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

Scientific Programme

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WORKSHOP INFORMATION

Neuroscience has become highly interdisciplinary, thus supercomputing and good data management strategies have become indispensable to the field. This workshop will set the grounds for students to get started with high-performance computing (HPC)-based research and lays the foundation for them to make state-of-the-art advancements in their fields. The workshop will teach scientific computing in Python, include an introduction to HPC and hands-on trainings for applications that can be used on supercomputers and standard computers, e.g. the simulators NEST and Arbor, as well as visualisation tools. A prior experience with at least one programming language (e.g. Python, C or C++) is highly recommended.

Scientific Chair:
Abigail Morrison | Forschungszentrum Jülich

Organisers:
Sylvia Aßlaber | Medical University Innsbruck
Laura Saxer | Medical University Innsbruck
Anna Lührs | Forschungszentrum Jülich
Alexander Peyser | Forschungszentrum Jülich
Meredith Peyser | Forschungszentrum Jülich

Contact:
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Further information:
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<tr>
<td>08:30 - 9:00</td>
<td>Registration</td>
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<tr>
<td>09:00 - 09:30</td>
<td><strong>Welcome &amp; introduction</strong>&lt;br&gt;Abigail Morrison</td>
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<tr>
<td>09:30 - 10:30</td>
<td><strong>Introduction to Python, part I</strong>&lt;br&gt;Fahad Khalid</td>
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<td>10:30 - 11:00</td>
<td>Coffee break</td>
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<td>11:00 - 12:30</td>
<td><strong>Introduction to Python, part II</strong>&lt;br&gt;Fahad Khalid</td>
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<td>12:30 - 13:30</td>
<td>Lunch break</td>
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<td>13:30 - 15:30</td>
<td><strong>Scientific Computing in Python part I</strong>&lt;br&gt;Wouter Klijn</td>
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<td>15:30 - 16:00</td>
<td>Coffee break</td>
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<tr>
<td>16:00 - 17:30</td>
<td><strong>Scientific Computing in Python part I</strong>&lt;br&gt;Wouter Klijn</td>
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<td>17:30</td>
<td>Poster session &amp; social evening</td>
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08:30 - 10:30  Introduction to High-Performance Computing
             Alberto Madonna | Swiss National Supercomputing Centre

10:30 - 11:00  Coffee break

11:00 - 12:30  HPC data management
               Lena Oden | FernUniversität in Hagen

12:30 - 13:30  Lunch break

13:30 - 15:30  Introduction to parallel computing, part I
               Jan Meinke | Forschungszentrum Jülich

15:30 - 16:00  Coffee break

16:00 - 17:30  Introduction to parallel computing, part II
               Jan Meinke | Forschungszentrum Jülich

17:30 - 18:00  Guided tour to the supercomputing facilities at Jülich
               Supercomputing Centre
               Andreas Müller | Forschungszentrum Jülich
THURSDAY 11 JULY 2019

08:30 - 10:00  Getting started with NEST
               Susanne Kunkel | Norwegian University of Life Sciences

10:00 - 10:30  Coffee break

10:30 - 12:00  Getting started with Arbor
               Benjamin Cumming | Swiss National Supercomputing Center

12:00 - 13:00  Lunch break

13:00 - 14:00  Interactive visual data analysis
               Benjamin Weyers | University of Trier

14:00 - 14:15  Access to Fenix Infrastructure
               Anne Carstensen | Forschungszentrum Jülich

14:15 - 14:30  Introduction to the focus exercises
               Abigail Morrison | Forschungszentrum Jülich

14:30 - 15:00  Focus exercises I

15:00 - 15:30  Coffee break

15:30 - 17:30  Focus exercises II

17:30 - 18:00  Closing session
This project has received funding from the European Union’s Horizon 2020 Framework Programme for Research and Innovation under the Specific Grant Agreement No. 785907 (Human Brain Project SGA2).

humanbrainproject.eu/education