



Offer #2023-06659

## Developer on a medical image processing platform using distributed (cloud) computing resources F/H

**Contract type :** Fixed-term contract

**Level of qualifications required :** Graduate degree or equivalent

**Fonction :** Temporary scientific engineer

**Level of experience :** From 3 to 5 years

### About the research centre or Inria department

The Inria Centre at Rennes University is one of Inria's nine centres and has more than thirty research teams. The Inria Centre is a major and recognized player in the field of digital sciences. It is at the heart of a rich R&D and innovation ecosystem: highly innovative PMEs, large industrial groups, competitiveness clusters, research and higher education players, laboratories of excellence, technological research institute, etc.

### Context

[France Life Imaging \(FLI\)](#) is a large-scale research infrastructure project aimed at establishing a coordinated and harmonized network of biomedical imaging in France. This project was selected by the call "investissements d'Avenir" as an "Infrastructure in Biology and Health". Its objective is a) to coordinate nationwide research activities concerned with in-vivo imaging and combine the skills to push the current technological barriers, and b) to provide scientists a convenient access to a complete range of imaging technologies (150 imaging systems) and integrated services.

Within this infrastructure, the Node "Image Analysis and Management" (IAM) is coordinated by [Inria](#). The objective of this node is to propose an infrastructure to store, manage and process in-vivo imaging data coming from human or pre-clinical procedures. We contribute to an archiving and management infrastructure of in-vivo images as well as provide solutions to process and manage the acquired data through dedicated software and hardware solutions. In addition, we have built a versatile image analysis and data management solution for in-vivo imaging that will allow the interoperability between distributed production sites and distributed users, heterogeneous and distributed storage solution implementing raw and meta-data indexing.

In this context and within the last years we have collected and maintained different kind of data, using the web-based image database, called [Shanoir](#), and different kind of processing algorithms, using the [Virtual Imaging Platform](#).

The Virtual Imaging Platform ([VIP](#)) is a web portal developed at [CREATIS](#) for the simulation and processing of massive data in medical imaging. One of the VIP main aims is to provide access to distributed computing resources in a transparent way for the end users. VIP has thus the capacity to manage large and complex workloads (generate, schedule and execute multiple jobs) automatically, while requiring no specific skills from its users. It is VIP developers and administrators that are in charge of making this possible. The VIP instance currently deployed at CREATIS uses mainly the storage and computing resources provided by the [EGI e-infrastructure](#). A growing number of projects with various requirements (sometimes security driven) require access to computing and storage resources (e.g., local clusters, private/public clouds) that are not member of the EGI federation.

Within this context, the recruited developer will work on **extending and adapting VIP for the use of such private computing and storage resources**. He/She will be under the supervision of the manager of the VIP platform and will interact with the other VIP engineers and the FLI-IAM engineering team. He/She will be hosted at the [CREATIS](#) lab (Villeurbanne).

### Assignment

The main objectives of the position are:

- **Requirement analysis and design**
  - Understanding of the current VIP implementation for job management on EGI
  - Analysis of requirements and technical solutions for the integration of the new computing resources available
  - Choice of the solution to be implemented and specifications
- **Software development and testing**
  - Implementation of the chosen solution(s) within VIP and related dependencies

- Implementation of the associated tests
- Continuous integration (CI)
- **Deployment and configuration**
  - Automation on the deployment and configuration procedure on the targeted infrastructure (ideally with Ansible scripts)

## Skills

- High level education in computer science (PhD or grande-école), specialized on computer science
- Software development experience (Java, Python, Shell)
- Experience with IntelliJ or other IDEs, git, GitHub/Gitlab
- Experience with Linux operating systems
- Knowledge in the field of cluster and/or Cloud computing (Slurm, OpenStack, Kubernetes)
- Knowledge of Ansible would be a bonus
- Rigor, autonomy, technical curiosity, passion for new technologies
- Good capability in technical and scientific English

## Benefits package

- 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

## Remuneration

Monthly gross salary from 2 695 euros according to diploma and experience

## General Information

- **Town/city** : Lyon
- **Inria Center** : [Centre Inria de l'Université de Rennes](#)
- **Starting date** : 2024-07-01
- **Duration of contract** : 6 months
- **Deadline to apply** : 2024-05-15

## Contacts

- **Inria Team** : EMPENN
- **Recruiter** :  
Kain Michael / [michael.kain@inria.fr](mailto:michael.kain@inria.fr)

## About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

## The keys to success

- A detailed motivation letter
- A complete CV with past experiences and relevant education
- Letters of recommendation from people able to support the application

**Warning** : you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.

## Instruction to apply

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

### Defence Security :

This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

### Recruitment Policy :

As part of its diversity policy, all Inria positions are accessible to people with disabilities.

