Job Reference

298_LS_CG_RE23

Position

Bioinformatics/Computational Engineer for an International Cancer Genomics project

Data de tancament

Diumenge, 31 Març, 2019

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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, 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

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Context And Mission

The Computational Genomics group is looking for a highly motivated computational engineer (or related background) willing to contribute to the field of cancer genomics. The group is currently pushing and coordinating different international initiatives to develop and implement bioinformatics and computational infrastructures for genomic oncology, which will support personalized diagnosis, prevention and treatment protocols within a Personalized Medicine environment. All this activity is carried out within a international and collaborative working environment that involves leading groups and consortia in the field of oncology, bioinformatics and computing.

In particular, the group is coordinating the EUsropean-Canadian Cancer (EUCANCan) project (see https://www.bsc.es/news(bsc-news(bsc-coordinates-international-project-share-and-reuse-cancer-genomic-data-global-level and https://www.lavanguardia.com/vida/20190207/46281638757/nace-un-proyecto-internacional-para-compartir-datos-genomicos-sobre-el-cancer.html), which aims at supporting and
enhancing modern oncology, by implementing a cultural, technological and legal integrative framework across Europe and Canada, for the efficient analysis, management and sharing of cancer genomic data. This cooperative framework is not only expected to immediately contribute to improve biomedical research in cancer, but to also serve as a model for globalizing and enriching Personalized Medicine initiatives around the world, allowing the exchange of data, clinical experience and information across different healthcare systems.

The project involves leading participant centers in Canada and Europe, such as the Ontario Institute for Cancer Research (OICR), the International Cancer Genome Consortium (ICGC), the Institute Curie in Paris, the Charité Hospital in Berlin, as well as three of the major hospitals and research centers of our country (IDIBAPS-Hospital Clinic, VHIO-Hospital Vall d’Hebron, and IDIBELL-Hospital de Bellvitge), which also generates an ideal network and environment to foster computing and bioinformatic professional careers. In order to build the computing and methodological infrastructure within this project we seek a motivated candidate with strong computational background able to contribute to overcome the challenges of developing and integrating different methods and pipelines for the analysis of genomic NGS sequences, into high performance and cloud supercomputing environments. Specifically, this involves dealing with, among others, container-based virtualization (eg. docker and singularity), big data, protocols and/or technologies to deploy tools and pipelines both locally and remotely, and working with container and pipeline repositories (eg. Dockstore and EOSC BioContainers).

Priority will be given to highly motivated, persistent and proactive candidates with a computer-related background and with the ambition to develop their career in the field of computational genomics and biomedicine.

More information about the group and the activity of the department can be found at:
http://www.bsc.es/discover-bsc/organisation/scientific-structure/computational-genomics

**Key Duties**

- Set up the EUCANCan infrastructure within the BSC, which includes:
  - Development, automation and porting of containerized genomic data analysis workflows in both HPC and cloud environments
  - Installation and deployment of data management and transfer services
- Research and benchmarking of bioinformatics tools and pipelines for the analysis of omic data in biomedicine
- Contribute to the development of technical standards and protocols to improve genomic and clinical data sharing
- Attend project meetings around the world and contribute to project deliverables and teleconferences

**Requirements**

- **Education**
  - Diploma/Bachelor degree in Computer Science or related disciplines. Candidates with a Biology background and demonstrated strong technical expertise will also be considered

- **Essential Knowledge and Professional Experience**
  - Minimum 4 years of experience in UNIX/Linux environments, shell scripting and system tools
  - Experience with system installation and deployment
  - Experience with two or more of the following scripting languages: Perl, Python, Bash, R
  - Prefered with 2 years of experience with container technologies (e.g. Docker, Singularity)

- **Additional Knowledge and Professional Experience**
Knowledge in cancer genomics and NGS analysis
Experience in version control systems (git)
Experience in high performance computing, cloud infrastructures and/or containerization (docker, singularity)
Academic or professional experience in bioinformatics resources, databases and tools

Competences
- Fluency in spoken and written English
- Ability to work in a professional environment within a multidisciplinary and international team
- Ability to work independently and in a team
- Ability to take initiative, prioritize and work under set deadlines and pressure
- Quick and enthusiastic learner

Conditions
- The position will be located at BSC within the Life 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
- Duration: Temporary - 2 years renewable
- 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 - 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.
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