

2022-04457 - Embodied dialogue System Research Engineer: Multimodal Dialogue that achieves both Task and Social Goals in Human-Computer dialogue

Type de contrat : CDD

Contrat renouvelable : Oui

Niveau de diplôme exigé : Bac + 5 ou équivalent

Fonction : Ingénieur scientifique contractuel

Niveau d'expérience souhaité : De 3 à 5 ans

Contexte et atouts du poste

The objective of this project is to build embodied conversational agents (also known as ECAs, or virtual humans, chatbots, or multimodal dialogue systems) that have the ability to engage their users using language and nonverbal behavior, 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 using deep learning methods, integrate the models into ECAs, and then evaluate their performance.

The research engineer chosen for this project will work in a multi-disciplinary team to develop a state of the art Embodied Conversational Agent system (including using existing code) that can engage in natural conversations with people. It will be demonstrated on a large screen at Inria (and also in other venues), and also used for human-computer interaction experiments.

Mission confiée

1. The engineer chosen for this project should have a broad range of skills including at least several of the following:
2. Strong programming skills, particularly in python and java, in order to manage and build upon our existing conversational agents code base. Ideal candidates should have prior experience in building multimodal real-time machine learning pipelines.
3. Implementing modules for speech recognition, intention recognition, dialogue management, and natural language generation, adapting some off-the-shelf products, and developing others.
4. Interfacing the dialogue system modules with competence modules such as intelligent tutors or recommendation systems.
5. Working with architectures that include nonverbal behavior recognition as well as speech recognition, and with architectures that include an animated agent implemented in Unity for nonverbal behavior generation.

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

Main activities :

- Clean datasets collected by other members of the team
- Build models of human behavior
- Improve the existing pipeline of the conversational agent and develop new modules
- Develop some Wizard of Oz modules for human-computer interaction experiments with the agent

Compétences

Technical skills and level required: Solid competence in deep learning applied to dialogue systems, Solid competence in multimodal systems, advanced competence in programming in languages such as Python and Java, and use of tools such as Tensorflow and Pytorch.

Languages: French, English

Relationship skills: Ability to work in a team, and collaborate with others from different disciplines and backgrounds. Ability to work independently. Ability to manage other team members.

Other valued and appreciated: Background in one or several of the following: cognitive science, linguistics, conversational analysis, sociolinguistics, social cognition, learning science, social robotics

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

Rémunération

The remuneration is based on the diploma and the experience

Informations générales

- **Thème/Domaine :** Langue, parole et audio
Ingénierie technique et de production (TIC) (BAP E)
- **Ville :** Paris
- **Centre Inria :** CRI de Paris
- **Date de prise de fonction souhaitée :** 2022-03-01
- **Durée de contrat :** 12 mois
- **Date limite pour postuler :** 2022-06-30

Contacts

- **Equipe Inria :** COML
- **Recruteur :**
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 200 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3500 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 180 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 the Social Sciences, ability to work as part of a multi-disciplinary team with cognitive scientists and computer scientists.

Consignes pour postuler

In order to apply, please send:

- (1) a cover letter (lettre de motivation) describing your relevant experience,
- (2) a CV, and
- (3) the names and contact information of 3 people who can write letters of reference for you.

PLEASE NOTE: WE WILL NOT ACCEPT ANY LETTERS OF RECOMMENDATION SENT TO US BY THE CANDIDATE - YOU MUST ONLY SEND CONTACT INFORMATION FOR YOUR REFEREES.

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.

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.