Job vacancy #2023-06513

Research Engineer Position in Social Cognition F/M: Neural correlates of social skills in middle childhood

Contract type: Fixed-term contract
Renewable contract: Yes
Level of qualifications required: Graduate degree or equivalent
Fonction: Temporary scientific engineer

Context

Social interaction among children is crucial for the proper development of cognitive and social skills. However, how children acquire the ability to form social bonds with their peers remains poorly understood. One possibility for exploring this phenomenon is to simultaneously measure the brain activity of two children during social interaction, a technique that is called hyperscanning. Managing the hyperscanning apparatus and analyzing the results using newer machine learning approaches will be the job of the research engineer hired for this position.

Assignment

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

- Creative skills to build adapt scientific tasks so that they can be used by children, in ways that permit successful brain recordings.
- Experience with managing neuroscience experiments with children, including the use of the PsychoPy software.
- Background in hyperscanning methods, particularly with functional Near-InfraRed Spectroscopy (fNIRS).
- Experience in neuroimaging data analysis, using machine learning tools for temporally-sensitive data, such as Random Forests, LSTM, etc.
- Interest in developmental psychology, education science, psycholinguistics, and/or embodied conversational agents

S/he will work in a multi-disciplinary team to design a new scientific task that encourages children to engage in natural conversations. S/he will carry out experiments and will analyze the results. S/he will collaborate with other researchers in the group to apply results to the understanding of social skills in children, and how to best support them.

Main activities

- Design scientific tasks
- Carry out experiments
- Analyze their results
- Apply results to understanding of social cognition in middle childhood

Skills

Technical skills and level required: Solid knowledge in neuroscience, background in neuroimaging techniques (e.g. fNIRS, EEG), and competence in programming in Python with machine learning experience. Experience with NIRx Aurora and Hyperscan software is a plus.

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.

Theoretical background in one or several of the following field is desirable: cognitive science, linguistics, sociolinguistics, psychology, computer science, or computational neuroscience.

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 and flexible organization of working hours (after 12 months of employment)
- 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**

- **Town/city**: Paris
- **Inria Center**: Centre Inria de Paris
- **Starting date**: 2023-08-01
- **Duration of contract**: 1 year
- **Deadline to apply**: 2023-12-31

**Contacts**

- **Inria Team**: AT-PRO
- **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.

**Instruction to apply**

**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.