L'Institut du Cerveau (ICM), recrute
Un(e) Ingénieur.e de recherche (H/F)

Poste à pourvoir dès que possible
CDD 18 mois renouvelable
A Paris 13ème
Ce poste est ouvert aux personnes en situation de handicap.

L'Institut du Cerveau est une Fondation privée reconnue d'utilité publique dont l'objet est la recherche fondamentale et clinique sur le système nerveux. Sur un même lieu, 650 chercheurs, ingénieurs et médecins couvrent l'ensemble des disciplines de la neurologie, dans le but d'accélérer les découvertes sur le fonctionnement du cerveau et les développements de traitements sur les maladies comme : Alzheimer, Parkinson, Sclérose en plaques, épilepsie, dépression, paraplégies, tétraplégies, etc.

POSTE
Engineer in MEG-EEG signal processing and open-source software development - Project MEEGbrainlife

MISSIONS PRINCIPALES

We seek a motivated individual to join the MEEGbrainlife project funded jointly by the French ANR and the American NIH under the international program call « Collaborative Research in Computational Neuroscience » (CR-CNS).

The current project introduces MEG and EEG data on the open access *brainlife.io* cloud computing platform by incorporating MEG and EEG datasets, Apps, and analysis and display pipelines into *brainlife.io* (https://brainlife.io/). This endeavour is a collaborative effort of Paris Brain Institute (ICM), Indiana University (IU) Bloomington, and the University of Texas at Austin.

The Candidate will be responsible for planning, developing, and maintaining MEG-EEG data processing Apps into *brainlife.io* and contribute to innovative research projects on the plaftorm. In close collaboration with the expert members of the MEEGbrainlife consortium, he/she will define data specifications, code architecture, data and code output quality check procedures to set the groundwork for the rapid development of a full data processing pipeline for MEG-EEG data into *brainlife.io*. He/she will participate in applying these pipelines to ongoing research projects from Nathalie George, Maximilien Chaumon, Laurent Hugueville (ICM) in collaboration with Aina Puce (IU) and Franco Pestilli (Texas). He/she will develop and integrate advanced data, network, and statistical analysis tools to foster robust, innovative MEG-EEG data analysis in Python/MATLAB.

The MEG-EEG platform ICM team – together with its IU partner – are experts in MEG-EEG data processing, using several widely used open-access toolboxes for MEG-EEG data analysis. The Candidate will work in close collaboration with team members to integrate state-of-the-art MEG-EEG processing pipelines into *brainlife.io*. He/she will carry out all stages of this integration from the definition of data standards, and implementation of all analysis steps, from pre-processing to advanced data analyses, including the analysis of event-related responses, oscillatory activity, brain sources, functional brain networks as well as data mining and modeling for assessing statistical power. We do not expect the Candidate to be expert in all these methods, but we are looking for a Candidate with end-user experience in MEG and/or EEG signal processing and time series analysis, willing to use robust and open coding practices, and with an eye on user experience to contribute to making *brainlife.io* easy to adopt and conduct analyses on. The Candidate should be proactive in a cooperative environment and spirit to propose the best methods and user interface to solve advanced neuroscience research questions. The Candidate will be expected to provide rich documentation and tutorial materials on implemented tools and methods, participate in disseminating knowledge of MEG-EEG data analysis on *brainlife.io*, and contribute to scientific publications from the project.

The Candidate will work on the CENIR MEG-EEG platform (http://www.cenir.org/lequipe-meg-eeg.html?lang=fr) in ICM, which offers a unique multidisciplinary environment at the forefront of research in neuroscience, comprising 24 research teams and 26 core facilities, covering the fields of molecular and cellular neurosciences, neurophysiology, translational and clinical neurosciences, cognitive and computational neurosciences (https://institutducerveau-icm.org/en/).

PROFIL

SAVOIR-FAIRE

- Knowledge and advanced expertise in cognitive neuroscience research methods and tools, particularly in the field of EEG and / or MEG, including knowledge of FieldTrip or MNE-Python software for MEG-EEG data analyses.
- Excellent command of the scientific programming languages MATLAB and/or Python.
- Very good knowledge and experience of code maintenance and sharing with use of versioning tools (e.g. git).
- Good knowledge in applied mathematics and statistics. Good command of the R statistical language is a plus.

SAVOIR

- A doctorate or an engineer diploma combined with at least master-level experience in research in the field of EEG-MEG brain imaging and/or signal processing, obtained in the past 0 to 3 years.
- Previous experience with EEG and/or MEG data analysis, including at least experience with event-related potential analysis or time-frequency analysis. Additional experience with source localization and functional and/or effective connectivity analysis will be a plus.
- Having published scientific articles in refereed international scholarly journals with high-level of peer review.

SAVOIR-ETRE

- Fluent communication (oral and written) in English.
- Ability to work with rigor, diligence, and precision.
- Ability to work well interactively in a multidisciplinary team.
- Curiosity and openness for research fields other than own specialization.
- Ability to rapidly acquire new skills and knowledge.
- Excellent oral presentation and writing skills, in the domains of both technical reports and scientific articles.
- Autonomy, motivation, dynamism.

CV à envoyer à : recrutement@icm-institute.org en indiquant Poste « Ingénieur de recherche MEG-EGG (h/f)»