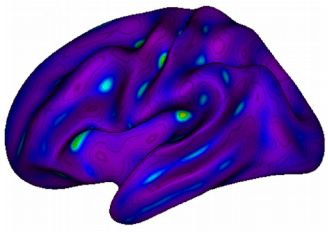
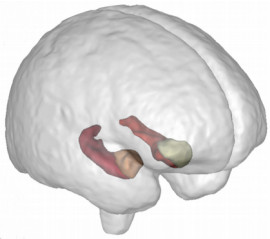


NeuroSpin is an outstanding research center on the **Human brain**. Part of the CEA (Atomic Energy Commission) and Paris-Saclay University, the NeuroSpin teams are leaders in very high field MRI carry out studies in **fundamental and clinical neurosciences**. The **BrainOmics** team works in **imaging-genetics**, at the crossroad where **neuroinformatics, bioinformatics** and **machine learning** meet and in collaboration with Gustave Roussy, ICM-La Pitié-Salpétrière, Mondor Biomedical Research Institute.

Machine learning for data imputation in neuroimaging-genetics

In the **BrainOmics** team at Neurospin, the trainee will work on the conception of **machine learning** models for single and multiple values imputation in multi-modal datasets. Moreover, he/she will take part to the analysis of patients cohorts in imaging-genetics, about **neuro-oncology pathologies** and **autism**.

Trainee's Activities

- Characterize the data to be imputed, state-of-the-art.
- Train and test **machine learning** prediction models for data impputation.
- **Improve** the existing algorithms and develop **new ones** aiming at **imputing imaging and genetic data**.
- **Analyze cohorts of patients in neuro-oncology and clinical neuroscience.**

Benefits of the training

The proposed training introduces to the **research job in Data Science**, applied to real data in biomedical imaging, gentics, and to the heterogeneous data imputation and integration, in a collaboration framework with clinicians and clinical applications. A **PhD project in Data Science**, starting in autumn 2019 is a possible option.

Searched profile

Engineering School, master Data Science. Fluent in english.

Job-related skills

- **Expertise in statistics and applied mathematics**
- Programming : **Python**, R, Matlab
- **Curiosity, taste for multi-disciplinary environnment and for innovation.**
- **Good communication skills, good personal relationship skills.**
- Knowledge in biomedical image analysis and/or genetics is an asset.

Behavioral skills

Strong motivation, rigor, autonomy and resourcefulness.

Training duration **:** 6 months, starting from march 4th, 2019.
Location : NeuroSpin-CEA, Plateau de Saclay, Gif-sur-Yvette.

Please email your CV + cover letter **by february 15th, 2019** to cathy.philippe@cea.fr and vincent.frouin@cea.fr