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Job Reference

246_LS_CG_RE1

Position

Developer - Big Data in Cancer (Bioinformatics)

Data de tancament

Dimecres, 27 Desembre, 2017

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 460 staff from 44 countries.

Look at the BSC experience:

BSC-CNS YouTube Channel

BSC-CNS Corporate Video

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Context and Mission
The group of Computational Genomics at the Barcelona Supercomputing Center is intensively involved in several world-wide initiatives that aim to understand the genomic basis of disease, in general, and of Cancer, in particular, to ultimately contribute to the generation of personalized diagnosis, prevention and treatment protocols for health. This activity takes place within the BSC, which hosts one of the largest supercomputers in Europe: the Marenostrum, around which we develop HPC-based tools, as well as tools linked to other technologies and architectures, like GPUs and GFAs. Among the major scientific achievements, we can highlight the design of the SMUFIN software for the fast identification of somatic variants in cancer genomes, and its application for the analysis of chromosomal alterations in Chronic Lymphocytic Leukemia genomes. These, and other related activities, have now positioned our center among the top computing institutions in the world involved in the analysis of disease genomes (some selected publications: Puente et al, Nature 2011; Moncunill et al, Nature Biotech. 2014; Bønnelykke et al, Nature Genetics, 2014; Puente et al, Nature 2015; Horikoshi et al, Nature 2016; Heyn H, et al, Genome Biol. 2016). The BSC is currently one of the few computing centres around the world with the task of analyzing up to 3000 tumor genomes within the world-wide and largest cancer genomics project: ICGC-PanCancer project (www.icgc.org). In addition, the BSC is also actively contributing to the design and establishment of a new medical and computational frame based on personalized and genomic-based clinical protocols within the public healthcare systems of Catalunya and Spain. All this activity is carried out within a dynamic and multidisciplinary group that cover biomedical, biological and computer expertises, as well as strong collaborations with different hospitals and other centers.

From our group, we open one position for researchers with a computer background to design and development of software-hardware integrated solutions for the analysis of disease genomes in close collaboration with biological and biomedical colleagues. In particular, the selected candidate will be part of a subgroup in charge of the development and improvement of several software solutions, taking in consideration the algorithm and its implementation in the context of HPC and specific hardware architectures for the analysis of big data. This involves the handling of thousands of genomic sequences and biomedical data, which offers a great opportunity to enter and evolve within the expanding field of Bioinformatics and Biomedicine, which currently have strong computational needs and provides many interesting challenges. The BSC environment also offers computer scientists an opportunity to work within one of the first supercomputing centers in Europe that combine different expertise, covering from computer architecture to programming models and software development and implementation, in collaboration with scientist with biological and biomedical expertise.

We will give priority to highly motivated and proactive candidates with a computer background and with the ambition to develop his/her carrier around the field of computational genomics and biomedicine.

More information about the group and the activity can be found at: http://www.bsc.es and http://cg.bsc.es/cg/

**Key Duties**

- Develop, improve and apply software for genome analysis in the context of cancer genome projects
- Contribute and be part of the general activity of the group, sharing goals and procedures

**Requirements**

- **Education**
  - Diploma/Bachelor degree in Computer Science or related discipline
- **Knowledge and Professional Experience**
  - Programming in c/c++ and mpi/openmpi will be preferred
  - This position requires good programming skills at different levels, but mostly in the context of HPC
- **Competences**
  - Good written and verbal communication skills in English
- Ability to take initiatives, prioritize the tasks and work under set deadlines
- Ability to work both independently and within a multidisciplinary environment

Conditions

The position will be located at BSC within the Management Department. The contract will be temporary.

Applications Procedure

All applications must include:

- 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.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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