



## JOB OFFER Software Developer @ ARAMIS lab Paris, France

### Development of a software product for the construction of virtual models of brain disease progression

**Keywords:** software development, agile methods, technology transfer, big data, statistical learning, neuroimaging, clinical data, brain diseases, personalized medicine

#### The topic: computer-aided diagnosis tools by the mean of statistical learning

The ARAMIS lab develops automatic tools to assist clinicians in the diagnosis and prognosis of neurological diseases. The team has set up **front-end data analysis methods** to learn typical scenarios of disease progression by the statistical exploitation of large multimodal collection of neuroimaging and clinical data. These scenarios combine several types of data including blood tests, cortico-spinal fluid tests, neuropsychological 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: develop high-quality software and validate it in a clinical environment

Your mission will be to turn these software prototypes developed in a research environment into a **software product of professional quality**, and to **validate it in a clinical environment**. The development cycle will consist in several phases to include functionalities and data types of increasing complexity.

You will be part of the **European project EuroPOND** (Progression of Neurodegenerative diseases) funded by the Horizon 2020 program of the European Commission. The consortium includes methodological research teams in Paris and London, and clinical research teams at the university hospital at Geneva, Erasmus Medical Center at Rotterdam, VU Medical Center in Amsterdam and the Istituto Neurologico Carlo Besta in Milan. Your mission includes the **training of clinical partners** to the use of the software, and then its validation on various data sets covering a large spectrum of brain diseases including Alzheimer's disease and other forms of dementia, multiple sclerosis and prion diseases.

#### A vibrant scientific, technological and clinical environment:

You will work within the **ARAMIS lab** ([www.aramislab.fr](http://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.

#### ARAMIS Team

Brain and Spine Institute (ICM)  
CNRS UMR 7225 – Inserm U1127 – University Pierre and Marie Curie UM 75  
Inria Paris-Rocquencourt Center  
<http://www.aramislab.fr>



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 interact locally with the PhD students, postdoctoral fellows and engineers of the ARAMIS lab, as well as our clinical collaborators at the Salpêtrière hospital. At the European level, you will interact closely with our partners within the EuroPOND consortium. You will take part in the communications and publications resulting from the use of the software. You will attend international scientific workshops and conferences.

**Your profile: a talented problem solver and result-oriented software engineer**

You are interested in working on major public health issues, and to develop software products that may change the way we treat patients with brain diseases. You are motivated by technology transfer and therefore to work at the interface between research and engineering. You have a solid experience in software design, implementation, testing, and optimization with agile methods. You are an expert in C++. You have good relational and communication skills with professionals from various backgrounds. Ideally, you have a solid track record in image processing, statistical learning, data science or related fields.

**Your contract:**

**Starting date:** January 2016

**Contract duration:** from 2 to 4 years

**Salary:** depending on experience

**Ready to take up the challenge?**

send your CV to [Stanley.Durrleman@inria.fr](mailto:Stanley.Durrleman@inria.fr)

(personal webpage: <http://who.rocq.inria.fr/Stanley.Durrleman/>)

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