



Offer #2021-03527

Developer on workflow management, integration and interoperability F/H

Contract type : Fixed-term contract

Renewable contract : Yes

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 Rennes - Bretagne Atlantique Centre is one of Inria's eight centres and has more than thirty research teams. The Inria Center 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) aims at building and operating an infrastructure to store, manage and process in vivo imaging data coming from human or pre-clinical procedures. One of the main bricks of this infrastructure, allowing to process the data, is the Virtual Imaging Platform (VIP), developed and deployed at the CREATIS laboratory. [VIP](#) is a web portal for the simulation and processing of massive data in medical imaging. By effectively leveraging the computing and storage resources of the EGI e-infrastructure, VIP offers its users high-level services enabling them to easily execute medical imaging applications. VIP has, in 2020, more than 1200 registered users and about 20 applications open to all its users. Sixty international publications have been produced by VIP users since 2011.

In the last few years, VIP has addressed interoperability and reproducibility concerns, in the larger scope of a FAIR (Findable, Accessible, Interoperable, Reusable) approach to scientific data analysis. Through [Boutiques](#), VIP is able to easily describe and integrate new applications, as well as publish them on open repositories, such as [Zenodo](#), to make them findable and accessible. Through [CARMIN](#), we also strive to ensure interoperability among platforms, such as VIP and the [Shanoir](#) data management platform. Nevertheless, further developments are needed at the workflow management level, allowing for a simpler and more standardized way of building, integrating and managing workflows in VIP.

In this context, the engineer will work on extending VIP with functionalities in line with the larger FLI-IAM objectives. The engineer will be hosted at the [CREATIS](#) lab. He or she will be under the supervision of the manager of the VIP platform and will interact with the other VIP engineers and the broader FLI community.

Assignment

Objectives of the position:

In close cooperation with the technical manager, the main objectives of the position are:

- **Interoperability and reproducibility**
 - Improve the workflow management system in VIP, allowing for an easier import of complex workflows and a better reproducibility of scientific results
 - Extend Boutiques support, enabling FAIR data analysis
 - Follow-up on CARMIN and interoperability with other computing and data platforms
 - Integrate BIDS support in VIP
- **Scientific algorithm challenge**
 - Import into VIP the pipelines provided by challengers and the metrics algorithms provided by

- organizers, based on Boutiques descriptors and Docker containers
- Handle the data transfers between VIP and Shanoir
- Handle the complete process of pipeline integration, execution and providing final results

Skills

- High level education in computer science (university or grande-école), specialized on software development or distributed Internet architectures
- 2-3 years of software development experience with Java
- Experience with IntelliJ or other IDEs, GitHub, JBoss or Tomcat
- Experience with Linux operating systems and container technologies
- Knowledge of Workflow Management Systems
- Rigor, autonomy, technical curiosity, passion for new technologies and multidisciplinary work
- Good capability in technical and scientific English and oral practice
- Knowledge in the field of medical imaging and image processing would be a bonus

Benefits package

- Subsidised catering service
- Partially-reimbursed public transport

Remuneration

Monthly gross salary from 2562 euros according to diploma and experience

General Information

- **Town/city** : Lyon
- **Inria Center** : [Centre Inria de l'Université de Rennes](#)
- **Starting date** : 2021-06-01
- **Duration of contract** : 12 months
- **Deadline to apply** : 2021-09-30

Contacts

- **Inria Team** : EMPENN
- **Recruiter** :
Kain Michael / 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.

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.