



Offre n°2023-06629

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

Type de contrat : Fixed-term contract

Niveau de diplôme exigé : Graduate degree or equivalent

Autre diplôme apprécié : Ecole d'ingénieur (computer science or engineering degree)

Fonction : PhD Position

Niveau d'expérience souhaité : Recently graduated

Contexte et atouts du poste

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/>>

Mission confiée

The doctoral student chosen for this project will acquire a broad range of skills in the analysis and synthesis of conversational behavior. S/he will build a corpus of data on the social aspects of human-human conversation within a particular domain, and annotate and analyze those data. He or she will derive computational models from the results of the data analysis as well as based on relevant prior literature, and refine those models using structural equation modeling and other tools. The doctoral student will integrate the computational models of social phenomena into a functioning ECA using machine learning approaches to dialogue systems, such as deep reinforcement learning and LSTM (among others), and will evaluate whether integrating the new models improves the performance of the ECA. Applications of the work will be as varied as virtual personal assistants such as Alexa, Siri, and Google Now and intelligent tutoring systems.

For more information on the project, potential candidates should look at the SARA (Socially-Aware Robot Assistant) website at <<http://articulab.hcii.cs.cmu.edu/projects/sara/>> and read some of the publications associated with the project, here <<http://articulab.hcii.cs.cmu.edu/publications/>>

Principales activités

- 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

Compétences

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.

Avantages

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (after 6 months of employment) and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training

Informations générales

- **Thème/Domaine** : Language, Speech and Audio Statistics (Big data) (BAP E)
- **Ville** : Paris
- **Centre Inria** : [Centre Inria de Paris](#)
- **Date de prise de fonction souhaitée** : 2024-03-01
- **Durée de contrat** : 3 years
- **Date limite pour postuler** : 2024-06-30

Contacts

- **Équipe Inria** : [ALMANACH](#)
- **Directeur de thèse** :
Cassell Justine / justine.cassell@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.

L'essentiel pour réussir

- 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

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

Documents required in the candidate's file :

- letter of motivation describing how the candidate's past experience prepares him/her to work on this topic
- CV
- A summary of grades (relevé de notes de Master)

- Names and contact information for 2 or 3 people who can write letters of recommendation

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.