402_22_CS_EEA_RE2

Job Reference

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Position

Senior technical leader (RE4)

Data de tancament

Dilluns, 31 Octubre, 2022
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Job title: Senior technical leader (RE4)

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 770 staff from 55 countries.

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

Context And Mission

The European Exascale Accelerator group at the Barcelona Supercomputing Center aims at carrying out research in topics from Computer Architecture to System Software to Applications in both traditional HPC and emerging High-Performance Data Analytics (HPDA). Our work is mainly done in the context of bilateral projects with several processor companies as well as several European-funded projects.

The objective of this position is to provide technical leadership for different European projects enhancing full-stack co-design of accelerator and processor designs, from concept to FPGA prototypes and silicon. The successful candidate can help to build teams composed of young and dynamic researchers to seasoned veterans researching hardware/software co-design for high-performance processor and/or accelerator designs. These designs are based on open source ecosystems from ISAs to applications. The engineer is expected to have some significant experience (either in industry or academia) in hardware prototyping (RTL,
Candidates with 7-20+ years of experience are wanted, although other profiles may be considered.

The successful candidate will have a mix of technical and people management skills, a demonstrated track record of success, and excellent verbal and written skills. This position offers the possibility to collaborate with research institutions and industry from several European locations, thus offering enriching experiences and opportunities to learn.

**Key Duties**

- Group leadership for a team of hardware and software researchers and developers.
- Provide technical leadership for projects from concept to completion.
- Define, implement and execute on the technical vision with high-quality outcomes with minimal risk.
- To write high-quality technical reports and papers.
- Contribute to deliverables and milestones from different EuroHPC, ECSEL, IMI, and other European projects.
- Provide technical support project coordinators.
- Verify technical aspects of hardware and software contributions and implementation studies.
- Contribute to supervise other junior members of the team.
- Work together with other researchers and developers and ensure the appropriate implementation of previously agreed standards and methodologies.

**Requirements**

**Education**
- Master, PHD or Grade in Computer Science, Electronics, Telecommunications or Automation
- Comparable skills obtained from work experience can also be accepted

**Essential Knowledge and Professional Experience**
- At least 10 years of professional experience in similar roles.
- At least 10 years of professional experience in the design, implementation and deployment of research projects in Computer Architecture, Systems, or HPC.
- At least one of the following:
  - Deep understanding of high-performance computing codes, including both inter-node communications (E.g. MPI), intra-node parallelism (E.g. OpenMP) and low-level optimizations.
  - Deep understanding of high-performance computing architectures, including floating-point accelerators (GPUs, vector architectures).
  - Computer Architecture: micro-architecture, memory hierarchy, familiar with assembly code
  - Practical experience designing digital hardware designs (RTL, VHDL or Verilog)
- 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.
- Familiarity with basics on digital processor or microcontroller designs, either as part of his/her studies or work experience
- Experience working with Unix/Linux systems

**Additional Knowledge and Professional Experience**
Knowledge of processor microarchitecture (e.g. Arm, Infineon, Intel, or AMD processors among others) is welcome
Knowledge of electronics is welcome
Experience with FPGA use and debug tools is also welcome
Experience with cloud and/or edge computing
Deep understanding of simulators, performance analysis tools and performance modeling methodologies

- Competences
  - Team leadership skills
  - Good writing and presentation skills.
  - Used to work under pressure under strict deadlines.
  - Experience in developing project technical specifications.
  - Project management skills: reporting, documenting, and planning.
  - Ability to work independently and in a team
  - Ability to establish and develop research collaborations with external partners
  - Ability to present ideas and results in a precise and succinct way
  - Ability to take initiative, prioritize and work under set deadlines
  - Strong troubleshooting attitude
  - Capacity to interact and build strong relations with other research groups
  - Problem-solving, pro-active, result-oriented work attitude
  - Strong technical writing skills
  - Strong personal soft-skills sets: Communicative, enthusiastic, highly collaborative, proactive, self-driven
  - Excellent communication skills including a good command of the English language (written and spoken)

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: Open-ended contract due to technical and scientific activities linked to the project and budget duration
- 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 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