Offer #2022-04419

Post-Doctoral Research Visit F/M Socially-Aware Embodied Conversational Agents: Achieving Task and Social Goals in Human-Computer Conversation

Contract type : Fixed-term contract

Renewable contract : Yes

Level of qualifications required : PhD or equivalent

Fonction : Post-Doctoral Research Visit

Level of experience : From 3 to 5 years

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. Depending on the candidate's experience, she or he can be hired as postdoc, or as "young researcher", which is a more advanced position.

Assignment

The post doc chosen for this project should have a broad range of skills including at least several of the following:

1. Experience with analysis of human-human conversational behavior, as the team relies on human behavior as the basis for the implementation of conversational agents. A plus would be experience in gathering and constructing corpora as the team routinely gathers and annotates data on the interaction between social and task aspects of human-human conversation.
2. Experience building statistical and computational models of human data, particularly conversational data, based both on our own analyses and on relevant prior literature, using tools such as structural equation modeling, as well as neural network-based approaches..
3. Experience with implementing and managing functioning embodied conversational agents, social robots or spoken dialogue systems, using machine learning approaches to dialogue systems, such as deep reinforcement learning and LSTM (among others).

For a better knowledge of the proposed research subject:

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/>

Responsibilities:

The person recruited is responsible for conducting cutting-edge research in the field of embodied conversational agents, including helping to manage the research team of PhD and Masters students.

Main activities

Main activities (5 max):

- Build models of human behavior
- Design and carry out experiments
- Analyze their results
- Write articles & present work in conferences
- Improve the existing pipeline of the conversational agent

Additional activities (3 maximum):

- Help to manage research team
- Prepare demos for conferences and visitors

Skills

Competences Techniques: 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.

Langue: French, English

Competences relationnelles: 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.

Compétences additionnelles appreciées: background in one or several of the following: cognitive science, linguistics, conversational analysis, sociolinguistics, social cognition, learning science

Benefits package

- 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

Remuneration

The remuneration will be established according to the profile and the experience of the candidate

General Information

- **Theme/Domain :** Language, Speech and Audio Information system (BAP E)
- **Town/city :** Paris
- **Inria Center :** Centre Inria de Paris
- **Starting date :** 2022-04-01
- **Duration of contract :** 2 years
- **Deadline to apply :** 2022-08-31

Contacts

- **Inria Team :** COML
- **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 to work as part of a team

> **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

In order to apply, please send

(1) a cover letter (lettre de motivation) describing your relevant experience,
(2) a CV, and (3) the names,
(3) 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.

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.