724_24_ES_CES_RE1/RE2

Job Reference

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Position

Acceleration of climate Models using innovative platforms, based on RISC-V architecture

Data de tancament

Divendres, 14 Febrer, 2025
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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, 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 1000 staff from 60 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.

We promote Equity, Diversity and Inclusion, fostering an environment where each and every one of us is appreciated for who we are, regardless of our differences.

If you consider that you do not meet all the requirements, we encourage you to continue applying for the job offer. We value diversity of experiences and skills, and you could bring unique perspectives to our team.

Context And Mission

The Laboratory of Open Computer Architecture (LOCA) at Barcelona Supercomputing Center aims to break through traditional disciplinary silos and lead the research and development of European open software and hardware stacks based on the RISC-V Instruction Set Architecture for Exascale and beyond. This will be done with BSC's scientific departments to produce highly optimized grand challenge scientific applications in climate modelling, personalized medicine and energy. LOCA spans topics ranging from Computer Architecture to System Software to Applications, in both traditional HPC and emerging High-Performance Data Analytics (HPDA) and is working towards EU autonomy in HPC technologies. BSC is looking for one domain expert for each of the centre's application departments (Earth Science, Life Science and Engineering Sciences) to contribute to this aim.

The candidate will work for the Earth Sciences Department, led by Prof Francisco Doblas-Reyes, aims to deliver climate prediction and change studies. This work is done through computational applications implemented to work in massive supercomputers and novel hardware.

Main goal:
Apply domain expertise activities performed by the Earth Sciences computational applications focused on the identification, characterization, optimization, and co-design of HPC applications in collaboration with experts on system software and open hardware architectures.

Key Duties

- Identify applications of interest for Earth Sciences department that can benefit from other groups/departments' support.
- Help to characterize the core applications for the department by using the resources available at BSC
- Work to optimize domain applications for BSC-designed RISC-V HPC processors in collaboration with the multi-disciplinary team and contribute to enhancing the full HPC stack.
- Be the representative of the department for the LOCA co-design Severo Ochoa activities
- Identify existing co-design activities being performed within multiple, track the work, inform on relevant aspects, promote synergies and exchange of best practice.
- Co-organize regular sessions to disseminate the knowledge, progress, and projects of the Severo Ochoa, in the shape of workshops and/or seminars.

Requirements

- Education
    - Having a Bachelor and master in Computer Science, Telecommunications, Physics or related discipline.
    - Post-doc or experienced engineer can be valued.

- Essential Knowledge and Professional Experience
    - Good development skills and experience with UNIX/LINUX environments.
    - Excellent computing skills in high-level computer languages (especially FORTRAN or C/C++).
    - Understanding of HPC computer architecture issues including CPU, accelerators, memory, interconnect, parallel I/O, and computational performance
    - Knowledge in different hardware architectures and co-design.

- Additional Knowledge and Professional Experience
  - Fluency in English and Spanish
  - Mix of technical and soft skills

- Competences
  - Good communication skills (verbal and written), and ability to effectively communicate technical concepts to non-experts.
  - Good organization skills, and ability to work under pressure.
  - Proactive and able to take the initiative when needed.
  - Interpersonal skills: the candidate will be working in close collaboration with all the different groups and departments.
  - Creative thinking.
  - Operate independently but love being part of a collaborative team.

Conditions

- The position will be located at BSC within the Earth 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

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