



**Offer #2025-08819**

**Post-Doctoral Research Visit F/M Neural correlates of social interaction and its impact on performance in middle childhood**

**Contract type :** Fixed-term contract

**Renewable contract :** Yes

**Level of qualifications required :** Graduate degree or equivalent

**Fonction :** Post-Doctoral Research Visit

**Context**

Social interaction among children is crucial for the proper development of social and cognitive skills, as well as for proper brain development. However, the topic of how children acquire the ability to form social bonds with their peers remains understudied and therefore poorly understood. One possibility for exploring this question is to simultaneously measure the brain activity of two children during social interaction, a technique that is called hyperscanning. The inter-brain synchrony data elicited in this way can then be related to data on children's embodied interaction with one another, data on the strength of their social bonds, and data on their performance on a collaborative task. Analyzing and interpreting the results of these experiments,,using newer machine learning approaches, will be the job of the research engineers and postdocs hired for this position.

**Assignment**

The Post-Doc chosen for this project should have a broad range of analytic skills including at least several of the following:

Developing experimental methodologies that allow the rigorous collection of hyperscanning data.

Managing hyperscanning experiments, including the use of PsychoPy software to develop triggers to allow alignment of the different kinds of data (language, nonverbal behavior, inter-brain synchrony).

Knowledge of hyperscanning technologies, particularly functional Near-Infrared Spectroscopy (fNIRS). Familiarity with the NIRx system is a plus.

Analysis of hyperscanning neuroimaging data, using advanced statistics and machine learning methodologies for temporally-sensitive data, such as GLMM, Random Forests, LSTM, etc..

Experience in programming in Python and use of relevant architectures, software, and libraries, such as HyPyP.

The successful candidate will work in a multi-disciplinary team to conduct hyperscanning experiments with adults and children, and will be responsible for analyzing the resultant data, and for collaborating to write-up and publish the results.

## **Main activities**

- Design scientific tasks
- Carry out experiments
- Analyze their results
- Apply results to understanding of social cognition in middle childhood
- Participate in writing-up and publishing results

## **Skills**

Technical skills and level required: Solid knowledge of hyperscanning, 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 fields is required: cognitive science, linguistics, sociolinguistics, psychology, computer science, 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
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

## General Information

- **Theme/Domain** : Data production, processing, analysis (BAP C)
- **Town/city** : Paris
- **Inria Center** : [Centre Inria de Paris](#)
- **Starting date** : 2025-07-01
- **Duration of contract** : 12 months
- **Deadline to apply** : 2025-06-30

## Contacts

- **Inria Team** : [ALMANACH](#)
- **Recruiter** :  
Etling Sophie / [sophie.etling@inria.fr](mailto:sophie.etling@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

The successful candidate will: be able to collaborate successfully with interdisciplinary and international research teams, who are both co-present and at a distance. be able and ready to manage younger scholars and team members, such as masters and L2 students. be capable of working both independently and in tight collaboration with others. Posses a positive outlook and resilience in the face of inevitable research obstacles. wish to learn and listen. Experience in collecting and analyzing data using a variety of analytic methods is a real asset, as is a multidisciplinary background, involving both cognitive science and AI methods. The successful candidate should have a strong grasp of English and/or French, and be willing to work on learning the second language if not already mastered.

**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

### **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.