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BSC research on Human Brain Project explained on first Human Brain Project Video Selfie Campaign

Barcelona Supercomputing Center (BSC) is proud to announce that the Subproject 7 High Performance Computing (SP7), in which BSC is involved, has been named winner of the first Human Brain Project (HBP) Video Selfie Campaign, along with Subproject 2 Strategic Human Brain Data (SP2).

Both SPs win the opportunity to be featured in a documentary where they can showcase their work to the entire HBP community. The documentary will be screened during the HBP Summit 2016 and broadcast through HBP public website and social media channels.

The challenge of the first HBP Video Selfie Campaign was to explain comprehensively, in less than one minute, how a given SP contributes to the HBP Platforms.

"It has been a pleasure to participate in this campaign as we've been able to showcase BSC's technologies. We try to understand how applications behave and provide mechanisms to facilitate the productivity of application programmers. I am delighted that our researchers managed to explain the features of these tools for the Human Brain Project in under a minute," says Jesús Labarta, director of the Computer Sciences department at BSC and researcher at HBP.

BSC is participating in the HBP in two ways: first, by providing hours on the MareNostrum supercomputer for molecular simulation; and second, by working on the programming models and tools which allow these simulations to be executed efficiently.

During the ramp-up phase of the HBP, BSC contributed towards the creation of the High Performance Analytics and Computing Platform (Subproject SP7), which provides supercomputing capacities for the neuroscience community. Specifically, BSC worked towards integrating the MareNostrum supercomputer in this platform, while also providing a set of tools that help users to exploit the platform to its full capacity.

These tools are:

- The OmpSs and PyCOMPSs programming models, which help users to easily program sequential applications that exploit parallel environments, such as machines with shared memory and distributed environments respectively.
  HBP Video Selfie Campaign - Raül Sirvent, on OmpSs
  https://www.youtube.com/watch?v=nhSstvzbC2M
  HBP Video Selfie Campaign – Javier Conejero, on PyCOMPSs
  https://www.youtube.com/watch?v=zoXUvIO001Q

- The Dynamic Load Balancing (DLB) library, which transparently redistributes the load of applications, allowing them to be executed faster.
  HBP Video Selfie Campaign – Marta Garcia, on DLB library
  https://www.youtube.com/watch?v=9Syt3M_5toU

- The Extrae and Paraver tools to analyse the behaviour of running applications in detail, with the goal of improving their efficiency in terms of scalability and execution time.
  HBP Video Selfie Campaign – Raül Sirvent, on Extrae and Paraver tools
  https://www.youtube.com/watch?v=MWamFnoiOOs

In addition, for the SGA-1 phase of the HBP which started recently, BSC's main contributions are in two new areas: dynamic resource management and data-intensive supercomputing.

About Human Brain Project

The HBP is a European Commission Future and Emerging Technologies Flagship. It aims to put in place a cutting-edge, ICT-based scientific research infrastructure that will allow scientific and industrial researchers to advance our knowledge in the fields of neuroscience, computing and brain-related medicine. The project promotes collaboration across the globe and is committed to driving European industry forward.

The HBP is organised into twelve subprojects, spanning the development of six new informatics-based platforms, plus brain organisation, cognitive neuroscience, theory, ethics and society and management.

BSC is involved in Subproject 7: High Performance Computing (SP7). The overall goal of SP7 is to provide the HBP Consortium and the broader European neuroscience community with supercomputing, big data and cloud capabilities at the exascale, as well as the system software, middleware, interactive computational steering and visualisation support necessary to create and simulate multi-scale brain models and to address the hard-scaling challenges of whole brain modelling.

www.humanbrainproject.eu | www.facebook.com/humanbrainproj | www.twitter.com/HumanBrainProj | www.youtube.com/user/TheHumanBrainProject | plus.google.com/117434254576387577205

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