JOB OFFER
Software developper

Modeling progression of brain diseases from neuroimaging data

Keywords: software development, statistical learning, big data, medical imaging, clinical data, brain diseases

The topic: learning disease progression models from patients databases

The ARAMIS lab develops approaches to model the progression of neurological diseases and assist in the diagnosis and prognosis. The team has set up front-end data analysis methods to learn typical scenarios of disease progression from large multimodal collections of neuroimaging and clinical data. These scenarios combine several types of data including blood tests, cognitive assessments and brain images of various modalities like anatomical, diffusion and functional Magnetic Resonance Images (MRI). This research activity has led to software prototypes and proofs of concepts, which have shown the potential of such virtual models of disease progression for the early diagnosis, prognosis and monitoring of disease progression in Alzheimer's disease.

Your mission:

You will be in charge of developing, deploying and validating software to learn disease progression models from large databases of patients with complex multimodal data (medical imaging data including MRI and PET, cognitive scores, blood tests…).

Your main missions will be:

1) Develop and maintain disease modeling software, in interaction with the researchers
2) Package the software to deploy it in different computing environments both internally and at partnering sites
3) Develop software tools to connect the software to data management systems and to feature extraction software tools and to deploy them on our parallel computing infrastructure.
4) Deploy and validate the software on patients datasets
5) Provide support to partnering sites using the software

Technologies involved: Python, C++, Docker, Git, Shell scripting

A vibrant scientific, technological and clinical environment:

You will work within the ARAMIS lab (www.aramislab.fr) at the Brain and Spine Institute (http://www.icm-institute.org), one of the world top research institutes for neurosciences. The institute is ideally located at the heart of the Pitié-Salpêtrière hospital, downtown Paris.

The ARAMIS lab, which is also part of INRIA (the national French research institution for computer science), is dedicated to the development of new paradigms for the statistical exploitation of large neuroimaging and clinical data sets.

You will be strongly involved in scientific aspects of the work, such as discussion of methodological issues and interpretation of results. You will interact locally with the PhD students, postdoctoral fellows and engineers of the ARAMIS lab, as well as our medical collaborators at the Salpêtrière hospital. You will take part in the communications and publications resulting from the use of the software.

Your profile:
- Engineer in computer science or electrical engineering
- Strong programming skills
- Experience of development in UNIX environments (Linux and/or MacOS)
- Training and/or experience in medical imaging would be a plus
- Experience in data management would be a plus
- Good relational and communication skills
- Fluent in English

Ready to take up the challenge?
send your CV to Olivier.Colliot@upmc.fr and Stanley.Durrleman@inria.fr