



Vacancy R&D Scientific Software Research Engineer



VERCE (<http://www.verce.eu>) is a 4-year project funded by the European Commission in the frame of the FP7-INFRASTRUCTURES-2011-2 e-Science environment program. VERCE is coordinated by the CNRS – INSU (Centre National de la Recherche Scientifique – Institut National des Sciences de l’Univers) and involves a consortium of ten European research and education partners in seismology, informatics and information technology. The overall goals of VERCE are to:

- Enable data-intensive applications of the seismology research community by delivering a data-intensive e-science environment co-evolving with the research practices, and built upon a comprehensive service-oriented architecture and a platform of services and tools (workflow, data flow) integrating data, Grid, Cloud and HPC infrastructures;
- Productize and deploy software implementation of a core of pilot data-intensive data analysis and data modeling applications on the VERCE architecture;
- Provide intellectual ramps - training and dissemination - facilitating the uptake of these technologies by the seismological research community.

VERCE has strong synergies with other European and international (USA & Japan) initiatives, and will contribute to the e-science environment of the European Plate Observatory System (EPOS): the solid earth ESFRI project.

The CNRS-INSU is recruiting a Scientific Software Research Engineer

Position

- Employment (public law): one year contract renewable up to 31 December 2015
- Location: Institut de Physique du Globe de Paris, Paris 5^{ème}, France
- Starting: as soon as possible

Description of the position

The Scientific Software Research Engineer (SSRE) is responsible, under the authority of the CNRS-INSU VERCE coordinator, for planning, executing, and finalizing the R&D activities that productize, enable, and deploy software implementations of selected core data- and cpu-intensive applications (time series analysis and waveform modeling) on the VERCE data-intensive architecture and platform of services and tools. As a ‘research technologist’, he or she will work alongside the seismology research developers to interface these applications with computer science and software engineering methods, and to deliver support tools and intellectual ramp. The SSRE contributes throughout the project lifecycle to the definition and evaluation of the architecture as well as the platform components. He or she will liaise with VERCE team members - located in diverse locations in Europe - to deliver the project deliverables according to plan. He or she will be a leading member of the IT team including data-aware infrastructure engineers.

- ✓ Analyze and prioritize alongside the seismological research developers a core of pilot data-intensive applications - time series analysis, data mining and data modeling software - and use cases.
- ✓ Productize the selected application software implementation – up to re-usable workflow and data flow - through refactoring and reengineering-evaluation cycles
- ✓ Deploy, evaluate and monitor the data-intensive applications on the VERCE architecture and platform
- ✓ Contribute to the definition and the validation of the architecture components and of the platform services and tools all through the project
- ✓ Deliver support and training tools to the seismological research developers and users
- ✓ Contribute to the development and the evaluation of scientific gateway interfaces
- ✓ Organize and deliver progress reports and documentation in a timely and clear fashion for internal and external web-enabled communication
- ✓ Liaise with the VERCE partners and other international projects in synergy with VERCE;

Profile

- MS + 2 years, Engineering School, Ph.D. degree in Computational Science or equivalent experience

Required expertise

- Excellent programming skills and practical experience in analyzing, refactoring, and reengineering scientific codes;
- Demonstrated proficiency in C/C++, Java, and Python programming languages;
- Thorough knowledge of data structures, algorithms, and object-oriented design;
- Strong working knowledge of operating systems fundamentals;
- Experience with distributed, high-throughput, and multi-threaded computing;
- Specific experience in time-series analysis, signal processing, and data-intensive methods;
- Relentless user focus together with a result-oriented approach;
- Excellent English writing skills and a good command of French;
- Excellent culture fit to collaborate with research scientists;
- Demonstrated analytical and organizational skills: ability to effectively prioritize and execute tasks in a high-pressure environment with strict deadlines;
- Experience at working both autonomously and in a team-oriented, collaborative, and multicultural environment;
- Strong capability in communication, analysis, and writing syntheses and reports;
- Open personality with a flexible and dynamic attitude.

Desired skills and expertise

- Knowledge in HPC, Grid, and Cloud computing;
- Knowledge of large scale relational databases;
- Understanding and practice in the use of object-oriented design patterns;
- Knowledge of Fortran 90 programming language
- Knowledge of Finite Element Methods and Engineering software
- Experience in open source collaborative projects;

Work conditions

- Salary: Engineer or Research Engineer level – depending of the diploma and the working experience - according to the French CNRS public scale (28 000 – 35 000/year gross salary), including health insurance.
- Overtime may be required in meeting project deadlines;
- Travel on occasional basis is required for the purpose of collaborative meetings;
- Participation in training and outreach sessions may be required.
- An interesting and challenging position in an attractive, multicultural, and dynamic environment;
- The opportunity to network with partner organizations all over Europe;

Submission of application and contact

Application must be written in English, indicating the earliest starting date, and consists of a **resume** (max. 2 pages), a **cover letter** (indicating where you saw the position advertisement), and eventually **references**.

Please <mailto:verce-pmo@verce.eu> - mentioning “Scientific Software Research Engineer - VERCE project” in the subject line – **before February 10, 2012**.