



Offer #2023-06943

DevOps developer for medical imaging platform

Contract type : Fixed-term contract

Level of qualifications required : Graduate degree or equivalent

Fonction : Temporary scientific engineer

Level of experience : Up to 3 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

[Shanoir-NG](#) (SHaring iN vivo Imaging Resources - Next Generation) is a web platform that allows sharing of medical images for clinical and preclinical research. Originally dedicated to neuroimaging, the platform is now perfectly usable for all kind of organs and pathologies. Shanoir allows the import of "raw" data from the various acquisition machines and formats: DICOM (MR, CT, PT, NM), BIDS, Bruker (preclinical), EEG (EDF + BrainVision) and "processed" data: NIFTI + Analyze. Shanoir-NG is a cloud-native state-of-the-art web application.

[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. In addition, the infrastructure will be open to collaborations with industrial partners.

Within this infrastructure, the hub "Image Analysis and Management" ([FLI-IAM](#)) aims at building and operating an infrastructure to store, manage and process *in vivo* imaging data coming from human or pre-clinical studies. One of the main bricks of this infrastructure, allowing to store the data, is Shanoir-NG, developed and deployed at the Empenn laboratory.

Assignment

The goal of this position is to provide a turnkey solution to manage one or multiple instances of Shanoir-NG on a Kubernetes cluster. It will cover the needs of the various environments (development, qualification, production) and take into consideration all usual admin operations:

- fresh installation
- version updates (possibly with rollback)
- automated backups
- monitoring (availability, metrics, intrusion detection)
- contingency procedures (incident response, recovery from backup)

Main activities

In close cooperation with the operation manager and the Shanoir manager, the candidate will be in charge of the following tasks:

- **Understand today's deployment (docker-compose + Ansible)**
 - Code is open-source (GPL v3.0) under <https://github.com/fli-iam/shanoir-ng>
- **Document the constraints and possible approaches**
- **Develop a proof-of-concept using Minikube**
 - Interact with the developers and sysadmins to test and review it
- **Set up a CI pipeline**
 - Publish official Docker images for the project
 - Validate the whole lifecycle of a Shanoir instance (installation, upgrade, backup, recovery, ...)
- **Set up qualification instances**
 - Iteratively improve the solution until it reaches MVP status

- Contribute to the migration of the production instances
- Provide support to third party academic and industrial partners using Shanoir-NG
- Share knowledge and experience about Kubernetes with other teams in the lab

Skills

- High level education in computer science (university or grande-école), specialized on software development
- 1-2 years of DevOps experience
- Knowledge on **Docker, docker-compose and Kubernetes**
- Good capability in technical and scientific English and oral practice
- Good communication skills in explaining/debating technical problems and solutions
- Bonus
 - Knowledge in the field of medical imaging and image processing

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 : Rennes
- 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

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.