Offre n°2023-06659

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

Le descriptif de l'offre ci-dessous est en Anglais

Type de contrat : CDD

Niveau de diplôme exigé : Bac + 5 ou équivalent

Fonction : Ingénieur scientifique contractuel

Niveau d'expérience souhaité : De 3 à 5 ans

A propos du centre ou de la direction fonctionnelle

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.

Contexte et atouts du poste

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).

Mission confiée

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)

Compétences

- 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

Avantages

- 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

Rémunération

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

Informations générales

- **Ville :** Lyon
- **Centre Inria :** Centre Inria de l'Université de Rennes
- **Date de prise de fonction souhaitée :** 2024-07-01
- **Durée de contrat :** 6 mois
- **Date limite pour postuler :** 2024-05-15

Contacts

- **Équipe Inria :** EMPENN
- **Recruteur :**
  Kain Michael / michael.kain@inria.fr

A propos d'Inria

Inria est l'institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

L'essentiel pour réussir

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

Attention: Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

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

Sécurité défense :
Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :
Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.