521_23_LS_CB_RE2

Job Reference

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Position

Research Engineer – Explainable Artificial Intelligence for Health (RE2)

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Diumenge, 31 Desembre, 2023
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Job title: Research Engineer – Explainable Artificial Intelligence for Health (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, 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 High-Performance Artificial Intelligence group, led by Professor Ulises Cortés, and the Computational Biology group, led by ICREA professor Alfonso Valencia, are looking for a research engineer to work in the context of explainability in Artificial Intelligence.

The Computer Sciences and Life Sciences Departments at the BSC integrate the independent research of senior scientists who work on various aspects of computer science, including system architecture,
programming models, performance tools, and computational biology, including bioinformatics for genomics to computational biochemistry and text mining. The High-Performance Artificial Intelligence group (http://hpai.bsc.es) and the Computational Biology group (http://life.bsc.es/compbio) are involved in multiple projects covering a wide range of topics including Artificial Intelligence solutions, problems and infrastructure provided by HPC, as well as their applications to personalized medicine, genomics, network and systems biology.

The candidate will work in collaboration with senior researchers in the High-Performance Artificial Intelligence group of the Computer Sciences Department and the Computational Biology Group of the Life Sciences Department. The work is in the framework of the research lines of both groups, which include agent-based models, deep neural networks applied to image processing, graph representations and analysis, multi-omics data integration, sequence-based protein coevolution, social impact and ethics in science and technology.

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 international and local levels. In particular, the Researcher’s tasks will involve applying and developing methods for explainable Artificial Intelligence for several use cases, including the processing and study of medical images as well as molecular and clinical information.

The task will focus on the collection, analysis and modelling of biomedical data of different types and the use of state-of-the-art approaches to achieve explainability and move forward the research in this area.

Key Duties

- Application of Artificial Intelligence methods, with special emphasis on solutions for the analysis, modeling and interpretation of biomedical data.
- Use computational methods based on statistical and inference approaches to answer complex biomedical questions and facilitate the adoption of trustworthy Artificial Intelligence in the health domain.
- Integration of heterogenous sources of biomedical information using advanced data mining and machine learning techniques.
- HPC solutions for machine learning applications in life sciences.
- Preparation and presentation of scientific articles.
- Establish and maintain collaborations with national and international researchers.

Requirements

- Education
  - PhD in computer science or bioinformatics with a machine learning component.
  - Alternatively, an MSc in machine learning or Bioinformatics, with a strong computer science background or background in applied mathematics/physics with demonstrated experience in machine learning methods.

- Essential Knowledge and Professional Experience
  - Experience in machine learning methodologies.
  - Interest in Artificial Intelligence applications for life sciences.

- Additional Knowledge and Professional Experience
Knowledge and experience in biomedical research.
Knowledge and experience in data science methodologies:
  - Data pre/post-processing (feature selection, dimensionality reduction, plotting and visualization)
  - Medical imaging
  - Deep learning theory and frameworks (PyTorch, Keras, TensorFlow)
  - High-performance computing (HPC)
  - Fundamentals of linear algebra
  - Bayesian inference
Fluency in spoken and written English.

- Competences
  - Capacity to explore 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 (37.5h/week), a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible working hours, extensive training plan, restaurant tickets, private health insurance, support to the relocation procedures
- Duration: Open-ended contract due to technical and scientific activities linked to the project and budget duration
- 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
Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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