

## 701\_24\_CS\_CAPP\_RE2

### Recruitment App Link

<https://webapps.bsc.es/recruitment/job/3643>

### Website Node ID

64458

### Job Reference

701\_24\_CS\_CAPP\_RE2

### Position

Vector and matrix accelerators for AI workloads - AI4S (RE2)

### Closing Date

Thursday, 31 October, 2024

**Reference:** 701\_24\_CS\_CAPP\_RE2

**Job title:** Vector and matrix accelerators for AI workloads - AI4S (RE2)

### 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**

Applications are invited for postdoc positions at the Barcelona Supercomputing Center (BSC-CNS). Research activities will be focused on one or several of the following topics, among others:

1. Research on new Vector and matrix accelerators for AI workloads
2. New numerical formats and way of computing AI related operations.
3. Reseach on increasing the locality on AI workloads.
4. Research on comunication patterns between different accelerators.
5. Software Hardware codesign for emerging LLM and foundational models.

Experience in some of these topics is strongly appreciated.

The funding for these actions/fellowships and contracts comes from the European Union Recovery and Resilience Facility - Next Generation, within the framework of the General Invitation by the public business entity Red.es to participate in the talent attraction and retention programs within Investment 4 of Component 19 of the Recovery, Transformation, and Resilience Plan.

For more information, please check: <https://www.bsc.es/join-us/excellence-career-opportunities/ai4s>



### **Key Duties**

- Conduct a research the the proposed topics
- Write papers, deliverables and patents
- Lead a team of engineers

### **Requirements**

- Education
  - Master's degree in computer architecture or electrical engineering

- Essential Knowledge and Professional Experience
  - Computer architecture, microarchitecture, memory hierarchy, networks
  - Artificial intelligence programming
  - Python, C++, RTL
- Additional Knowledge and Professional Experience
  - Performance Analysis and Tuning of parallel applications
- Competences
  - 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
- Duration: 4 years
- Holidays: 23 paid vacation days plus 24th and 31st of December per our collective agreement
- Salary: 42.000,00€
- Additional Expenses Grant: Each fellowship will be associated with a grant for additional expenses, such as IT equipment, travel, training, stays, etc.
- Starting date: asap - the incorporation for this vacancy must be before the 16th of December 2024

## 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:

1. **Curriculum Analysis:** Evaluation of previous experience and/or scientific history, degree, training, and other professional information relevant to the position. - **40 points**
2. **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 recruitment [at] bsc [dot] es.

For more information, please 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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