119_CS_CAOS_RE12

Job Reference

119_CS_CAOS_RE12

Position

Research Engineer for avionics, automotive boards and OS setup (RE12)

Data de tancament

Dilluns, 30 Juliol, 2018

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 500 staff from 44 countries.

Look at the BSC experience:
BSC-CNS YouTube Channel
BSC-CNS Corporate Video
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Context And Mission

Applications are invited for an Engineer position in the research lines of the Computer Architecture Operating System Department (https://gateway.bsc.es:11004/caos) at Barcelona Supercomputing Center (BSC-CNS). We are offering an Engineer position for a period of 3 years (with possibility of extension) in the context of several industrial and research projects in collaboration with some of the main tools, components and OEM industries in the automotive, avionics and space domains.

As part of those projects, a number of ARM, NVIDIA, Zynq and Infineon boards, among others, need to be set up and interfaced through debug interfaces and/or low level software to monitor the execution of programs, either with or without an OS layer (i.e. Linux, RTEMS, and other embedded/real-time OSes). The engineer will be also in charge of porting applications from the critical real-time systems domains (namely automotive, avionics and space) for their evaluation on top of the identified target platforms, as a necessary step to provide industry with information on how to use those platforms reliably for the execution of their most critical software, such as that responsible of navigation in planes/satellites, and autonomous driving in cars.
This work will be carried out within a large and diverse group with experience in the domain and skilled on those tasks, thus assisting the candidate in the ramp up phase of his work at BSC. Francisco J. Cazorla is the group leader. For a complete list of publications of the group leader, please visit: http://people.ac.upc.edu/fcazorla/.

Key Duties

1. Set up the newest boards relevant for the automotive, avionics and space domains, with processors from the main chip vendors (e.g. ARM, Infineon, Zynq, NVIDIA), installing appropriate Operating Systems and testing debug and monitoring features.
2. Port applications from the aforementioned domains to those boards and profile them with the existing debug and monitoring features.
3. Provide support to all other researchers of the group using those boards and applications.
4. Document the porting and profiling processes to enable other group members to port and evaluate further applications.

Requirements

- Education
  - MSc in Computer Science (or expected to graduate in the current course). Comparable skills obtained from work experience can also be accepted
- Essential Knowledge and Professional Experience
  - Computer Architecture: micro-architecture, memory hierarchy, familiar with assembly code
  - Systems: Linux, RTEMS or other embedded/real-time OS
  - Performance Analysis of small kernels as well as parallel applications
  - Programming: C/C++, Assembler, Open MP/MPI, CUDA, scripting (shell, TCL, python, etc.), etc.
- Competences
  - Ability to take initiative, prioritise and work under set deadlines
  - Ability to work independently and in a team
  - Strong troubleshooting attitude
  - Capacity to interact and build strong relations with other research groups
  - Good verbal communication skills in English

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 hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- 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

All applications must include:
A motivation letter with a statement of interest, including two contacts for further references - COMPULSORY - Applications without this document will not be considered
A full CV including contact details

Deadline

The vacancy will remain open until suitable candidate has been hired. Applications will be regularly reviewed and potential candidates will be contacted.

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.
Barcelona Supercomputing Center - Centro Nacional de Supercomputación