333_23_CS_SONAR_R1

Recruitment App Link

https://webapps.bsc.es/recruitment/job/2676

Website Node ID

61442

Job Reference

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Position

PhD Student (R1)

Closing Date

Tuesday, 16 April, 2024
Reference: 333_23_CS_SONAR_R1
Job title: PhD Student (R1)

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, was a founding and hosting member of the former European HPC infrastructure PRACE (Partnership for Advanced Computing in Europe), and is now hosting entity for EuroHPC JU, the Joint Undertaking that leads large-scale investments and HPC provision in Europe. 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 900 staff from 55 countries.

Look at the BSC experience:
[BSC-CNS YouTube Channel](#)
[Let's stay connected with BSC Folks!](#)

We are particularly interested for this role in the strengths and lived experiences of women and

underrepresented groups to help us avoid perpetuating biases and oversights in science and IT research. In instances of equal merit, the incorporation of the under-represented sex will be favoured.

Context And Mission

Applications are invited for PhD student positions at the Barcelona Supercomputing Center (BSC-CNS). The PhD student will become a member of a world class research group that frequently contributes to top computer architecture and high-performance computing venues (E.g. SC, ISCA, HPCA, HPDC, or PPoPP).

Research activities will be focused on one or several of the following topics, among others:

1. Virtual memory management: Acceleration of virtual to physical address translation, hardware support for OS, management of irregular workloads.

2. High-performance computing architectures: Acceleration of floating-point intensive workloads via reconfigurable or vector processors.

3. Cache management policies for graph and strongly irregular workloads.

4. Numerical libraries for scientific computing with focus on long vector architectures.

Experience in some of these topics is strongly appreciated.

Key Duties

- Formulate and evaluate new ideas in a rigorous way
- Write technical reports and papers
- Use and extend scientific code (numerical libraries, simulators, etc.)

Requirements

- Education
    - M.Sc. in Computer Science or close area (candidates expected to graduate in the current course are also encouraged to apply)

- Essential Knowledge and Professional Experience
    - Computer Architecture: micro-architecuture, resource sharing in multicores, cache hierarchy, simulation techniques
    - Artificial Intelligence: rule-based reasoning, decision trees, support vector machines, neural networks
    - Operating Systems: Linux, scripting, OS scheduler
    - Performance Analysis and Tuning of parallel applications
    - Programming: C/C++, OpenMP/MPI, CUDA, etc

- Competences
    - Ability to take initiative and prioritize
    - Ability to work independently and in a team
    - Capacity to interact and build strong relations with other research groups
    - Excellent written and verbal communication skills in English

Conditions

- The position will be located at BSC within the Computer Sciences Department
- We offer a full-time contract (37.5h/week), a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, restaurant tickets, private health insurance, support to the relocation procedures
- Duration: Open-ended contract due to technical and scientific activities linked to the project and budget duration
- Holidays: 23 paid vacation days plus 24th and 31st of December per our collective agreement
- 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: asap

Applications procedure and process

All applications must be made through BSC website and contain:

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

In accordance with the OTM-R principles, a gender-balanced recruitment panel is formed for every vacancy at the beginning of the process. After reviewing the content of the applications, the panel will start the interviews, with at least one technical and one administrative interview. A profile questionnaire as well as a technical exercise may be required during the process.

The panel will make a final decision and all candidates who had contacts with them will receive a feedback with details on the acceptance or rejection of their profile.

At BSC we are seeking continuous improvement in our recruitment processes, for any suggestions or feedback/complaints about our Recruitment Processes, please contact recruitment [at] bsc [dot] es.

For more information follow [this link](#)

Deadline

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

OTM-R principles for selection processes

BSC-CNS is committed to the principles of the Code of Conduct for the Recruitment of Researchers of the European Commission and the Open, Transparent and Merit-based Recruitment principles (OTM-R). This is applied for any potential candidate in all our processes, for example by creating gender-balanced recruitment panels and recognizing career breaks etc.
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.
For more information follow [this link](#)

Barcelona Supercomputing Center - Centro Nacional de Supercomputación