**Responsibilities**

- Select and download appropriate open fMRI datasets (e.g. NARPS and HCP)
- Process fMRI data using a variety of neuroimaging analysis software packages (SPM, FSL, AFNI, nipype)
- Develop statistical or data science approaches for practical neuroimaging multiverse analyses
- Implement the proposed methods as tools for the neuroimaging community, interfacing with existing software packages
- Develop the documentation for these tools
- Re-implement existing neuroimaging pipelines and share those implementation openly as a resource for the scientific community
- Publish research in leading neuroinformatics, neuroimaging journals and/or present at a major conference

**Contexte et atouts du poste**

Applications are invited for a postdoctoral research fellow position with Dr. Camille Maumet and in collaboration with Prof. Thomas Nichols from the Neurosciences and medical imaging. This position is part of the exploratory action GRASP “Generalizing Results Across Scientific Pipelines”.

**A propos du centre ou de la direction fonctionnelle**

The Inria Rennes - Bretagne Atlantique Centre is one of Inria’s eight centres and has more than thirty research teams. The Inria Center is a major and recognized player in computer science research, with more than thirty research teams. The Inria Center is a major and recognized player in computer science research, with more than thirty research teams. The Inria Center is a major and recognized player in computer science research, with more than thirty research teams. The Inria Center is a major and recognized player in computer science research, with more than thirty research teams.

**Mission confiée**

Data processing is central to modern statistical analysis and with the development of data-intensive fields the different tools and approaches available to study a dataset have multiplied. Those tools are very valuable to practitioners and have brought the capacity to process more data in a shorter amount of time. But -- each pipeline providing its own version of the results -- pipeline multiplicity also leads to a very large space of possible results and practitioners often have little guidance to decide which answer they should choose. Despite recent advances in developing so-called ‘multiverse analyses’ -- in which results of a variety of pipelines are combined together to obtain a consensus -- these approaches in neuroimaging are still very time-consuming which makes them impractical in a lot of cases. The successful applicant will develop approaches in data science or in statistics to combine neuroimaging statistical maps (task-based fMRI) in order to provide multiverse analyses that are both correct and practical. To run their research, the successful applicant will be involved both in the implementation of existing pipelines to provide a benchmark for their analyses as well as in deriving the statistical approaches for neuroimaging multiverse analyses. The postdoctoral research fellow will work closely together with Dr. Camille Maumet and in collaboration with Prof. Thomas Nichols from the University of Oxford.

We are looking for excellent researchers with a strong background in data processing and analysis of neuroimaging data, ideally in task-based fMRI. The successful candidate must have very strong programming skills as well as enthusiasm to study brain imaging pipelines. Previous experience in (one of the many facets of) open science will be highly valued.

The fellow will join the Empenn team at INRIA Rennes, a group of circa 30 people working on neuroimaging applications and methods with a diverse set of expertise ranging from computer science and maths to medicine. The Empenn team is part of INRIA Rennes, a research centre of about 800 members focusing on all aspects of computer science research.

Applicants should have a strong background in data science, computer science or statistics, as well as experience working with neuroimaging data. More experienced applicants should also have demonstrated interest to work collaboratively and/or openly in their research.

**Informations générales**

- **Thème/Domaine** : Neurosciences et médecine numériques
- **Ville** : Rennes
- **Centre Inria** : CRI Rennes - Bretagne Atlantique
- **Date de prise de fonction souhaitée** : 2022-09-01
- **Durée de contrat** : 2 ans, 10 mois
- **Date limite pour postuler** : 2022-07-31

**Contacts**

- **Equipe Inria** : EMPENN
- **Recruteur** : Maumet Camille / camille.maumet@inria.fr

**A propos d'Inria**

Inria est l’institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 200 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3500 scientifiques pour relever des 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 personnes d’apport 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 180 start-up. L’institut s’efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l’économie.

**Consignes pour postuler**

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

**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 ZRA 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.

**Attention**

Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par
**Compétences**

**Essential requirements**

- PhD in computer science, statistics or any field related to data science
- Prior experience with processing of neuroimaging data
- Very strong programming and software engineering skills (including ability to use version control)
- Experience in programming in Python
- Track record of high-quality reviewed journal publications
- Well-organised with project-management skills
- Strong written and oral communications skills in English
- Ability to work well in a team and exchange and share ideas with other members

**Desirable**

- Prior experience working with nipype or Pydra to develop neuroimaging processing pipelines
- Prior open sharing of different research artefacts (code, data, methods, etc.)
- Participation in collaborative research projects, e.g. at Brainhack events
- Active in the open science community

**For more information**

Informal inquiries can be sent to Dr. Camille Maumet (camille.maumet@inria.fr).

General information on INRIA and on the Empenn team are available on the respective websites: [https://www.inria.fr/fr](https://www.inria.fr/fr) [https://team.inria.fr/empenn/](https://team.inria.fr/empenn/)

Salary will be commensurate with experience as of the INRIA salary grids.

**Avantages**

- 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

**Rémunération**

Monthly gross salary amounting to 2 653 euros