

[219_25_CS_AHPC_R1](#)

Job Reference

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Position

PhD Student: Architecture Simulation (RISC-V)

Fecha de cierre

Viernes, 21 Marzo, 2025

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Job title: PhD Student: Architecture Simulation (RISC-V)

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 Accelerators and Communications for HPC Group leads cutting-edge research and development around accelerators/coprocessors in HPC and high-performance networking. We collaborate closely with the major vendors in the topic for HPC: NVIDIA and Intel. We organize locally international events such as the PUMPS Summer School, PATC Courses on CUDA/OpenACC, and annual hackathons, and collaborate in the organization of related international conferences and workshops such as SC, IEEE Cluster, or AsHES.

The group has been recently awarded one of the prestigious ERC Consolidator Grants:

<https://www.hpcwire.com/off-the-wire/bsc-researcher-antonio-j-pena-awarded-erc-consolidator-grant-for-the-home-project/>

We are looking to cover a PhD Student positions to work on novel system architectural proposals applied to Homomorphically Encrypted Deep Learning Inference (no cryptography background required). This will include extending existing RISC-V simulators toward designing a domain-specific accelerator.

Prospective candidates may take a look at the following paper to get an initial idea of our focus:

<https://arxiv.org/abs/2103.16139>

Group Web Page: <https://www.bsc.es/discover-bsc/organisation/scientific-structure/accelerators-and-communications-hpc>

Key Duties

- Drive research in the above-mentioned topic, under the supervision of the Group Manager and the mentorship of a postdoctoral researcher

Requirements

- Education
 - MS in a related field
- Essential Knowledge and Professional Experience
 - Good level of C/C++ programming
 - Previous professional experience not required
- Additional Knowledge and Professional Experience
 - Previous experience on system architecture design / simulators is not mandatory but will be valued
- Competences
 - Good English Level

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: 16/06/2025

Applications procedure and process

All applications must be submitted via the BSC website and contain:

- A full CV in English including contact details
- A cover/motivation letter with a statement of interest in English, clearly specifying for which specific area and topics the applicant wishes to be considered. Additionally, two references for further contacts must be included. Applications without this document will not be considered.

Development of the recruitment process

The selection will be carried out through a competitive examination system ("Concurso-Oposición"). The recruitment process consists of two phases:

- **Curriculum Analysis:** Evaluation of previous experience and/or scientific history, degree, training, and other professional information relevant to the position. - **40 points**
- **Interview phase:** The highest-rated candidates at the curriculum level will be invited to the interview phase, conducted by the corresponding department and Human Resources. In this phase, technical competencies, knowledge, skills, and professional experience related to the position, as well as the required personal competencies, will be evaluated. - **60 points**. *A minimum of 30 points out of 60 must be obtained to be eligible for the position.*

The recruitment panel will be composed of at least three people, ensuring at least 25% representation of women.

In accordance with OTM-R principles, a gender-balanced recruitment panel is formed for each vacancy at the beginning of the process. After reviewing the content of the applications, the panel will begin the interviews, with at least one technical and one administrative interview. At a minimum, a personality questionnaire as well as a technical exercise will be conducted during the process.

The panel will make a final decision, and all individuals who participated in the interview phase will receive feedback with details on the acceptance or rejection of their profile.

At BSC, we seek continuous improvement in our recruitment processes. For any suggestions or comments/complaints about our recruitment processes, please contact