Offer #2025-09146

Research Engineer : Software Packaging and Continuous Integration for Supercomputers (Grenoble/Bordeaux)

Contract type : Fixed-term contract

Renewable contract : Yes

Level of qualifications required : Graduate degree or equivalent

Other valued qualifications : Master's degree, Engineer's degree or PhD in computer science

Fonction : Temporary scientific engineer

Level of experience : Recently graduated

About the research centre or Inria department

The Centre Inria de l'Université de Grenoble groups together almost 600 people in 22 research teams and 7 research support departments.

Staff is present on three campuses in Grenoble, in close collaboration with other research and higher education institutions (Université Grenoble Alpes, CNRS, CEA, INRAE, …), but also with key economic players in the area.

The Centre Inria de l'Université Grenoble Alpe is active in the fields of high-performance computing, verification and embedded systems, modeling of the environment at multiple levels, and data science and artificial intelligence. The center is a top-level scientific institute with an extensive network of international collaborations in Europe and the rest of the world.

Context

We are looking for candidates with a **Master's degree, Engineer's degree or PhD in computer science, junior or senior,** to join a team responsible for the packaging, deployment and testing of software libraries for supercomputers.

Our team is distributed and so we have the fexibility to offer candidates **2 different possible localisations**:

- Datamove team (https://team.inria.fr/datamove/) located near **Grenoble, in the French Alps,**

- SED team (https://sed-bso.gitlabpages.inria.fr/), located near **Bordeaux, close to the Atlantic Ocean,**

Duration: initial contratc of **3 years with possible extension.**

Hiring dates are flexible with a possible start from November 2025 (modulo mandatory administrative deadlines). We will process applications as they arise.

This work is part of the NumPEx project (http://www.numpex.fr) endowed with more than 40 million euros over 6 years from 2023, to build a software stack for Exascale supercomputers related to the arrival in Europe of the first Exascale machines, with one planned in France for 2025. These machines will be among the most powerful in the world (https://top500.org/), used for traditional scientific applications and increasingly also for artificial intelligence.

Our role in NumPEx is to design and implement an inovative packaging, deployment and testing strategy. Commonly used solutions show their limits in front of the complexity of supercomputers and applications, as well as the need for reproducibility for open science. Our goal is to build a solution based on a new generation of software packagin tools: Guix, Spack.

You can have a look at the team activity at https://numpex-pc5.gitlabpages.inria.fr/tutorials or https://hpc.guix.info. We also regularly contribute to the discussions on software production at the International INPEX worekshops (https://inpex.science/#workshops-events).

Assignment

You will contribute to the design and implementation of the packaging and continuous integration strategy. You will participate in the deployment and testing of the infrastructure. You will also participate to user support and to training activity around all these aspects.

Our packaging strategy is centered on the open source tools **Guix** (https://hpc.guix.info/), and **Spack** (https://spack.io/). In direct contact with the development teams of these tools, with the supercomputer administration teams, and software developers, you will participate in:

1. the design of the packaging strategy of the NumPEx project,
2. the effort of packaging libraries for supercomputers, from standards (MPI, PETSC, Pytorch,....) to application s.
3. the design of a package test and validation solution taking into account the specificities of supercomputers (High performance network, ARM and X86 arch, GPUs)
4. the development of a solution allowing non-administrator users to deploy software stacks on supercomputers.

5. training around all of these aspects for researchers and engineers, whether they are library designers or users.

Skills

Master's degree, Engineer's degree or PhD, beginner or confirmed (salary adjusted according to experience) in computer science.

The essential expected skills are:

1. Good practice of Unix/Linux and system administration
2. Good programming experience (C/C++, Python)
3. Experience with software compilation and installation chains, version management tools, testing and continuous integration (CMake, Git, GitHub, GitLab, etc...).
4. The work being performed in an international context, a good practice of technical English (written and oral) is expected (proficiency in French is not compulsory), as is a taste for team work.
5. Any additional skill related to package managers (Guix, Nix, Spack, apt, rpm,…), containers (Singularity/Apptainer, Docker,…) or open source development are a plus.
6.

An initial training time will be provided to complement the missing skills.

You will integrate an academic research environment which will give you, throughout your contract, the opportunity to complete your training on cutting-edge technologies.

To apply, please send, in addition to the classic elements, any information that could help us assess your skills, such as a recent internship or thesis report, your github account or links to software developments in which you participate, as well as some references from people we can contact to certify your qualities.

Benefits package

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (90 days / year) and flexible organization of working hours (except for intership)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage under conditions

Remuneration

From 2,692 € (depending on experience and qualifications).

Base of 2692€ gross / month. Wage according to the profile.

General Information

- **Theme/Domain :** Distributed and High Performance Computing
  Software engineering (BAP E)
- **Town/city :** Saint Martin d'Heres
- **Inria Center :** Centre Inria de l'Université Grenoble Alpes
- **Starting date :** 2025-11-01
- **Duration of contract :** 3 years
- **Deadline to apply :** 2025-10-31

Contacts

- **Inria Team :** DATAMOVE
- **Recruiter :**
  Raffin Bruno / bruno.raffin@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

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.