15_CASE_HPCM_R3

Job Reference

15_CASE_HPCM_R3

Position

Post-doctoral researcher (R3)

Data de tancament

Dimecres, 31 Gener, 2018

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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BSC-CNS Corporate Video

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Context and Mission

- candidate will take part in a research project involving respiratory system simulations using Alya, financed by the Spanish government: INSPIRE. In this project, the candidate will be in charge of dealing with all the geometrical complexities of the problem: to analyse clinical images, to segment them, to create the surface 3D that define the simulation scenario and to generate the mesh from it. These meshes will be used to run many scenarios and study aerosol particle deposition in the system. The candidate will also program impose surface movement and test it. All this will be programmed in a stand-alone tool flexible enough to be used in different contexts of biomedical research
The research line is a collaboration with UPF (Spain).

**Key Duties**

- Coordinate the research actions
- Dominate computational fluid mechanics of transitional and turbulent flows
- Dominate image process software for medical purposes
- Dominate computational geometry tools to process the images to create the simulation scenario
- Dominate mesh generation tools as a user and as a developer

The candidate will work closely with UPF colleagues.

**Requirements**

- **Education**
  - Finished PhD on Computational Biomechanics or Computational Geometry. Finished postdoctoral stage on one of these subjects.

- **Essential Knowledge and Professional Experience**
  - Programming techniques, specially those HPC-based.
  - Computational geometry
  - Medical imaging, from acquisition to image formats

- **Additional Knowledge and Professional Experience**
  - Computational fluid dynamics
  - Turbulence modelling

- **Competences**
  - Fluency in spoken and written English, while fluency in other European languages will be also valued
  - Parallel programming
  - Medical image processing. Segmentation.
  - Knowledge of anatomy and physiology of the human body

**Conditions**

- The position will be located at BSC within the CASE department in collaboration with the specific program coordinator.
- 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, fully support to 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: 1 year 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 two contacts for further references
• A full CV including contact details

Deadline

The vacancy will remain open until 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.

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