269_25_CASE_GC_RE2

Job Reference

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Position

Quantum-HPC Researcher in Graph Neural Networks (RE2)

Fecha de cierre

Viernes, 11 Abril, 2025
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Job title: Quantum-HPC Researcher in Graph Neural Networks (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

The Computer Applications in Science and Engineering (CASE) department mission is to develop scientific and engineering software and models to efficiently exploit HPC, Quantum Computing and Hybrid Computing capabilities. In this sense, the Department performs research studies of new computational strategies to simulate complex problems specifically adapted to run efficiently on modern supercomputers. More specifically, the group will collaborate with the Quantum Spain project that aims to promote and fund a competitive and complete quantum computing infrastructure in Spain. It will provide the present Spanish quantum ecosystem with the necessary tools to develop a solid scientific and technological fabric around quantum computing and its applications in Artificial Intelligence.

Key Duties

- The candidate will participate in evaluating artificial intelligence models to leverage such hybrid infrastructure, based on Graph Neural Networks (GNN).
- Develop a framework for implementing GNNs on quantum computers to potentially address scalability challenges when dealing with large-scale graphs.
- Contribution of the candidate to the project Quantum Spain

Requirements

- Education
    - Master degree in Engineering of mathematics and informatics

- Essential Knowledge and Professional Experience
    - Technical Expertise in Machine Learning
    - Experienced in Neural Network architectures

- Additional Knowledge and Professional Experience
    - Fluency in spoken and written English, while fluency in Spanish will be also valued

- Competences
    - Ability to work in a team and in a multi-cultural environment.

Conditions

- The position will be located at BSC within the CASE 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: temporary linked to the project and budget duration - until 31/12/2025
- 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: 01/05/2025

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