Offre n°2025-08870

Doctorant F/H How curiosity enhances learning across childhood and adolescence: Models and experimentation of the role of metacognition and agency

Type de contrat : Fixed-term contract

Niveau de diplôme exigé : Graduate degree or equivalent

Fonction : PhD Position

A propos du centre ou de la direction fonctionnelle

The Inria center at the University of Bordeaux is one of the nine Inria centers in France and has about twenty research teams.. The Inria centre is a major and recognized player in the field of digital sciences. It is at the heart of a rich R&D and innovation ecosystem: highly innovative SMEs, large industrial groups, competitiveness clusters, research and higher education players, laboratories of excellence, technological research institute...

Contexte et atouts du poste

This PhD position happens in the context of the European project DevCur, which summary is as follows.

In a constantly changing world full of uncertainties, one way to adapt to unforeseen circumstances is by harnessing lifelong learning driven by curiosity - the desire to acquire information about the world. Initial research suggests that curiosity not only enhances learning but also metacognitive awareness of one’s own learning progress

strengthens curiosity. However, the reciprocal influences between curiosity-based learning and metacognition, particularly during late childhood and adolescence when both abilities continue to develop, remain poorly understood. To address this gap in the existing literature, our interdisciplinary approach aims to explore the bidirectional connections between curiosity-based learning and metacognition during this crucial developmental period. Additionally, late childhood and adolescence is marked by increasing needs of agency, which can boost the curiosity effects on learning because the learner is in control of the learning material. We will therefore seek to study how the protracted development of metacognition enhances the efficiency of curiosity-based learning, especially in situations of high agency. To this end, we will conduct a series of five experiments, leveraging complementary skills and approaches of world-leading research teams around curiosity and development. We will combine different methodological approaches, including behavioral experiments and functional neuroimaging, training studies, and longitudinal assessments to investigate how across-person differences and within-person changes in metacognition and agency contribute to curiosity-based learning across late childhood and adolescence. We will leverage established and recently developed experimental and naturalistic paradigms from our labs to understand how metacognition affects curiosity-based learning across development. Furthermore, we will translate the lab-based findings from the proposed experiments to design pedagogical interventions that stimulate curiosity and metacognition in the classroom. This is a timely and innovative project as recent research provides all the building blocks needed for a step change in our understanding of the mechanisms of curiosity development. The complementary perspectives of the three pioneering teams (Cardiff, Bordeaux, Trier) provide a unique collaborative opportunity to combine parallel research domains to generate important discoveries on the development of curiosity- based learning with broad scientific and societal impact.

Mission confiée

The PhD candidate will formalize theories of the interaction between curiosity, metacognition and agency and how they develop. Then, these theories will lead to the design of several experimental paradigms aiming at testing their predictions, either by adaptation and extension of existing protocols (REF), or through the design of novel protocols.
The data collected in these experiments will be studies in the perspective of comptuational models, and potentially lead to updates of the theory and new experimentation.

The PhD candidate will strongly interact with other labs from the consortium (Univ. Cardiff, Univ. Trier) and participate to the associated collaborations (e.g. through co-design and analysis of data in experiments made in these labs).

Principales activités

- formalization of psychological and developmental theories of the interaction of curiosity, metacognition and agency
- Design and running of human experimental paradigma
- Analysis of data and computationam modeling
- Scientific paper writing and presentation
- Writing wide audience articles (e.g. blog post)
- Collaboration with international partners

Compétences

Computational modeling for cognitive sciences

General skills in AI

Knowledge of psychological theories of curiosity

Avantages

- Subsidized meal
- partial reimbursement of public transport costs
- possibility of partial teleworking and flexible organization of working hours
- professional equipment vilable (videoconferencing, loan of computer equipment...)
- social, cultural and sports events ans activities
- access to vocational training
- social security coverage

Rémunération

The gross monthly salary will be 2200€ and from 2026 will be 2300€ (before social security contributions and monthly witholding tax)

Informations générales

- **Thème/Domaine :** Robotics and Smart environments
- **Ville :** Talence
- **Centre Inria :** Centre Inria de l'université de Bordeaux
- **Date de prise de fonction souhaitée :** 2025-09-01
- **Durée de contrat :** 3 years

- **Date limite pour postuler :** 2025-05-31

Contacts

- **Équipe Inria :** FLOWERS
- **Directeur de thèse :**
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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'e?orce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

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

If you are interested by this job, please could you apply on website jobs.inria with the following documents :

- cv
- cover letter

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.