



Human Brain Project
Education Programme

4TH HBP STUDENT CONFERENCE ON INTERDISCIPLINARY BRAIN RESEARCH

21-22 JANUARY 2020
PISA, ITALY

SCIENTIFIC PROGRAMME



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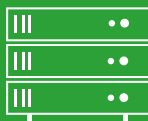
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SCIENTIFIC PROGRAMME

The human brain is such a complex system that it can only be understood by combining knowledge and practices from multiple scientific fields. The 4th HBP Student Conference provides an open forum for the exchange of new ideas among young researchers working across various aspects of science relevant to the Human Brain Project (HBP). The conference offers a space for extensive scientific dialogue, both intra- and interdisciplinary, among peers and faculty through a variety of discussion sessions, lectures and social events.

Conference Programme Committee:

Chairs:

Sandra Diaz | Forschungszentrum Jülich
Gabriel Urbain | Ghent University

Committee:

Carmen Alina Lupascu | Italian National Research Council
Luca Peres | University of Manchester
Marta Turégano | Universidad Politécnica de Madrid
Alexander van Meegen | Forschungszentrum Jülich
Alper Yegenoglu | Forschungszentrum Jülich

Organisers:

Egidio Falotico | Scuola Superiore Sant'Anna
Federica Radici | Scuola Superiore Sant'Anna
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Contact Programme Committee:

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Contact organisers:

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Human Brain Project



Sant'Anna
School of Advanced Studies – Pisa



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the European Union

TUESDAY 21 JANUARY 2020

08:00 - 08:30	Registration
08:30 - 09:00	Introduction & welcome note Egidio Falotico (Scuola Superiore Sant'Anna) Sandra Diaz Pier (Forschungszentrum Jülich) Gabriel Urbain (Ghent University)
09:00 - 10:00	ilastik: Automating image analysis with machine learning Dominik Kutra (European Molecular Biology Laboratory)
10:00 - 11:00	The SpiNNaker Platform Andrew Rowley (The University of Manchester)
11:00 - 11:30	Coffee break
11:30 - 12:30	Student Session I - Systems & cognitive neuroscience
12:30 - 13:30	Lunch break
13:30 - 14:30	From the origins of M/EEG signals to the study of time-resolved brain mapping Julia Guiomar Niso Galán (Universidad Politécnica de Madrid)
14:30 - 15:30	Student Session II - Human brain organisation
15:30 - 16:00	Coffee break
16:00 - 17:00	Computational models for sensory feedback in upper limb neuroprostheses Alberto Mazzoni (Scuola Superiore Sant'Anna)
17:00 - 18:30	Poster Session I
18:30	Welcome Reception

WEDNESDAY 22 JANUARY 2020

09:00 - 10:00	The virtual epileptic patient (VEP) - taking neuroscience to clinical trials Huifang Wang (Aix-Marseille University)
10:00 - 11:00	Ethics in the neurosciences Dieter Sturma (Forschungszentrum Jülich)
11:00 - 11:30	Coffee break
11:30 - 12:30	Student Session III - Neuroinformatics & brain simulation
12:30 - 13:30	Lunch break
13:30 - 14:30	Mean-field models derived from biologically realistic neuronal dynamics Tilo Schwalger (TU Berlin)
14:30 - 15:30	Student Session IV - Ethics, cognition & neuromorphic computing
15:30 - 16:00	Coffee break
16:00 - 17:00	Reconstruction and simulation of the cerebellar microcircuit Claudia Casellato (University of Pavia)
17:00 - 18:30	Poster Session II & Closing ceremony
18:30	City tour (optional)

STUDENT SESSIONS

Student Session I: Systems & cognitive neuroscience

The region of the perilocus coeruleus α organizes the gradual transition between slow wave sleep and REM sleep

Carlos Carrera-Cañas
(Universidad Autónoma de Madrid)

Episodic future thinking deficit in cannabis users: An fMRI study of neurofunctional alterations

Parnian Rafei
(University of Tehran)

Findings of cerebral electromagnetic aberrant activity in frail individuals using magnetoencephalography

Isabel Suárez
(Complutense University of Madrid)

Learning and memory phenotype, monoamine neurotransmission and hippocampal morphology of subtype-specific rap1A GTPase knockout mice

Hina Hazrat
(Dr. Panjwani Center for Molecular Medicine and Drug Research)

Short-term hypoxia differentially affects excitatory and inhibitory retinocollicular synaptic transmission

Hanna Dumanska
(National Academy of Science of Ukraine)

Characteristics of corticothalamic relays in mouse models of autism

Mikołaj Miękus
(Nencki Institute of Experimental Biology)

Student Session II: Human brain organisation

Neuroanatomical risk factors for post traumatic stress disorder (PTSD)

Ziv Ben-Zion
(Tel Aviv University)

Abnormal MEG resting-state functional connectivity as neurophysiological biomarker of future alcohol binge drinkers

Luis Anton-Toro
(Complutense University of Madrid)

Analysis with MEG of functional connectivity in default mode network associated with neuropsychological rehabilitation in stroke

Lucía Torres Simón
(Complutense University of Madrid)

Synaptology of human temporal neocortex: 3D-ultra-structural analysis

Nicolás Cano-Astorga
(Universidad Politécnica de Madrid)

Uncovering the neural circuits of learning motivation in intellectually gifted individuals

Morgane Aubineau

Student Session III: Neuroinformatics & brain simulation

Investigation of the relationship between the brain and visual impairment

Woongjin Jang
(University of Washington)

Workflow for subcellular neuronal modeling

João Pedro Gomes dos Santos
(Karolinska Institutet, University of Porto)

A spatial graph-theoretical model to describe neuronal connectivity

Giuseppe Giacomelli
(Università degli studi di Palermo)

The surface geometry of cerebral cortex induces topological changes of cortical traveling waves

Kazuya Horibe
(Osaka University)

Learning and sleep in a thalamo-cortical multi-area model

Chiara De Luca
(Istituto Nazionale di Fisica Nucleare)

A new Smart Region Growing algorithm for segmenting single neurons from confocal datasets

Alejandro Luis Callara
(University of Pisa)

Student Session IV: Ethics, cognition & neuromorphic computing

Role of bilingualism on executive functioning and grammatical comprehension in older adults

Alberto Nebreda Pérez
(Universidad Politécnica de Madrid)

Are mental disorders malfunctions of the brain?

Inés Abalo-Rodríguez
(Complutense University of Madrid)

EEG connectivity measures in prognostication of postanoxic coma patients

Martín Carrasco Gómez
(Universidad Politécnica de Madrid)

Practical use cases exploiting the ACP framework for the SpiNNaker neuromorphic platform

Evelina Forno
(Politecnico di Torino)

Design rule for enabling synaptic activity in resistance change memories

Dip Das
(Shiv Nadar University)

The problem of ethics of Artificial Intelligence from the perspective of the European 'normative power'

Maria Ermolaeva
(Saint Petersburg State University)



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