The research will also include **perceptual evaluation** in the form of collecting subjective responses (questionnaires), physiological measures (e.g., eye-tracking, GSR) and behavioural responses of participants, including their impact on interpersonal distance (e.g., stop distance, analysis of the walking trajectory).

References

- Freeman, S. Zamanifard, D. Maloney, and D. Acena (2022) Disturbing the peace: Experiencing and mitigating emerging harassment in social virtual reality. Proceedings of the ACM on Human-Computer Interaction, 6(CSCW1):1–30.
- Patotskaya, Y., Hoyet, L., Olivier, A. H., Pettré, J., & Zibrek, K. (2023). Avoiding virtual humans in a constrained environment: Exploration of novel behavioural Measures. Computers & Graphics, 110, 162-172.
- Cheymol, A., Lécuyer, A., Normand, J. M., & Argelaguet, F. (2023). Beyond my Real Body: Characterization, Impacts, Applications and Perspectives of "Dissimilar" Avatars in Virtual

- Reality. IEEE Transactions on Visualization and Computer Graphics. vol. 29, no. 11, pp. 4426-4437
- Bönsch, S. Radke, H. Overath, L. M. Asché, J. Wendt, T. Vierjahn, U. Habel, and T. W. Kuhlen (2018). Social vr: How personal space is affected by virtual agents' emotions. IEEE Conference on Virtual Reality and 3D User Interfaces (VR), pp. 199–206.

Principales activités

In the context of the project META-T00, the PhD will help with formulating the research hypotheses, designing and conduct experiments in VR/AR and analysing the results. The target is to publish the studies at the international conferences and journals and it is expected that the student will be able to take the lead in the paper production. The student will be given autonomy to explore the ideas in the context of the project and implement them through guided supervision. The student will also be involved in team activities and will be able to get support from the team members.

Compétences

The candidate must have a master degree (or equivalent), with a preference in mixed reality or human computer interaction. In addition, the candidate should be comfortable with as much following items as possible:

- Experience in 3D/VR/AR applications (e.g. Unity3D).
- Experience in evaluation methods and controlled users studies.
- Good knowledge in programming languages (e.g. C#, C++).
- Good spoken and written English.
- Good communication skills.

Avantages

- 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

Rémunération

Monthly gross salary amounting to 2100 euros for the first and second years and 2190 euros for the third year

Informations générales

- **Thème/Domaine** : Interaction et visualisation Plateformes expérimentales logiciel (BAP E)
- **Ville** : Rennes
- **Centre Inria** : [Centre Inria de l'Université de Rennes](#)
- **Date de prise de fonction souhaitée** :2024-09-01
- **Durée de contrat** :3 ans
- **Date limite pour postuler** :2024-07-15

Contacts

- **Équipe Inria** : [HYBRID](#)
- **Directeur de thèse** : Argelaguet Sanz Fernando / ferran.argelaguet@inria.fr

A propos d'Inria

Inria est l'institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

Attention: Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

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

Sécurité défense :

Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le

décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :

Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.