

JOB DESCRIPTION

Ref: 36_CS_CAOS_PDMBTA

Job Title: Postdoc: measurement-based timing analysis

About BSC:

BSC-CNS (Barcelona Supercomputing Center – Centro Nacional de Supercomputación) is the National Supercomputing Facility in Spain and manages MareNostrum, one of the most powerful supercomputers in Europe. The mission of BSC-CNS is to investigate, develop and manage information technology in order to facilitate scientific progress. With this aim, special dedication has been taken to areas such as Computer Sciences, Life Sciences, Earth Sciences and Computational Applications in Science and Engineering.

All these activities are complementary to each other and very tightly related. In this way, a multidisciplinary loop is set up: our exposure to industrial and non-computer science academic practices improves our understanding of the needs and helps us focusing our basic research towards improving those practices.

Look at the BSC experience:

[BSC-CNS YouTube Channel](#)

[BSC-CNS Corporate Video](#)

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Context and Mission of the role:

The CAOS group (www.bsc.es/caos) is a very active research group with more than 30 papers published only in the last two years. In this same period the CAOS group has led several European projects as *PROARTIS* (<http://proartis-project.eu/>), *PROXIMA* (<http://proxima-project.eu/>) and participated in others one as *MERASA* (<http://www.merasa.org/>), *parMERASA* (<http://www.parmedasa.eu/>), *VeTeSS* (<http://vetess.eu/>), *SAFURE* (<https://safure.eu/>) and *P-SOCRATES* (<http://www.p-socrates.eu/>). Also, the CAOS group is actively working with the European Space Agency around the use of multicore processors in the Space domain (some of them listed in <http://microelectronics.esa.int/ngmp/>).

We are looking for a postdoc position for advanced research in Measurement-Based Timing Analysis: relation to hardware and System software. Particular emphasis will be given to randomised platforms on which probabilistic timing analysis techniques can be applied. The main objective of this position is to research in topics related to measurement-based timing analysis. The topics cover both applied research on real boards and more theoretical research. Special emphasis will be on time-randomized probabilistically analysable real time systems.

Responsibilities:

- Coordination in advising PhD students in the topics measurement-based timing analysis techniques for both deterministic and time-randomized systems accounting for the jitter coming from hardware and the real-time operating system.
- Definition of projects in the area of probabilistic, time predictable and reliable multicore-based systems
- Definition of the new research lines around the ones mentioned above
- Performance analysis of hard-real time applications
- Timing analysis of real time system
- Timing analysis support for probabilistic real time system
- Measurement-based timing analysis techniques on real boards

All of the above cover the interaction between the hardware and the real-time operating system

Requirements:

Education:

- PhD in computer sciences (or similar degree)

Knowledge and professional experience:

- Deep experience in measurement-based timing analysis and static timing analysis
- Deep experience in working with multicore processors in the automotive domain and space domain
- Deep experience in probabilistic real time systems
- Deep experience in real-time operating systems
- Previous experience with automotive and/or space real applications
- Previous experience in the participation of European Research Projects
- 3+ years post-doctoral experience

Competences:

In order to be successful in this role the candidate should have:

- Good English level (spoken and written)
- Ability to take initiative, prioritize and work under set deadlines and pressure
- Ability to work independently and in a team

Conditions:

- The position will be located at BSC within the CAOS department in collaboration with the specific program coordinator. The contract duration will be for a 2 years, with possibility of extension.
- A competitive salary will be provided, matched to the cost of living in Barcelona, depending on the value of the candidate.
- Starting date: ASAP
- Deadline for applications: 31th of April 2016.

Applications Procedure

All applications must be done through the BSC website,

Including:

1. Motivation letter indicating a proposal strategic plan and a statement of interest (maximum 6000 characters including spaces).
2. A full CV including contact details.

Diversity and Equal Opportunity Employment

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.