

Offer #2022-05593

Post-Doctoral Research Visit F/M EEG-Neurofeedback coupled with virtual reality and haptics for stroke rehabilitation

Contract type : Fixed-term contract

Level of qualifications required : PhD or equivalent

Fonction : Post-Doctoral Research Visit

About the research centre or Inria department

The Inria Centre at Rennes University is one of Inria's eight centres and has more than thirty 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 PMEs, large industrial groups, competitiveness clusters, research and higher education players, laboratories of excellence, technological research institute, etc.

Context

The HYBRID team at Inria Rennes (<https://team.inria.fr/hybrid/>) is seeking a highly qualified young researcher with engineering experience and motivation in Brain-Computer Interface and real-time Electro-EncephaloGraphy (EEG) processing. The project aims at improving upper limb function after stroke by using EEG-Neurofeedback coupling with Virtual Reality and haptic interfaces.

Assignment

This position is opened by Inria, Rennes, France, within the frame of a collaborative project aiming at combining several neuroimaging methods (EEG, fMRI, fNIRS) in order to improve the state-of-the-art in brain rehabilitation. The used methodological paradigm is neurofeedback with close connections to Brain-Computer Interfaces (BCI), visualization and medical image and signal processing. In the scope of the project, novel computational/statistical models, signal processing, empirical protocols and visualizations will be proposed and studied, partly via their computational implementations and tested on ambitious clinical protocols.

Main activities

The role of the post-doctoral fellow in this project will be:

- To design all or part of an EEG-Neurofeedback platform and couple it with Virtual Reality interfaces and haptic devices
- To participate to experimental and/or clinical trials to assess the effectiveness of the novel approaches in improving motor imagery or upper limb motor function in stroke patients.
- To analyze the EEG data of participants.
- To write scientific papers.
- To represent the team in various meetings and conferences.

Skills

Candidate should hold a PhD in Computer Science/Neurosciences. He/she should demonstrate relevant experience with EEG-NeuroFeedback or EEG/BCI, with programming (MATLAB, R, Python), and/or with the design of Virtual Reality tools or haptic devices.

Benefits package

- Subsidized meals
- Partial reimbursement of public transport costs
- Possibility of teleworking (90 days per year) and flexible organization of working hours
- Partial payment of insurance costs

Remuneration

Monthly gross salary amounting to 2 746 euros

General Information

- **Theme/Domain** : Interaction and visualization Information system (BAP E)
- **Town/city** : Rennes
- **Inria Center** : [Centre Inria de l'Université de Rennes](#)
- **Starting date** : 2023-02-01
- **Duration of contract** : 1 year, 11 months
- **Deadline to apply** : 2023-06-30

Contacts

- **Inria Team** : [HYBRID](#)
- **Recruiter** :
Lecuyer Anatole / anatole.lecuyer@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.

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

Please submit online : your resume, cover letter and letters of recommendation eventually

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.