

JOB DESCRIPTION

Ref: (internal HR)

Funding Project: LinDaFIX (RecerCaixa)

Duration of the contract: 3 years

Job Title: PhD student

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 500 staff from 44 countries.

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Context and Mission

PhD position in the CASE department at the Barcelona Supercomputing Center

We are looking for strong international candidates (speaking Spanish not required) to fill a PhD student position in the area of Data Integration and Analysis, in the Smart Cities group at the Computer Applications in Science and Engineering Department (CASE). The student will be part of a team including researchers and professors from the Barcelona Supercomputing Center and Universitat Politècnica de Catalunya, covering the areas of Semantic Technologies, Data Mining, Natural Language Processing, and High Performance Computing. This project is motivated by our desire to increase the efficiency and impact of social services by improving the detection of vulnerable members of our society. The topic fits and extends the objectives of the LinDaFIX project, funded by RecerCaixa (Obra Social la Caixa) and supported by the collaboration of the Ajuntament de Barcelona.

This PhD topic will involve research in most (although possibly not all) of the following: (1) semantic technologies - ontology design, automated reasoning, incremental change computation, semi-automatic ontology extension and mapping, and (2) analysis and prediction - pattern and anomaly detection, machine learning, natural language processing. We will insist on getting results that can improve the quality of the relevant data, help social workers make better decisions, and guide resource allocation based on insights from the integration and analysis of big datasets. We count with the collaboration of the Social Services department of the Ajuntament de Barcelona, which is interested in implementing the result of the project in the daily activities. This gives this project a potentially big real-world impact and visibility.

Key Duties

- Research
- Publishing
- Interacting with the Social Services department of the Ajuntament de Barcelona (City Council)

The candidate will work closely with Maria-Cristina Marinescu and Maria Ribera. When specific expertise may be required, the candidate will also work with Ernest Teniente (UPC) and a few other researchers at CASE.

Requirements

- Education
 - Master degree in Computer Science or Mathematics. Exceptional candidates with a different background may be considered.
- Essential Knowledge and Professional Experience
 - Experience in one of the following topics, and interest in learning the other:
 - (1) Formal reasoning / Semantic technologies
 - (2) Data mining / Machine learning
 - Good programming skills
- Additional Knowledge and Professional Experience
 - Experience with graph algorithms and/or parallelization / HPC a plus
 - Statistics knowledge a plus
- Competences
 - Fluency in spoken and written English
 - Highly motivated to do research

Conditions

- The position will be located at BSC within the CASE department
- We offer a full-time contract, a good working environment, a highly stimulating environment with state-of-the-art infrastructure, flexible hours, extensive training plan, tickets restaurant, private health insurance, full support for the relocation procedures.
- Salary: we offer a competitive salary commensurate with the qualifications and experience of the candidate and according to the cost of living in Barcelona
- Duration of the contract: 3 years, with a test period of 6 months
- Starting date: ASAP

Applications Procedure

All applications must include:

- A motivation letter with a statement of interest, including three contacts for further references
- A full CV including contact details

Deadline

The vacancy will remain open until a 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.