Job Reference

445_23_CS_CAOS_R1

Position

PhD student - Embedded Critical System Design and Validation (R1)

Data de tancament

Diumenge, 31 Març, 2024
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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 800 staff from 55 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.

Context And Mission

The Computer Architecture and Operating System group at the Barcelona Supercomputing Center aims to carry out research on critical embedded computing systems in charge of controlling safety-related systems of cars, airplanes, trains, and satellites. Our work is mainly carried out in the context of bilateral projects with several companies (processor companies, suppliers, and OEMs in critical systems) as well as several European-funded projects. For a complete list of publications of the group in the last years, please visit: www.bsc.es/caos, https://people.ac.upc.edu/fcazorla/, https://people.ac.upc.edu/jabella/.
The objective of this position is to work and/or research in topics related to critical real-time systems for avionics, automotive and/or space domains, in the analysis, design and verification of non-functional metrics like guaranteed performance, energy, power, and reliability. The position carries working on real boards used in critical systems (e.g. NVIDIA Orin), representative simulators (e.g. gEM5), or hardware design in SystemVerilog, Verilog, VHDL or RTL.

Key Duties

- Analyze non functional metrics (execution time, power, energy, ...) bottlenecks in code executing on representative computing platforms (e.g. GPUs, MPSoCs, ...)
- Make a design space exploration to identify the source of higher benefit
- Make hardware/software proposals to achieve the expected benefits

Requirements

- Education
  - Bachelor’s degree in Computer Sciences, Electronics, Telecommunications, or related field

- Essential Knowledge and Professional Experience
  - Knowledge on C/C++ programming

- Additional Knowledge and Professional Experience
  - FPGA prototyping
  - Computer Architecture
  - Operating Systems

- Competences
  - Problem-solving, pro-active, result-oriented work attitude
  - Good communication skills

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: 01/10/2023
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 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

Source URL (retrieved on 23 des 2023 - 21:07): https://www.bsc.es/ca/join-us/fellowships/44523cscaosr1