

3rd HBP Curriculum Workshop Series - HIGH PERFORMANCE COMPUTING FOR NEUROSCIENCE: HANDS- ON INTRODUCTION TO SUPERCOMPUTING USAGE, TOOLS AND APPLICATIONS

9-11 July 2019, Forschungszentrum Jülich, Germany

http://bit.ly/ICT_HPC2019

Description

The workshop will teach the basics of supercomputing needed for starting to use HPC systems for (neuroscience) research. This includes on the one hand introductory lectures with hands-on sessions about scientific computing in Python and an introduction to the usage of HPC systems and (big) data management. On the other hand, the students will get hands-on training for tools and applications that can both be used on a supercomputer as well as on the user's local computer, for instance the simulators NEST (for point-neuron models) and Arbor (for morphologically detailed neuron models), and visualisation tools that can handle large imaging or simulation data as generated on a supercomputer. The tools and applications presented are developed in the HBP High Performance Analytics and Computing (HPAC) Platform. The introductory lectures also enable the students to make efficient use of the other HBP Platforms, in particular the Neuroinformatics, the Brain Simulation and the Neurorobotics Platforms that use the HPAC Platform as a back-end.

Workshop Structure

Lectures
Tutorials
Hands-on examples
Guided tour
Poster session
Focus exercises

Application information & Abstract submission

Application is open to the entire student community and early career researchers, regardless of whether they are affiliated with the Human Brain Project or not. All early-career scientists are encouraged to participate and it is aimed to achieve equal representation of all sexes.

A maximum of 30 participants per workshop will be selected by the Scientific Chair and the HBP Education Programme in a competitive selection process based on academic merit. Participants are required to submit a CV and a motivation letter with their application.

Participation fee: 250 €

The fee does not include travel and accommodation. Fees will be collected after participants have been selected.

Registration fee waivers are available for a maximum of five participants. Participants can apply for fee waivers prior to the application deadline by sending an email to curriculum.edu@humanbrainproject.eu.

Please check with your supervisor how your institution can support you with regard to expenses for the attendance of the workshops. Further information about organizations offering travel support can also be found on our [website](#).

A poster session is organised during the workshop. If you want to present your research in the poster session, please submit an abstract with your application.

ECTS Credits

It is possible to receive up to 12 ECTS credits for the participation in the HBP Curriculum. ECTS credits are awarded by the Medical University of Innsbruck / Austria (MUI) if the following conditions are fulfilled:



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- Full attendance of the workshop
- Registration for HBP online course on ICT via email to curriculum.edu@humanbrainproject.eu
- Attendance of the online course(s)

Scientific Chair

Abigail Morrison | Forschungszentrum Jülich

Organised by

Lisa-Marie Leichter | MUI
 Anna Lührs | Forschungszentrum Jülich
 Alexander Peyser | Forschungszentrum Jülich
 Meredith Peyser | Forschungszentrum Jülich

Upcoming Deadlines

Application deadline: 3 June 2019

Contact

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Lectures

Benjamin Cumming - Getting started with Arbor
Swiss National Supercomputing Centre (CSCS), Switzerland

Fahad Khalid - Introduction to Python part I & II
Forschungszentrum Jülich (JUELICH), Germany

Wouter Klijn - Scientific computing in Python part I & II
Forschungszentrum Jülich (JUELICH), Germany

Susanne Kunkel - Getting started with NEST
Norwegian University of Life Sciences (NMBU), Norway

Alberto Madonna - Introduction to High-Performance Computing
Swiss National Supercomputing Centre (CSCS), Switzerland

Jan Meinke - Introduction to parallel computing part I & II
Forschungszentrum Jülich (JUELICH), Germany

Abigail Morrison
 - Welcome & introduction by the Scientific Chair
 - Introduction to the focus exercises
Forschungszentrum Jülich (JUELICH), Germany

Andreas Müller - Guided tour to the supercomputing facilities at Jülich Supercomputing Centre
Forschungszentrum Jülich (JUELICH), Germany

Lena Oden - HPC data management
FernUniversität in Hagen, Germany

Benjamin Weyers - Interactive visual data analysis
RWTH Aachen University (RWTH), Germany



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Keywords

Neuroscience, computing, technology, simulations, neural networks, supercomputers, data management, high-performance computing, HPC, python, HPC systems, NEST, Arbor, HBP Platforms, supercomputing, visual data analysis



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