



Offer #2025-09180

PhD Position F/M The role of rapport in human conversational agent interaction: Modeling conversation to improve task performance in human agent interaction

The offer description below is in French

Level of qualifications required : Graduate degree or equivalent

Other valued qualifications : Ecole d'ingénieur (computer science or engineering degree)

Fonction : Tempary Research Position

Level of experience : Recently graduated

Context

The objective of this project is to build embodied conversational agents (also known as ECAs, or virtual humans, or chatbots, or multimodal dialogue systems) that have the ability to engage their users in both social and task talk, where the social talk serves to improve task performance. In order to achieve this objective, we model human-human conversation, and integrate the models into ECAs, and then evaluate their performance.

This project is located at the prestigious computer science institute INRIA in downtown Paris. It takes place in the context of the PRAIRIE Institute for Interdisciplinary Research on AI - one of the four 3IA institutes launched by the French government in 2019. For more information see

<<https://www.inria.fr/fr/inria-participe-la-creation-de-linstitut-prairie>> and
<<https://prairie-institute.fr/>>

Assignment

The doctoral student selected for this project will acquire a broad range of skills in the analysis and synthesis of conversational behavior. They will explore how to enhance the social capabilities of Large Language Models (LLMs) by developing methods for building and maintaining rapport in human-AI interactions. The research will involve building and annotating a corpus focused on the social aspects of human conversation within a specific domain, followed by data analysis to derive computational models informed by both empirical findings and prior literature. These models will be refined and integrated into LLM-based

conversational models, with a focus on preserving task performance while enabling socially aware behavior. The developed models will then be integrated into an Embodied Conversational Agent (ECA) to assess their impact on system performance. Potential applications include digital assistants, educational tools, and AI systems in healthcare.

Main activities

- Design and carry out experiments
- Analyze their results
- Implement modules in working socially-aware dialogue systems
- Write articles
- Present work in conferences
- Write a doctoral thesis

Skills

Technical skills and level required :

Solid competence in deep learning applied to language (prior experience working with dialogue systems is a strong plus), competence in statistics, advanced competence in programming in language such as Python and C++, and use of tools such as Tensorflow and Pytorch.

Languages :

French and English

Relational skills :

ability to work in a team, and collaborate with others from different disciplines and backgrounds.

Other valued appreciated :

Theoretical background in one or several of the following: cognitive science, linguistics, conversational analysis, sociolinguistics, social cognition, learning science.

Benefits package

- Restauration subventionnée
- Transports publics remboursés partiellement
- Congés: 7 semaines de congés annuels + 10 jours de RTT (base temps plein) + possibilité d'autorisations d'absence exceptionnelle (ex : enfants malades, déménagement)
- Possibilité de télétravail et aménagement du temps de travail
- Équipements professionnels à disposition (visioconférence, prêts de matériels informatiques, etc.)

- Prestations sociales, culturelles et sportives (Association de gestion des œuvres sociales d'Inria)
- Accès à la formation professionnelle
- Sécurité sociale

General Information

- **Theme/Domain** : Language, Speech and Audio
Data production, processing, analysis (BAP D)
- **Town/city** : Paris
- **Inria Center** : [Centre Inria de Paris](#)
- **Starting date** : 2025-09-01
- **Duration of contract** : 3 years
- **Deadline to apply** : 2025-08-21

Contacts

- **Inria Team** : [ALMANACH](#) (DIR-PRO)
- **Recruiter** :
Cassell Justine / justine.cassell@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.

The keys to success

- Passion for interdisciplinary research at the nexus of AI and Social Sciences
- Ability and desire to read prior work and to build upon it in one's own work
- Ability to work in a team and independently

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.

Instruction to apply

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.