Job Reference

251_19_CASE_PNM_R0

Position

Part-Time Developer - Master Student (R0)

Data de tancament

Diumenge, 16 Febrer, 2020
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About BSC

The Barcelona Supercomputing Center - Centro Nacional de Supercomputación (BSC-CNS) is the leading supercomputing center in Spain. It houses MareNostrum, one of the most powerful supercomputers in Europe, and is a hosting member of the PRACE European distributed supercomputing infrastructure. The mission of BSC is to research, develop and manage information technologies in order to facilitate scientific progress. BSC combines HPC service provision and R&D into both computer and computational science (life, earth and engineering sciences) under one roof, and currently has over 650 staff from 49 countries.

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BSC-CNS YouTube Channel
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Context And Mission

The project HiFiTurb aims at understanding fluid dynamics behaviors such as turbulence-dependent features and laminar to turbulent transition. The CFD team relies on Alya, an HPC multiphysics simulation code to model and simulate such phenomenons. The mission of the candidate is to improve the programming workflow of Alya to ensure its efficiency and stability by designing a benchmark infrastructure to evaluate the impact of code and HPC system modifications on the code performance. This benchmark infrastructure will collect data about Alya runs, gather it, and represent it to evaluate the performance evolution over time. Subsidiary tasks will be dedicated to improving Alya and some post-processing tools programming workflow (CI/CD) by designing unity tests and managing the deployment of the applications on various platforms.
Key Duties

- Design and implement a test and benchmark framework aimed to evaluate an HPC scientific code, through a web application.
- Participate in designing the CI/CD flow of Alya application.
- Improve a set of MPI/C++ tools by adding new features, by designing regression tests, and managing the deployment on various HPC platforms.
- Provide support to the users of these tools.
- Documentation of the work

Requirements

- Education
  - Bachelor or equivalent degree in Computer Science, or another qualification provided that the candidate can justify having acquired the needed capabilities and skills for the vacancy.

- Essential Knowledge and Professional Experience
  - Strong software design knowledge
  - Clean, scalable and maintainable code
  - Web applications, SQL, HTML, CSS & Javascript
  - Python, C++, Java
  - Git, Svn
  - Please indicate in your CV your github account or any link where we can access to your projects and code you have written.

- Additional Knowledge and Professional Experience
  - MPI, Fortran
  - Jenkins, Gitlab, Github, Yaml, Docker
  - Server administration
  - Experience with data visualization API

- Competences
  - Rigor
  - Autonomy
  - Autodidactism
  - Organizing skills
  - Problem-solving
  - Interaction skills
  - Since the team is international, speaking foreign languages will be an asset.
Conditions

- The position will be located at BSC within the CASE Department
- We offer a full-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Duration: Temporary - 1 year renewable
- Salary: we offer a competitive salary commensurate with the qualifications and experience of the candidate and according to the cost of living in Barcelona
- Starting date: as soon as possible

Applications Procedure

All applications must include:

- A Cover Letter with a statement of interest in English, including two contacts for further references - Applications without this document will not be considered
- A full CV in English including contact details

Deadline

The vacancy will remain open until suitable candidate has been hired. Applications will be regularly reviewed and potential candidates will be contacted.

Diversity and Equal Opportunity Employment

BSC-CNS is an equal opportunity employer committed to diversity and inclusion. We are pleased to consider all qualified applicants for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability or any other basis protected by applicable state or local law.
This position is reserved for candidates who meet the requirements and have the legal status of disabled persons with a degree of disability equal to or greater than 33%. In case there are no applicants with disabilities that meet the requirements, the rest of the candidates without declared disability will be evaluated.

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