219_20_LS_CB_RE2

Job Reference

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Position

Research Engineer - Development of data science web apps for epidemiology (RE2)

Closing Date

Wednesday, 30 September, 2020
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Job title: Research Engineer - Development of data science web apps for epidemiology (RE2)

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 650 staff from 49 countries.

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Context And Mission

The Computational Biology group, led by ICREA professor Alfonso Valencia, is looking for a Postdoctoral Researcher to join a national-founded project on data analysis and modeling in epidemiology. The researcher will be responsible to develop a framework for large-scale data analytics to monitor the COVID-19 pandemic in Spain based on geographical information and official statistics reports from public authorities.

The Computational Biology Group (http://life.bsc.es/compbio), within the Life Sciences Department at the BSC, is involved in multiple projects covering several areas of precision medicine, systems biology, network science, and epidemiology. In collaboration with Universidad Rovira y Virgili, the Group has been recently granted a project funded by the Generalitat to design and implement a computational framework to analyse and report on the dynamics of COVID-19 in Spain. The geographical information system (GIS) is expected to integrate heterogeneous sources of geo-referenced data, including daily reported COVID-19 cases and
mobile phone mobility data, to monitor the pandemic at country level and detect potential risk zones.

The Researcher will work in a highly sophisticated High-Performance Computing (HPC) environment, will have access to state-of-the-art systems and computational infrastructures, and will establish collaborations with both international and local experts in different areas of biomedical research. In particular, the candidate will work in collaboration with senior researchers in the Group, the Universidad Rovira y Virgili, and the Spanish National Bioinformatics Institute (INB) coordination node.

**Key Duties**

- Mining and analysis of official reports of COVID-19 cases and mobile phone mobility data.
- Data integration through an interactive geographical information system.
- Modeling COVID-19 progression at country level.
- Preparation and presentation of scientific articles.
- Collaborate in the preparation and presentation of scientific projects.
- Establish and maintain collaborations with international researchers.

**Requirements**

- **Education**
  - PhD in Computer Science with a strong background in databases and systems for capturing, storing and interrogating large volumes of data; or
  - PhD in Applied Mathematics, Physics, Statistics or similar with a strong background in data modeling; or
  - PhD in Earth Sciences or similar with a strong background in handling of geolocalized data.

- **Essential Knowledge and Professional Experience**
  - Experience in databases and/or data modeling and/or geographical information systems.
  - Interest in the Life Sciences area, in particular epidemiology.

- **Additional Knowledge and Professional Experience**
  - Knowledge and experience in Life Sciences research with special emphasis on epidemiology
  - Knowledge and experience in data management and modeling:
    - Non-relational databases, in particular MongoDB
    - Geographical information systems and cartography
    - Epidemiological models and time series analysis
  - Programming: Python, R, Julia, Matlab, Java, C++, Git

- **Competences**
  - Fluency in spoken and written English
  - Capacity to explore and exploit new research lines
  - Good communication and presentation skills
  - Ability to work both independently and within a team
**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 working hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Duration: Temporary - 1 year, renewable 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 Cover Letter with a statement of interest in English, including two contacts for further references - Applications without this document will not be considered
- A full CV in English 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.

This position is reserved for candidates who meet the requirements and have the legal status of disabled persons with a degree of disability equal to or greater than 33%. In case there are no applicants with disabilities that meet the requirements, the rest of the candidates without declared disability will be evaluated.

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