



**The 13th International Conference
on Brain Informatics (BI 2020)**

19 September 2020, Virtual Conference

Brain Informatics in the Virtual World

13th International Conference on Brain Informatics (BI 2020)

Conference Program

September 19, 2020

Virtual Conference

<http://www.bi2020.org/>

Sponsors:



Springer



BI2020 Program at a Glance

All times are in GMT+1 (UK Time Zone)

September 19, 2020	
*8:30 - 9:00	Opening of the Conference (Chair: Ning Zhong)
9:00 - 10:30	Parallel Session - 1 (Chair: Jan Treur): Track 1: Cognitive and Computational Foundations of Brain Science Paper IDs: B202, B204, B205, B251, B208, B236
9:00 - 10:30	Parallel Session - 2 (Chair: Marzia Hoque Tania): Track 2: Investigations of Human Information Processing Systems Paper IDs: B212, B213, B226, B227, B247, B252
*10:30-11:00	Morning networking break
11:00 - 12:30	Parallel Session - 3 (Chair: Claudia Cecchetto): Track 3: Brain Big Data Analytics, Curation and Management Paper IDs: B209, B221, B234, B235, B238, B245
11:00 - 12:30	Parallel Technical Session - 4 (Chair: Yang Yang): Track 4: Informatics Paradigms for Brain and Mental Health Research Paper IDs: B206, B219, B224, B229, B225, B215
*12:30-13:30	Early afternoon networking break
*13:30-14:30	Keynote Speech (Chair: Stefano Vassanelli): Effective sharing of neuroscience datasets: what are the problems? <i>Prof. Leslie S Smith, University of Stirling, UK</i>
*14:30-15:30	Keynote Speech (Chair: Ning Zhong): Explainable and Reliable AI and Autonomous Adaptive Intelligence: Deep Learning, Adaptive Resonance, and Models of Perception, Emotion and Action <i>Prof. Stephen Grossberg, Boston University, USA</i>
*15:30-16:00	Virtual coffee with Keynote speakers (& extended Q&A)
16:00 - 17:30	Parallel Technical Session - 5 (Chair: Vassilis Cutsuridis): Track 5: Brain-Machine Intelligence and Brain-Inspired Computing Paper IDs: B211, B217, B222, B233, B244, B246
16:00 - 17:45	Parallel Technical Session - 6 (Chair: Vicky Yamamoto): Track M: Mixed-track Brain Informatics Papers Paper IDs: B220, B243, B223, B214, B218, B242, B249
*18:00 - 18:30	Award ceremony, BI2021 Introduction and Closing of BI2020 conference (Chair: Stefano Vassanelli)

* These events will be taking place in the following virtual room – 1:

<https://us02web.zoom.us/j/84266152965?pwd=S2tORitDTWtvQVhvK1I2dXM5QVFvdz09>

BI 2020 Parallel Sessions

Saturday, September 19th, 2020

Parallel Session – 1:

09:00 am to 10:30 am (GMT+1)

Track 1: Brain-Machine Intelligence and Brain-Inspired Computing

Chair: *Jan Treur*, VU University Amsterdam, Netherlands

Zoom link: <https://us02web.zoom.us/j/89842901774?pwd=M0x1akFCbm5QQW1HR2o3ZXJ6cXcwQT09>

9:00 am to 9:15 am:

B202 An Adaptive Computational Fear-Avoidance Model Applied to Genito-Pelvic Pain/Penetration Disorder

Sophie van 't Hof, Arja Rydin, Jan Treur, and Paul Enzlin

9:15 am to 9:30 am:

B204 Are we Producing Narcissists? An Adaptive Agent Model for Parental Influence

Fakhra Jabeen, Charlotte Gerritsen, and Jan Treur

9:30 am to 9:45 am:

B205 A Systematic Assessment of Feature Extraction Methods for Robust Prediction of Neuropsychological Scores from Functional Connectivity Data

Federico Calesella, Alberto Testolin, Michele De Filippo De Grazia, and Marco Zorzi

9:45 am to 10:00 am:

B251 Neurosymbolic Expert System for Disorders of Consciousness

Paola di Maio

10:00 am to 10:15 am:

B208 The Effect of Loss-Aversion on Strategic Behaviour of Players in Divergent Interest Tacit Coordination Games

Dor Mizrahi, Ilan Laufer, and Inon Zuckerman

10:15 am to 10:30 am:

B236 Effect of the Gamma Entrainment Frequency in Pertinence to Mood, Memory and Cognition

Ryan Sharpe and Mufti Mahmud

Parallel Session – 2:

09:00 am to 10:30 am (GMT+1)

Track 2: Investigations of Human Information Processing Systems

Chair: *Marzia Hoque Tania*, University of Oxford, United Kingdom

Zoom link: <https://us02web.zoom.us/j/84266152965?pwd=S2tORitDTWtvQVhvK1I2dXM5QVFvdz09>

9:00 am to 9:15 am:

B212 Temporal-Spatial-Spectral Investigation of Brain Network Dynamics in Human Speech Perception

Bin Zhao, Gaoyan Zhang, and Jianwu Dang

9:15 am to 9:30 am:

B213 Precise estimation of Resting State Functional Connectivity Using Empirical Mode Decomposition

Sukesh Das, Anil Sao, and Bharat Biswal

9:30 am to 9:45 am:

B226 Dynamic Functional Connectivity Captures Individuals' Unique Brain Signatures

Rohan Gandhi, Arun Garimella, Petri Toiviainen, and Vinoo Alluri

9:45 am to 10:00 am:

B227 Differential Effects of Trait Empathy on Functional Network Centrality

Vishnu Moorthigari, Emily Carlson, Petri Toiviainen, Elvira Brattico, and Vinoo Alluri

10:00 am to 10:15 am:

B247 Segmentation of Brain Tumor Tissues in Multi-Channel MRI using Convolutional Neural Networks

C. Naveena, S. Poornachandra, and V.N. Manjunath Aradhya

10:15 am to 10:30 am:

B252 Knowledge Representation for Neuroscience, Progress Report

Paola di Maio

Parallel Session – 3:

11:00 am to 12:30 pm (GMT+1)

Track 3: Brain Big Data Analytics, Curation and Management

Chair: *Claudia Cecchetto*, University of Padova, Italy

Zoom link: <https://us02web.zoom.us/j/3953223335?pwd=TGtiajZjM3dYR0pmdmhoTkRsKzBqdz09>

11:00 am to 11:15 am:

B209 Resolving Neuroscience Questions Using Ontologies and Templates
Aref Eshghishargh, Kathleen Gray, and Scott C Kolbe

11:15 am to 11:30 am:

B221 Machine Learning in Analysing Invasively Recorded Neuronal Signals: Available Open Access Data Sources
Marcos Fabietti, Mufti Mahmud, and Ahmad Lotfi

11:30 am to 11:45 am:

B234 UPDRS Label Assignment by Analyzing Accelerometer Sensor Data Collected from Conventional Smartphones
Md. Sakibur Rahman Sajal, Md. Tanvir Ehsan, Ravi Vaidyanathan, Shouyan Wang, Tipu Aziz, and Khondaker A Mamun

11:45 am to 12:00 pm:

B235 Effectiveness of Employing Multimodal Signals in Removing Artifacts from Neuronal Signals: An Empirical Analysis
Marcos Fabietti, Mufti Mahmud, and Ahmad Lotfi

12:00 pm to 12:15 pm:

B238 A Machine Learning Based Fall Detection System for Elderly People with Neurodegeneration Disorders
Nazmun Nahar, Mohammad Shahadat Hossain, and Karl Andersson

12:15 pm to 12:30 pm:

B245 Management of Neurodegenerative Diseases using Machine Learning and Internet of Things
Md Nahiduzzaman, Moumitu Tasnim, Nishat Tasnim Newaz, Mufti Mahmud, and M Shamim Kaiser

Parallel Session – 4:

11:00 am to 12:30 pm (GMT+1)

Track 4: Informatics Paradigms for Brain and Mental Health Research

Chair: *Yang Yang*, Beijing Forestry University, Beijing, China

Zoom link: <https://us02web.zoom.us/j/4228279123?pwd=T3dlY3RWMkxaYmRuNW5ITE9PZklVQT09>

11:00 am to 11:15 am:

B206 Comparative Study of Wet and Dry Systems on EEG-based Cognitive Tasks

Taweesak Emsawas, Tsukasa Kimura, Ken-ichi Fukui, and Masayuki Numao

11:15 am to 11:30 am:

B219 A Monitoring System for Patients of Autism Spectrum Disorder using Artificial Intelligence

Md. Hasan Al Banna, Tapotosh Ghosh, M. Shamim Kaiser, and Mufti Mahmud

11:30 am to 11:45 am:

B224 Artificial and Internet of Healthcare Things based Alzheimer Care during COVID 19

Sabrina Jesmin, M Shamim Kaiser, and Mufti Mahmud

11:45 am to 12:00 pm:

B229 Towards Artificial Intelligence Driven Emotion Aware Fall Monitoring Framework Suitable for Elderly People with Neurological Disorder

Md Jaber Al Nahian, Tapotosh Ghosh, Mohammed Nasir Uddin, Md. Maynul Islam, Mufti Mahmud, and M. Shamim Kaiser

12:00 pm to 12:15 pm:

B225 An Optimized Self-Adjusting Model for EEG Data Analysis in Online Education Processes

Hao Lan Zhang, Sanghyuk Lee, and Jing He

12:15 pm to 12:30 pm:

B215 Epileptic seizures could be abated in advance by changing the synchronicity and directionality of onset propagation with stimulation

Denggui Fan

Parallel Session – 5:

4:00 pm to 5:30 pm (GMT+1)

Track 5: Brain-Machine Intelligence and Brain-Inspired Computing

Chair: *Vassilis Cutsuridis*, University of Lincoln, United Kingdom

Zoom link: <https://us02web.zoom.us/j/84266152965?pwd=S2tORitDTWtvQVhvK1I2dXM5QVFvdz09>

4:00 pm to 4:15 pm:

B211 A Computational Model for Simultaneous Employment of Multiple Emotion Regulation Strategies

Bas Chatel, Atke Visser, and Nimat Ullah

4:15 pm to 4:30 pm:

B217 Recall performance improvement in a bio-inspired model of the mammalian hippocampus

Nikolaos Andreakos, Shigang Yue, and Vassilis Cutsuridis

4:30 pm to 4:45 pm:

B222 Canonical retina-to-cortex vision model ready for automatic differentiation

Qiang Li and Jesus Malo

4:45 pm to 5:00 pm:

B233 Speech emotion recognition in neurological disorders using Convolutional Neural Network

Sharif Noor Zisad, Mohammad Shahadat Hossain, and Karl Andersson

5:00 pm to 5:15 pm:

B244 EEG based Sleep-Wake Classification using JOPS Algorithm

Abdullah Al-Mamun Bulbul and Md. Abdul Awal

5:15 pm to 5:30 pm:

B246 Towards Improved Detection of Cognitive Performance using Bidirectional Multi layer Long-Short Term Memory Neural Network

Md. Shahriare Satu, Shelia Rahman, Md. Imran Khan, Mohammad Zoynul Abedin, Mufti Mahmud, and M Shamim Kaiser

Parallel Session – 6:

4:00 pm to 5:45 pm (GMT+1)

Track M: Mixed Track Brain Informatics Papers

Chair: *Vicky Yamamoto*, University of Southern California, United States of America

Zoom link: <https://us02web.zoom.us/j/4228279123?pwd=T3dlY3RWMkxaYmRuNW5ITE9PZklVQT09>

4:00 pm to 4:15 pm:

B220 3D DenseNet Ensemble in 4-Way Classification of Alzheimer's Disease
Juan Ruez, Mufti Mahmud, Md Modasshir and M Shamim Kaiser

4:15 pm to 4:30 pm:

B243 Classification of PTSD and non-PTSD Using Cortical Structural Measures in Machine Learning Analyses – Preliminary Study of ENIGMA-Psychiatric Genomics Consortium PTSD Workgroup
Brian O'Leary, Chia-Hao Shih, Tian Chen, Hong Xie, Andrew Cotton, Kevin Xu, Rajendra Morey, Xin Wang, and ENIGMA-PGC PTSD Workgroup

4:30 pm to 4:45 pm:

B223 Automatic Detection of Epileptic Waves in Electroencephalograms Using Bag of Visual Words and Machine Learning
Marlen Muñoz, Camilo Sarmiento, Diego Lopez, Ricardo Salazar, and Rubiel Vargas

4:45 pm to 5:00 pm:

B214 Deep LSTM Recurrent Neural Network for Anxiety Classification from EEG in Adolescents With Autism
Brian Penchina, Avirath Sundaresan, Sean Cheong, and Adrien Martel

5:00 pm to 5:15 pm:

B218 Improving Alcoholism Diagnosis: Comparing Instance-based Classifiers against Neural Networks for Classifying EEG signal
Shelia Rahman, Tanusree Sharma, and Mufti Mahmud

5:15 pm to 5:30 pm:

B242 Sequence learning in Associative Neuronal-Astrocytic Networks
Leo Kozachkov and Konstantinos Michmizos

5:30 pm to 5:45 pm:

B249 The Resolution Matrix for Visualizing Functional Network Connectivity
Keith Dillon