INSTITUT DES SYSTEMES INTELLIGENTS ET DE ROBOTIQUE
OFFRE D'EMPLOI

Intitulé du poste : Multimodal Machine Learning for User Modeling and Profiling

Type de poste : ☒ Post–Doc ☐ Ingénieur·e ☐ Autre : …

Date de début de contrat : à partir de septembre 2024

Durée du contrat : 24 mois

Quotité de travail : ☒ 100% ☐ autre précisez (50 % minimum) :

Niveau d'études souhaité : doctorat

Montant rémunération : standard sur grille

Laboratoire d'accueil : ISIR (*Institut des Systèmes Intelligents et de Robotique*), Campus Pierre et Marie Curie, 4 place Jussieu, 75005 Paris.

Personne à contacter

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Candidature :
☐ En ligne. Lien vers le portail emploi :
☒ Par mail. Envoyer votre candidature par mail, avec [*Application Post-Doc Multimodal Representation*] en objet avec
- un CV avec 2 références (les lettres de recommandation sont également les bienvenues) ;
- un résumé d'une page des antécédents et des intérêts en matière de recherche ;
- au moins trois articles (publiés, acceptés pour publication ou préimprimés) démontrant une expertise dans un ou plusieurs des domaines mentionnés ;
- et un résumé de la thèse de doctorat et date prévue d'obtention du diplôme (pour ceux qui poursuivent actuellement un doctorat).

Date limite de dépôt de la candidature : 17 mai 2024

Description du poste (en anglais)

Objectives:
Personalized Human-Machine Interaction systems aim to provide tailored experiences that cater to the individual needs and preferences of human users. To achieve this, these systems rely on user models derived from user profiles and observations of human actions. However, adapting to changing contexts or individuals presents numerous challenges, including multimodal data collection and interpretation, privacy concerns, and transparency issues. There is a pressing need to develop new representations of human behavior that can capture the diversity among users while safeguarding their privacy.

This post-doctoral position is centered on the development of human-centered machine learning techniques aimed at personalized adaptation in interactive applications, with an emphasis on

human-robot interaction. Recent strides in artificial intelligence, especially in the domain of deep learning, have unlocked advanced methodologies for user profiling and adaptation. Notably, representation learning (deep learning) and reasoning (Large Language Models, LLMs) have emerged as influential approaches, offering promising avenues for comprehending user behavior and providing tailored experiences in interactive applications. Rooted in a human-centered approach, the position will address ethical issues inherent in both the modeling process (e.g., biases, privacy concerns) and experimental design (e.g., working with vulnerable participants)

This position is for 24 months contract, but there is a possibility to be extended depending on the performance and circumstances.

Responsibilities:
- Develop advanced user modeling techniques to accurately represent user preferences, behaviors, and characteristics based on interaction data with AI systems.
- Investigate methods for integrating various types of data, including user interactions, feedback, and contextual information, to build comprehensive user profiles.
- Explore innovative approaches for dynamic user modeling that can adapt to changes in user preferences and behavior over time.
- Address privacy concerns by developing techniques for anonymizing or obfuscating sensitive user data while preserving model effectiveness.
- Collaborate with interdisciplinary teams including computer scientists, psychologists, and designers to ensure the usability and effectiveness of developed techniques.
- Publish research findings in top-tier conferences and journals in the field of Human-Machine Interaction and Machine Learning

Requirements:
The ideal candidate must have a PhD degree and a strong background in machine learning, human-machine interaction or robotics.

The successful candidate should have:
- Experience in human-machine interaction
- Good knowledge of Machine Learning Techniques
- Good knowledge of experimental design and statistics
- Excellent publication record
- Strong skills in Python
- Willing to work in multi-disciplinary and international teams
- Good communication skills

Application
Interested candidates should submit the following by email in a single PDF file to: mohamed.chetouani[@]sorbonne-universite.fr with the subject: Application Post-Doc Multimodal Representation
1. Curriculum vitae with 2 references (recommendation letters are also welcome)
2. One-page summary of research background and interests
3. At least three papers (either published, accepted for publication, or pre-prints) demonstrating expertise in one or more of the areas mentioned above
4. Doctoral dissertation abstract and the expected date of graduation (for those who are currently pursuing a Ph.D)

Application's deadline: **May 17, 2024.**

Sous la co-tutelle de :