584_22_CASE_DT_R1

Job Reference

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Position

PhD Student - Digital design strategies to certify and manufacture robust composite structures (R1)

Data de tancament

Dimecres, 31 Gener, 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 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

You will be in the context of the DIDEAROT project, a Horizon Europe project in the field of aeronautics. The DIDEAROT project aims at bringing a digital centerpiece approach that could integrate the move to more digital designs in the aircraft industry. It will cover the robust optimization of composite structures focused on digital predictions of two key aspects in its lifetime:

a) Manufacturing: predicting distortions, stress build-up, and assembly challenges for ever-more integrated industrial-scale composite parts
b) Impact events: predicting damage from low- and high-velocity impact events.

Key Duties

- The PhD thesis will focus on impact events on composite structures. Within this framework, the main objectives of the PhD will be the following:
  i. Application of the Alya multiphysics code to conduct impact simulations to model the damage behaviour at the mesoscale level by means of High-Performance Computing.
  ii. Investigate Machine Learning strategies for predicting damage under impact events.
  iii. Publication of the conducted work in peer-reviewed international journals and participation in international conferences and annual project meetings.
  iv. Interaction with other researchers across different organizations.

Requirements

- Education
  - You have a Bachelor's or equivalent degree in Mechanical or Aeronautical engineering.
  - A Master's in mechanics of materials or machine learning will be very valuable.

- Essential Knowledge and Professional Experience
  - You are familiar with Python, Matlab, Fortran, or related.
  - You are familiar with or able to learn current AI frameworks such as TensorFlow, Keras, or PyTorch in the context of HPC.

- Competences
  - You are committed to personal development and can demonstrate to be autodidactic and have organizing, problem-solving, and interaction skills.

Conditions

- The PhD will be conducted between Barcelona Supercomputing Center and AMADE Research group at the University of Girona.
- 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 working hours, extensive training plan, tickets restaurant, private health insurance, fully support to the relocation procedures
- Duration: Open-ended contract due to technical and scientific activities linked to the project and budget duration
- Salary: we offer a competitive salary commensurate with the qualifications and experience of the candidate and according to the cost of living in Barcelona
- Target Starting date: asap

If this PhD scholarship sounds like what you are looking for, we look forward to hearing from you!
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

This position is reserved for candidates who meet the requirements and have the legal status of disabled persons with a degree of disability equal to or greater than 33%. In case there are no applicants with disabilities that meet the requirements, the rest of the candidates without declared disability will be evaluated.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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