Job Reference

15_21_CS_CAPP_RE2

Position

Research Engineer - Computer Architecture for Database Applications (RE12)

Data de tancament

Divendres, 31 Desembre, 2021
Reference: 15_21_CS_CAPP_RE2
Job title: Research Engineer - Computer Architecture for Database Applications (RE12)

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, and is a hosting member of the PRACE European distributed supercomputing infrastructure. 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 700 staff from 49 countries.

Look at the BSC experience:
BSC-CNS YouTube Channel
Let's stay connected with BSC Folks!

Context And Mission

BSC is seeking a PhD student to work in an exciting research collaboration with Huawei in the topic of accelerating big data applications, primarily for database applications. The student will optimize Database Management System (DBMS) software stack for a custom DBMS/big-data accelerator that will be designed in the project. An engineer can also be considered, provided she has deep experience in the requested areas of expertise.

Key Duties
- HW/SW co-design to analyze and optimize data analytics queries (including but not limited to the TPC suite), develop the accelerator requirements driven by the analysis, and guided by the requirements design the hardware accelerator by using an architecture simulator including possible RTL design of key blocks.
- Working with, and modifying the DBMS software stack and the architectural simulator.
- Writing high-quality technical reports and papers.

Requirements

- Education
  - Master in Computer Science or Computer Engineering

- Essential Knowledge and Professional Experience
  - Ideal candidate will be knowledgeable in both Computer Architecture and DBMS systems
  - Understanding of DBMS system software stack, query planners, optimizers, relational databases, column-oriented databases.
  - Previous experience working with Postgres or MySQL running TPC-DS and TPC-H queries a plus
  - Working knowledge with big data frameworks.
  - Understanding of computer architecture, preferably in high performance computing, processor micro-architecture, memory subsystem, storage
  - Experience with architectural simulators
  - Previous hardware design experience (at RTL level) a plus

- Competences
  - Ability to work independently.
  - Ability to establish and develop research collaborations with external stakeholders.
  - Ability to present ideas and results in a precise and succinct way.

Conditions

- The position will be located at BSC within the Computer Sciences Department
- We offer a full-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Duration: Temporary - Until June 2023 renewable
- 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 of rejection of their profile.

For more information follow [this link](https://www.bsc.es/ca/join-us/job-opportunities/1521cscappe2)

Deadline

The vacancy will remain open until 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.

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This position is reserved for candidates who meet the requirements and have the legal status of disabled persons with a degree of disability equal to or greater than 33%. In case there are no applicants with disabilities that meet the requirements, the rest of the candidates without declared disability will be evaluated.