353_20_LS_ICONBI_RE123

Job Reference

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Position

Research Engineer (RE123)

Data de tancament

Divendres, 31 Desembre, 2021
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Job title: Research Engineer (RE123)

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 700 staff from 49 countries.

Look at the BSC experience:
BSC-CNS YouTube Channel
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Context And Mission

Professor Nataša Prulj is looking for a Research Support Engineer to work in her Integrative Computational Network Biology (ICONBI) group (overview of the group is at https://www.bsc.es/discover-bsc/organisation/scientific-structure/integrative-computational-network-biology-iconbi). The post-holder will participate in the process of finding, designing and implementing new algorithms, Data Science and AI solutions to challenges related to the research projects the group is working on.

The ICONBI research group performs research in the design of novel network science and machine learning algorithms carefully tuned to extract new biomedical information from systems-level omics data to aid Personalized Medicine. The group actively collaborates with researchers from other fields, with the goal of applying machine learning to challenging problems in systems biology and precision medicine. The group is involved in multiple research projects, including the prestigious ERC Consolidator grant of Prof. Prulj.
Although ICONBI is open to all aspects of algorithmic development and AI, currently the main lines of research are omics data fusion by non-negative matrix tri-factorization (NMTF) and graph (or network science) algorithms.

The Researcher will work in a highly sophisticated HPC environment, will have access to state-of-the-art systems and computational infrastructures, and will establish collaborations with experts in different areas both at the local and international levels.

**Key Duties**

- Work, in collaboration with the members of the group, on the design and implementation of new Machine Learning and other algorithms and solutions needed to achieve the goals of the group’s research projects
- Interact with relevant stakeholders of the group’s research projects to understand their problems and the available data in order to formulate useful algorithmic solutions
- Provide processing, quality and annotation of NGS and other omics data sets, as needed
- Implement and maintain the source code, the software platform and any required databases for storing and manipulating the omics data with the group’s new methods
- Data visualization and report generation
- Develop web interfaces for the computational solutions of the group, that provide data analytics, interpretation and dissemination
- Contribute to the design and development of HPC and cloud-based workflows and software solutions required by the group
- Maintain the group’s web pages and provide online dissemination of the group’s results
- Provide support in the design and preparation of new projects
- Follow software development best practices
- Collaborate with the members of the group in the project management activities

**Requirements**

- **Education**
  - BSc in Computer Science, Applied Mathematics, or a related discipline
  - MSc in Bioinformatics, Computer Science, Artificial Intelligence, Machine Learning, or a related discipline

- **Essential Knowledge and Professional Experience**
  - Good knowledge of C/C++ and Python
  - Knowledge of Test-Driven Design and/or Development
  - Knowledge of Continuous Integration/Delivery/Deployment, including tools such as (or similar to) Terraform, GitLab CI, Docker and/or Ansible
  - Knowledge of mathematics, optimization and statistics applied to Machine Learning
  - Knowledge of molecular data and bioinformatics tools and algorithms

- **Additional Knowledge and Professional Experience**
Knowledge of: Javascript/node.js, C#, Matlab and/or Java
Experience in machine learning and data mining, including knowledge of Keras, PyTorch, Tensorflow, Pandas, Scikit-learn and/or Numpy.
Knowledge of agile methodologies for project management, eg. Kanban
Experience in optimisation and parallelisation, ideally in HPC clusters
Theoretical broad knowledge of AI techniques, such as Deep Neural Networks, Natural Language Processing (NTLK), Reinforcement Learning
Experience in configuring and querying Database Systems, such as SQL (e.g. MySQL) and NoSQL (e.g. MongoDB, Elasticsearch), and in Unix
Experience in working with source code repositories (e.g. Github, BitBucket, etc.)
Experience in -omics bioinformatics techniques, including NGS data processing pipelines (mapping, variant calling, filtering, etc), integration of clinical and experimental data from different sources, reproducibility and portability of analysis workflows
Experience using public databases (Reactome, OMIM, GO, PharmGKB, PDB, TCGA, ClinVar, dbSNP etc)
Experience in research and in dissemination activities, including paper writing

Competences
- Fluency in spoken and written English
- Capacity to explore new research lines
- Good communication and presentation skills
- Ability to work within a team and within a pair (pair programming)

Conditions
- The position will be located at BSC within the Life Sciences Department
- We offer a full-time contract, a good working 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
- 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
- All university transcripts (BSc and MSc)

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 of 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

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