

[511_24_LS_LS_R3](#)

Job Reference

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Position

Postdoctoral Researcher - AI/ML in specific research lines in Life Sciences (R3) - AI4S

Data de tancament

Dilluns, 16 Setembre, 2024

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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 1000 staff from 60 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. In instances of equal merit, the incorporation of the under-represented sex will be favoured.

We promote Equity, Diversity and Inclusion, fostering an environment where each and every one of us is appreciated for who we are, regardless of our differences.

If you consider that you do not meet all the requirements, we encourage you to continue applying for the job offer. We value diversity of experiences and skills, and you could bring unique perspectives to our team.

Context And Mission

Lead by Professor Alfonso Valencia, the Life Sciences department seeks to lead the development of Personalized Medicine, covering the full complexity of biomedicine from molecular/atomic to physiological levels and addressing current and future challenges.

The Life Sciences Department comprises (<https://www.bsc.es/discover-bsc/organisation/scientific-structure/life-sciences>) 174 researchers distributed in 6 research groups (Computational Biology; Computational Genomics; Electronic and Atomic Protein Modelling; Integrative Computational Network Biology; Comparative Genomics and Transcriptomics and Functional Genomics Lab) and 6 support units (Genome Informatics; Social Link Analytics; Machine Learning for Biomedical Research; Language Technologies; Natural Language Processing for Biomedical Information Analysis; and the INB/ELIXIR-ES Compute and Coordination nodes), providing transversal technical expertise in specific areas and projects.

The Department leads the computational aspects of the Personalised Medicine movement at European level developing technologies to interpret omic and biomedical information, including genome analysis of humans and microbiome, enzyme and drug design, and electronic medical record analysis and imaging with AI/ML methods. The next great advances in medicine, including AI/ML and simulations toward “human digital twins”, will require powerful and specialised co-designed software/hardware systems. The Department leads key initiatives uniquely blending science and engineering to build strategic alliances, secure diverse funding sources, and create sustainable HPC and HPDA infrastructures to tackle these complex problems.

The Department is looking to hire several postdoctoral profiles in the context of the BSC AI4Science Fellowships (AI4S) in the following research lines and groups:

- Comparative Genomics and Metagenomics (Comparative Genomics - <https://www.bsc.es/discover-bsc/organisation/research-departments/comparative-genomics>)
- Large language models applied to proteins (Computational Biology - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/computational-biology>)
- Genotypes in machine learning models (Computational Genomics - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/computational-genomics>)
- AI algorithms for precision medicine (Integrative Computational Network Biology - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/integrative-computational-network-biology-iconbi>)
- AI methods applied to Drug Design (Electronic and Atomic Protein Modeling - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/electronic-and-atomic-protein-modeling-eapm>)
- Large language models applied to proteins (Computational Biology)
- AI methods applied to Drug Design (Electronic and Atomic Protein Modeling)
- Generative AI for Multi-scale Representation of Genomes (Genome Informatics)
- Topological analysis (New BSC group)
- Human transcriptome regulation in health and disease (Transcriptomics and Functional Genomics Lab - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/transcriptomics-and-functional-genomics-lab-tfgl>)
- Generative AI for Multi-scale Representation of Genomes (Genome Informatics - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/genome-informatics>)
- Language Technologies - <https://www.bsc.es/discover-bsc/organisation/research-departments/language-technologies-unit>
- Machine Learning for Biomedical Research - <https://www.bsc.es/discover-bsc/organisation/research-departments/machine-learning-biomedical-research>
- Natural Language Processing for Biomedical Information Analysis - <https://www.bsc.es/discover->

bsc/organisation/research-departments/nlp-biomedical-information-analysis

- Social Link Analytics - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/social-and-media-impact-evaluation>

- Spanish National Bioinformatics Institute - <https://www.bsc.es/discover-bsc/organisation/scientific-structure/national-institute-bioinformatics-elixir-node-0> & <https://www.bsc.es/discover-bsc/organisation/scientific-structure/spanish-national-bioinformatics-institute-inbelixir>

- Topological analysis applied to biomedicine (New BSC group)

Candidates must specify their preferred research line and group in their motivation letter.

The funding for these actions/fellowships and contracts comes from the European Union Recovery and Resilience Facility - Next Generation, within the framework of the General Invitation by the public business entity Red.es to participate in the talent attraction and retention programs within Investment 4 of Component 19 of the Recovery, Transformation, and Resilience Plan.

For more information, please check: <https://www.bsc.es/join-us/excellence-career-opportunities/ai4s>

"La financiación de estas actuaciones/becas y contratos, procede del Mecanismo de Recuperación y Resiliencia de la Unión Europea-Next Generation, en el marco de la Invitación General de la entidad pública empresarial Red.es para participar en los programas de atracción y retención del talento dentro de la Inversión 4 del Componente 19 del Plan de Recuperación, Transformación y Resiliencia.

Para más información: <https://www.bsc.es/join-us/excellence-career-opportunities/ai4s>



Key Duties

- Collaborate with a multidisciplinary team of scientists in the scope of the aforementioned research lines.
- Contribute to writing research projects and publish research findings.
- Participate in technical meetings with internal and external collaborators, lead technical discussions.
- Supervise junior researchers and provide mentorship in their career path.
- Liaise with BSC support departments when necessary as responsible person of specific projects (Technology Transfer, Legal, Project Management Office).

Requirements

- Education
 - PhD in computational biology, bioinformatics, physics, machine learning or related fields.
- Essential Knowledge and Professional Experience
 - At least 3 years' of postdoctoral experience in the same or in a related area.
 - Proven excellent scientific publication track record in the same or a related area.
 - Knowledge of UNIX/Linux environments
 - Proficiency in Python, R or equivalent programming languages

- Additional Knowledge and Professional Experience
 - Experience in high performance computing
 - Background or interest in life sciences
 - Fluency in English is essential. Proficiency in Spanish and other European languages would be advantageous.
- Competences
 - Capacity to explore new research lines
 - Excellent communication and presentation skills
 - Ability to work both independently, within a team and in a multi-cultural environment.

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
- Duration: 4 years
- Holidays: 23 paid vacation days plus 24th and 31st of December per our collective agreement
- Salary: 55.00,00€
- Additional Expenses Grant: Each fellowship will be associated with a grant for additional expenses, such as IT equipment, travel, training, stays, etc.
- Starting date: asap - the incorporation for this vacancy must be before the 16th of December 2024

Applications procedure and process

All applications must be submitted via the BSC website and contain:

- A full CV in English, including contact details.
- A cover/motivation letter with a statement of interest in English, clearly specifying for which specific area and topics the applicant wishes to be considered. Additionally, two references for further contacts must be included. Applications without this document will not be considered.

Development of the recruitment process

The selection will be carried out through a competitive examination system ("Concurso-Oposición"). The recruitment process consists of two phases:

1. **Curriculum Analysis:** Evaluation of previous experience and/or scientific history, degree, training, and other professional information relevant to the position. - **40 points**
2. **Interview phase:** The highest-rated candidates at the curriculum level will be invited to the interview phase, conducted by the corresponding department and Human Resources. In this phase, technical competencies, knowledge, skills, and professional experience related to the position, as well as the required personal competencies, will be evaluated. - **60 points**. *A minimum of 30 points out of 60 must be obtained to be eligible for the position.*

The recruitment panel will be composed of at least three people, ensuring at least 25% representation of women.

In accordance with OTM-R principles, a gender-balanced recruitment panel is formed for each vacancy at the beginning of the process. After reviewing the content of the applications, the panel will begin the interviews, with at least one technical and one administrative interview. At a minimum, a personality questionnaire as well as a technical exercise will be conducted during the process.

The panel will make a final decision, and all individuals who participated in the interview phase will receive feedback with details on the acceptance or rejection of their profile.

At BSC, we seek continuous improvement in our recruitment processes. For any suggestions or comments/complaints about our recruitment processes, please contact recruitment [at] bsc [dot] es.

For more information, please 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