Offre n°2024-08336

R&D Engineer - Exascale storage

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

Type de contrat : CDD

Contrat renouvelable : Oui

Niveau de diplôme exigé : Thèse ou équivalent

Fonction : Ingénieur scientifique contractuel

A propos du centre ou de la direction fonctionnelle

Inria, the French national research institute for the digital sciences, promotes scientific excellence and technology transfer to maximise its impact.
It employs 2,400 people. Its 200 agile project teams, generally with academic partners, involve more than 3,000 scientists in meeting the challenges of computer science and mathematics, often at the interface of other disciplines.
Inria works with many companies and has assisted in the creation of over 160 startups.
It strives to meet the challenges of the digital transformation of science, society and the economy.

Contexte et atouts du poste

About Inria, the team and the position

Inria is the only French public research body fully dedicated to computational sciences. Inria's missions are to produce outstanding research in the computing and mathematical fields of digital sciences and to ensure its impact on the economy and society through technology transfer and innovation. Throughout its 8 research centres and its approximately 200 project teams, Inria has a workforce of 3 400 scientists with an annual budget of 265 million euros, 29% of which coming from its own resources. Inria Rennes Bretagne-Atlantique is one of the eight sites of Inria. This publicly funded research center has a workforce of about 620 people, including full-time research scientists, faculty staff, engineers and support staff, distributed in 33 teams and support services.

The hired engineer will be a member of the KerData Inria team (https://team.inria.fr/kerdata/) led by Gabriel Antoniu. KerData is a joint research team of Inria Rennes - Bretagne Atlantique and INSA Rennes, and also a team of the IRISA lab. KerData's main research activities address the area of distributed data management at challenging scales, with a recent focus on hybrid (supercomputer/cloud/edge) infrastructures.

Developed by the KerData research team in the context of the NumPEx program (https://numpex.org/), FIVES (https://github.com/fives-simulator/fives) is a storage resource scheduling simulator for supercomputers based on WRENCH and SimGrid, two state-of-the-art simulation frameworks. In particular, FIVES can model a parallel file system such as Lustre, a computing partition, and simulate a set of jobs performing I/O on the resulting HPC system. This simulator is the result of a collaboration with the University of Manoa (HI, USA) and uses I/O execution traces from computing centers such as Argonne National Laboratory and NCSA in the US.

Mission confiée

Mission overview

By joining our team you will participate in a dynamic work environment with exceptionally talented and friendly coworkers who are committed to high-quality research and development practices. You will collaborate with esteemed researchers from around the world by taking the technical responsibility for the development of the FIVES software, with the following global goals:

- Make FIVES evolve towards a distributable, professional-quality software (technical support, documentation, management of the web site);
- Interact with potential users and build demonstrators with the goal to increase FIVES's visibility and adoption.

Principales activités

Detailed missions

- Test and improve the FIVES code, build non-regressive robustness and performance tests, set up a continuous code integration process;

- Develop the incipient documentation by writing a complete and up-to-date documentation (reference manual, user manual);

- Extend FIVES to support emerging storage systems and to provide locality and power consumption metrics;

- Design and maintain a profesional-quality web site facilitating the distribution of the code and of its documentation.

Compétences

Required qualifications

- Excellent, demonstrated programming skills in Python (including libraries for parallel processing in Python, e.g., Ray, Dask) and C++;
- Very good knowledge of hardware and software technologies in the areas of distributed computing;
- Experience with HPC systems;
- Very good knowledge of methodologies for managing software projects;
- Ability to analyze and synthesize user requirements;
- Ability to communicate and work in collaboration with experts in the same area and in other areas, in English;
- Autonomy in leading and performing the tasks;
- Sense of partnership and team spirit;
- Taste for transmitting and sharing knowledge, results, progress;
- Facility to present the results in written and oral form.

Avantages

- Subsidised catering service
- Partially-reimbursed public transport

Rémunération

monthly gross salary from 2979 euros according to diploma and experience

Informations générales

- **Thème/Domaine :** Calcul distribué et à haute performance
  Système & réseaux (BAP E)
- **Ville :** Rennes
- **Centre Inria :** Centre Inria de l'Université de Rennes
- **Date de prise de fonction souhaitée :** 2025-01-01
- **Durée de contrat :** 6 mois
- **Date limite pour postuler :** 2024-12-31

Contacts

- **Équipe Inria :** KERDATA
- **Recruteur :**
  Antoniu Gabriel / gabriel.antoniu@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.

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

For more information, please contact gabriel.antoniu@inria.fr

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.