2ND HBP STUDENT CONFERENCE
TRANSDISCIPLINARY RESEARCH LINKING NEUROSCIENCE, BRAIN MEDICINE AND COMPUTER SCIENCE
14-16 February 2018
Central Post Office, Ljubljana, Slovenia

On-site registration is possible

SCIENTIFIC PROGRAMME

Contact Programme Committee: studentrep@humanbrainproject.eu
Contact organisers: education@humanbrainproject.eu

For more information visit: education.humanbrainproject.eu/web/2nd-hbp-student-conference
The 2nd HBP Student Conference provides an open forum for exchange of new ideas among young researchers working across various aspects of neuroscience, brain medicine and computer science relevant to the Human Brain Project. The scope of the conference offers a plethora of opportunities for extensive scientific discussions, both intra- and interdisciplinary, among peers and faculty through a variety of discussion sessions, lectures and social events.

### Scientific programme

**Wednesday**

14 February

- 12:00 - 14:00
  Registration
- 14:00 - 15:00
  Welcome speech and introduction to the HBP
  Marc-Oliver Gewaltig (EPFL)
- 15:00 - 16:00
  Introduction to Neurorobotics
  Marc-Oliver Gewaltig (EPFL)
- 16:00 - 16:30
  Coffee break
- 16:30 - 17:30
  Student Session I:
  Neurorobotics, Neuromorphic Computing, Theoretical Neuroscience*
  Thomas Heinis (ICL)
- 17:30 - 18:30
 Querying and exploring big scientific data
  Thomas Heinis (ICL)

**Thursday**

15 February

- 09:00 - 10:00
  What can we learn from artificial deep networks about biological brain function?
  Radoslaw Cichy (FU Berlin)
- 10:00 - 11:00
  Student Session II:
  Medical Informatics*
  Arleen Salles, Michele Farisco (UU)
  Karen Rommelfanger (Emory University)
- 11:00 - 11:30
  Coffee break
- 11:30 - 13:00
  Neuroethics in the big brain initiatives: Necessity or luxury?
  Arleen Salles, Michele Farisco (UU)
  Karen Rommelfanger (Emory University)
- 13:00 - 14:30
  Lunch break
- 14:30 - 15:30
  Student Session III:
  High Performance Computing, Brain Simulation*
  Anthony Randal McIntosh (Toronto)
- 15:30 - 16:30
  Building and interacting with The Virtual Brain
  Anthony Randal McIntosh (Toronto)
- 16:30 - 18:00
  Posters & coffee I

**Friday**

16 February

- 09:00 - 10:00
  Why does ICT need biology?
  Isabel Fernaud (UPM)
- 10:00 - 11:00
  Student Session IV:
  Human Brain/Mouse Brain Organisation, Systems and Cognitive Neuroscience*
  Andrea Krönke, Manuela Möller, Uta Kletzing (EAF Berlin)
- 11:00 - 11:30
  Coffee break
- 11:30 - 13:30
  Career building - parallel break-out sessions
  Andrea Krönke, Manuela Möller, Uta Kletzing (EAF Berlin)
- 13:00 - 15:00
  Lunch break
- 15:00 - 16:30
  Posters & coffee II
- 16:30 - 17:30
  Designing visual artificial intelligence systems by computationally modelling human vision perception
  Gemma Roig (MIT)
- 17:30 - 18:00
  Closing ceremony

* Please find a detailed schedule of the student sessions on page 2.

### Student participation information:

Participation in the 2nd HBP Student Conference is open to advanced master students, PhD students and young researchers, regardless of whether they are affiliated with the HBP or not and regardless of whether they make a submission to the scientific programme or not.

### Conference Programme Committee:

**Chair:**
Andrea Santuy | UPM, Spain

**Committee:**
Nikola Smidjievski | JSI, Slovenia
Marcelo Amendadiz | KU Leuven, Belgium
Petru Bogdan | UMAN, UK
Carlos Canova | JUELICH, Germany
Claudia Modenato | CHUV, Switzerland
Agata Mosinska | EPFL, Switzerland

**Organisers:**
Viktoria Tipotsch, Theresa Rass | MUI, Austria
Mili Bauer | JSI, Slovenia

**Contact organisers:**
education@humanbrainproject.eu

**Contact Programme Committee:**
studentrep@humanbrainproject.eu
Student Sessions

Student Session I

Towards grasping with Spiking Neural Networks for anthropomorphic robot hands
J. Camilo Vasquez Tieck (FZI)

Bio-inspired cat robot: Closed-loop locomotion with neural central pattern generators
Gabriel Urbain (UGent)

Learning movements by imitation from event-based visual prediction
Jacques Kaiser (FZI)

SpiNNakEar - Auditory pathway modelling on neuromorphic hardware
Robert James (UMAN)

The structure of complex neural networks and its effects on learning
Pau Vilimelis Aceituno (MPI-MIS)

A dynamic complex network framework to model cognition: Unveiling correlation structures from network centrality metrics
Gemma Rosell-Tarragó (UB)

Student Session II

Feature aware domain adaptation for robust medical signal processing
Steffen Schneider (RWTH)

Student Session III

Exponential first passage time approximations of neuron model with conductance-based dynamics
Jan Hendrik Kirchner (BCF)

Communication optimisation in distributed Spiking Neural Network simulations
Carlos Fernandez Musoles (USFD)

cuHinesBatch: Solving multiple hines systems on GPUs
Ivan Martínez-Peréz (BSC)

Dynamic resource management for interactive supercomputing in neuroscience
Raül Sirvent (BSC)

Big data for HPC: The Human Brain Project
Pol Santamaria (BSC)

Student Session IV

Synaptology of the mesial temporal cortex in Alzheimer’s disease
Marta Domínguez (UPM)

Synaptology of the somatosensory cortex in the adult mouse
Marta Turégano (UPM)

Fighting inactivity to prevent cognitive decline: The role of dopamine in modulating physical activity levels in older adults
Jaisalmer de Frutos-Lucas (UPM)

A software pipeline for efficient processing of 3D high-resolution microscopy images of large brain samples
Giacomo Mazzamuto (LENS)

Integrating multiple data sources for predicting the mouse mesoconnectome
Nestor Timonidis (RU)

Cortical feedback to superficial layers of V1 contains predictive scene information
Andrew Morgan (UGLA)

Cultured neuronal networks as complex dynamical systems
Alejandro Tlaie Boria (URJC)

Venue information:

Central Post Office
Čopova ulica 11
1000 Ljubljana
Slovenia

Fees:
On-site registration:
€ 150.00 for students
€ 200.00 for regular participants

For further information visit:
https://education.humanbrainproject.eu/web/2nd-hbp-student-conference/
Human Brain Project
Education Programme

Website:
education.humanbrainproject.eu

Contact:
education@humanbrainproject.eu

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