543_23_LS_CB_R0

Job Reference

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Position

Master Student - Computational Biology Group (R0)

Data de tancament

Diumenge, 31 Desembre, 2023
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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, was a founding and hosting member of the former European HPC infrastructure PRACE (Partnership for Advanced Computing in Europe), and is now hosting entity for EuroHPC JU, the Joint Undertaking that leads large-scale investments and HPC provision in Europe. 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 900 staff from 55 countries.

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

We are particularly interested for this role in the strengths and lived experiences of women and underrepresented groups to help us avoid perpetuating biases and oversights in science and IT research.

Context And Mission

The Computational Biology group, led by ICREA professor Alfonso Valencia, is looking for a Master student to work on a multiscale modelling project, and more specifically, on the modelling of COVID-19 infection dynamics combining an upper airways simulator (Alya) together with a simulator of the infection of the epithelial epithelium (PhysiBoSS). The project will involve the building of a digital twin of a drug
assay in COVID-19 patients that identifies the best treatment for each patient and condition. To do so, the student will need to bridge from the virus delivery on the lung epithelial cells and its effects on the cells’ pathways up to the distribution of viruses in the different alveoli to find interventions points in the COVID-19 infection of lung cells that explain the different patients’ response.

The successful candidate will join a dynamic research group within the Life Sciences department, which integrates independent senior scientists that work on various aspects of computational biology, ranging from bioinformatics for genomics and proteomics to computational biochemistry and text mining. The Researcher will work in a highly sophisticated HPC environment, have access to systems and computational infrastructures, and establish collaborations with experts in different areas.

Key Duties

- Gather data from publicly available databases and gather information on COVID-19 treatments that allow for the tailoring of the multiscale simulation to each patient subtype.
- Explore the use of clinical data (transcriptomics, anatomopathological images, etc) to personalise models to patients with different COVID-19 symptoms.
- Query these digital twins to identify intervention points that may be specific for a given subset of patients.
- Define the interaction between the tools and their integration into a common workflow that scales efficiently in HPC systems such as MareNostrum 4 and 5.
- Collaborate in the preparation and presentation of research projects.
- Participate in internal group meetings and other scientific discussions.

Requirements

- Education
  - Degree in Bioinformatics, Biotechnology or any field related to biomedicine
  - Degree in Mathematics, Physics or any field related to engineering

- Essential Knowledge and Professional Experience
  - Knowledge of UNIX/Linux environments
  - Good programming skills (Python, C++)
  - Cellular biology: signalling pathways, mechanisms of infection
  - Computational biology: data analysis, data integration, modelling.
  - Ability to access and evaluate scientific literature.
  - Strong interest in the information gathering, analysis, modelling and simulation of biological systems.

- Additional Knowledge and Professional Experience
  - Knowledge and experience in life sciences research
  - Knowledge and experience in AI methodologies.
  - Programming: Python (scikit-learn, numpy, matplotlib), R, C++, Git
  - Fluency in spoken and written English

- Competences
  - 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 part-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, support to the relocation procedures
- Duration: until 30/06/2024
- Holidays: 23 paid vacation days plus 24th and 31st of December per our collective agreement
- 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: 01/01/2024

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 a 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

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