71_25_CS_CAOS_RE1-2

Job Reference

71_25_CS_CAOS_RE1-2

Position

CPU and MPSoC Performance Engineer (RE1-2)

Data de tancament

Divendres, 28 Febrer, 2025
Reference: 71_25_CS_CAOS_RE1-2
Job title: CPU and MPSoC Performance Engineer (RE1-2)

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 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 1200 staff from 60 countries.

BSC is involved in several projects on the design of innovative RISC-V based CPU processor, accelerators, and MPSos. BSC is also carrying out activities related to the performance analysis of the latest commercial computing solutions in the market. We are looking to hire a performance engineer that will assume an important role in RTL-simulation, FPGA, and silicon performance verification for BSC RISC-V designs.

Key Duties

- Develop peak-performance benchmarks for the performance evaluation of specific hardware target systems in RTL simulation, FPGA, and silicon.
- Develop specific 'corner-case' benchmarks for the assessment of particular MPSoC functionalities. This task will be done in collaboration with the hardware engineers in charge of the RISC-V designs at BSC.
- Profile of specific applications on the target hardware systems to extract representative kernels. Applications of interest include HPC applications, AI (artificial intelligence) applications, and embedded applications
- Developing and automating the overall performance analysis infrastructure
- Identify key hardware and software bottlenecks
- Collaborate with application development teams

Requirements

- Education
  - Bachelor of Science Degree or Master of Science Degree in Computer Science, Computer Engineering, Telecommunications, or Electrical Engineering

- Essential Knowledge and Professional Experience
  - Practical experience in generic programming (C, C++, etc.)
  - Practical experience in assembly programming
  - Background on Computer Architecture
  - Familiarity with RISC-V is a plus
  - Familiarity with CPU/MPSoC performance evaluation is a plus

- Competences
  - Problem-solving, proactive, collaborative, and result-oriented work attitude
  - Good communication skills including proficiency in English (both written and spoken)

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: 01/03/2025

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](#)