

2019 International Conference on Brain Informatics

(BI 2019)

Program

December 13-15, 2019

International Academic Exchange Center of Hainan University

Haikou, Hainan, China

<http://wi-consortium.org/conferences/bi2019>

Sponsors

Hosted By



Hainan University

URL: <http://www.hainu.edu.cn/>

Official Sponsors



Chinese Association for Artificial Intelligence

URL: <http://caai.cn/>



Web Intelligence Consortium

URL: <http://wi-consortium.org/>

In Cooperation with



Chinese Association for Artificial Intelligence

URL: <http://caai.cn/>



Hainan Medical University

URL: <http://www.hainmc.edu.cn/>

中国人工智能学会脑科学与人工智能专业委员会
CAAI Technical Committee on Brain Science and Artificial Intelligence (CAAI-TCBSAI)

CAAI Technical Committee on Brain Science
and Artificial Intelligence

URL: <http://caai.cn/>



Chinese Research Hospital Association (CRHA) Medical Imaging and Artificial Intelligence Branch

URL: <http://www.crha.cn/>



Chinese Neuromodulation Society

URL: <http://cnms.org.cn/>



IEEE Computational Intelligence Society

URL: <http://cis.ieee.org/>



International Neural Network Society

URL: <https://www.inns.org/>



Springer Nature

URL: <http://www.springer.com/>



Lecture Notes in Computer Science (LNCS)

URL: www.springer.com/us/computer-science/lncs

Contents

Corporate Sponsors	i
Welcome Message from the Organizers	1
Information about Oral Presentations	3
Program at a Glance	4
Keynote Talks	8
BI'19 Panel	18
BI'19 Program for Parallel Sessions	20
BI'19 Program for Workshops/Special Sessions	25
General Information	40
The Conference Venue	42
Organization and Program Committee	43

Welcome Message from the Organizers

Dear Friends and Colleagues,

Welcome to the 2019 International Conference on Brain Informatics (BI'19). It is our great pleasure and privilege to welcome you to Haikou, Hainan, China! The conference program reflects the intellectual richness that the area can offer in the interdisciplinary and multidisciplinary fields of brain informatics. On behalf of the BI'19 Conference Committees, we would like to appreciate your participation and do hope that you will enjoy the conference technical and social programs.

Brain informatics (BI) started the exploration as a research field with the vision of studying the brain from the perspective of informatics. Firstly, BI combines the efforts of neuroscience, cognitive science, medicine and life sciences, data science, artificial intelligence (AI), neuroimaging technologies, and information and communication technologies (ICT) to study the brain as a general information processing system. Secondly, new informatics equipment, techniques and platforms are causing a revolution to understand the brain. Thirdly, starting from its proposal as a field, BI is with the goal of inspiring future AI, especially Web Intelligence (WI, i.e. AI in the connected world). The BI conference provides a premier international forum to bring together researchers and practitioners from diverse fields for presentation of original research results, as well as exchange and dissemination of innovative and practical development experiences on BI. The main theme of BI'19 is *Brain Science meets Artificial Intelligence* with respect to the five tracks: Cognitive and Computational Foundations of Brain Science; Human Information Processing Systems; Brain Big Data Analytics, Curation and Management; Informatics Paradigms for Brain and Mental Health Research; and Brain-Machine Intelligence and Brain-Inspired Computing.

The series of BI conferences started with the WICI International Workshop on Web Intelligence Meets Brain Informatics, held in Beijing, China in 2006. The 2nd, 3rd, 4th and 5th BI conferences were held in Beijing China (2009), Toronto Canada (2010), Lanzhou China (2011), and Macau China (2012), respectively. Since 2013, health was added to the conference title as Brain Informatics and Health (BIH) with an emphasis on real-world applications of brain research in human health and well-being. The BIH13, BIH14, BIH15, and BIH16 were held at Maebashi Japan, Warsaw Poland, London UK, and Omaha USA, respectively. In 2017, the conference went back to its original design and vision to investigate the brain from informatics perspective and to promote brain-inspired information technology revolution. Thus, the conference name was changed back to Brain Informatics at Beijing, China in 2017. In 2018, the conference was held in Arlington, Texas, USA. In 2019, this grand event is held in Haikou, China during December 13th-15th. The BI'19 conference is hosted by Hainan University and officially sponsored by Chinese Association for Artificial Intelligence (CAAI) and Web Intelligence Consortium (WIC). The BI'19 solicited high-quality papers and keynote talks with world-class speakers, panel discussion, workshops, and special sessions. The BI'19 involves several world leaders in brain research and informatics technologies, including Aaron Ciechanover, Lin Chen, Qionghai Dai, Hongkui Zeng, Michael Fox, Hesheng Liu, Tianzi Jiang, Jing Luo, Yong He, Jiashi Feng, and many other outstanding researchers. The BI'19 conference promotes transformative research to inspire novel conceptual paradigms and innovative technologies and designs that will benefit society. In

particular, big data analytics, machine learning and AI technologies are transforming the BI research and facilitating their real-world BI applications. New data fusion and AI methodologies are developed to enhance human interpretive powers when dealing with big neuroimaging data sets, including fMRI, PET, MEG, EEG and fNIRS, as well as data from other sources like eye-tracking and wearable, portable, micro and nano devices. BI research creates and implements various tools to analyze all the data and establish a more comprehensive understanding of human thought, memory, learning, decision-making, emotion, consciousness and social behaviors. These methods and related studies will also assist in building brain-inspired intelligence, brain-inspired computing, human-level wisdom-computing paradigms and technologies, improving the treatment efficacy of mental health and brain disorders.

On behalf of the BI'19 Conference Committees, we would like to thank all authors, presenters, keynote speakers, panelists, workshop/special session organizers, and all members of the International Program Committee for their substantive contributions towards the high quality of the BI'19 conference. We would like to thank the sponsors for their valuable support. Organizing such a major event would not be possible without a solid organization, and without the efforts of many people. We are extraordinarily appreciative for the tremendous and most effective administrative and secretarial support from the local host and local organizing team. We would like to thank all who contributed to the success of this great meeting. We thank you for your participation and support of BI'19! We encourage you to explore many excellent technical programs and network events during the BI'19 conference. Hope you enjoy the conference and will have fond memories in Haikou!

December 13, 2019

Conference General Chair

Qingming Luo, Hainan University, China

Program Committee Chairs

Peipeng Liang, Capital Normal University, China

Vinod Goel, York University, Canada

Chunlei Shan, Shanghai University of Traditional Chinese Medicine, China

Organizing Chairs

Xin Lou, Chinese PLA General Hospital, China

Nan Ma, Beijing Union University, China

Feng Xu, Tsinghua University, China

Steering Committee Chairs

Qionghai Dai, Tsinghua University, China

Ning Zhong, Maebashi Institute of Technology, Japan and Beijing University of Technology, China

Hanchuan Peng, SEU-ALLEN Joint Center, Institute for Brain and Intelligence, China

Information about Oral Presentations

Facilities at the Presentation Room

Each presentation room is equipped with a video projector (without PC). It is suggested that attendees bring their own laptops and USB disks to the presentation rooms.

Presentation Time

The time allocated to each presentation is:

- 20 minutes for Type I full paper (15 to 17 minutes for the presentation plus 3 to 5 minutes for discussions)
- 15 minutes for Type II abstract (10 to 12 minutes for the presentation plus 3 to 5 minutes for discussions)
- For presentations in Workshops / Special Sessions, the time is flexible (please confirm the time with Workshops / Special Sessions Organizers)

Tips for Presenters

- Please check the time and location for your presentation in advance, and get to the venue a little earlier.
- Please leave time for discussions (questions and answers) after you oral presentation.
- Please do not exceed your allocated time, and follow the instructions of the Session Chairs.

If you cannot find your name in Sessions or your information is incorrect in the Program Booklet, please contact the Conference Chairs

Program at a Glance

Workshop/Oral Presentation Day

December 13										
Room	3F Hexie Room (和谐厅)	3F Heqian Room (和谦厅)	3F Hexun Room (和逊厅)	3F Heyi Room (和怡厅)	3F Hebian Room (和辨厅)	4F Multi-Function Conference Room (多功能会议室)	4F Meeting Room I (1 号办公室)	4F Meeting Room II (2 号办公室)	4F Meeting Room III (3 号办公室)	4F Boardroom (董事会议室)
14:30-16:00	International Workshop on Brain Health Big Data and Brain-Machine Intelligence in the Four Ps Medicine of 5G Era BBD-BMI	Workshop on Multicenter MRI: How Different Could You be from Me WMCM	Special Session on Learnable Representation and Analytics of Neuroimaging LRAN	Special Session on Brain Imaging Studies of Young Minds BISYM	International Workshop on Cyborg Intelligence WCI	International Workshop on Computational Neuroaesthetics WCN	The 1st International Workshop on Computational Brain Image Analysis and Genomics CBIAG	Special Session on Neurophysiologic -al Signal and Information Processing for Healthcare Engineering NSIPHE Industry Workshop	Special Session on Imaging Brain Networks in Psychiatric Disorders IBNPD	Brain-Machine Intelligence and Brain-Inspired Computing
16:00-16:20 Coffee Break										
16:20-18:00										

December 14 (Main Conference Day)	
Room: 3F Grand Ballroom	
9:00 - 9:30	Opening (Chair: Ning Zhong + Pepper Robot)
9:30 - 10:10	Keynote Speech (Chair: Qingming Luo): The Revolution of Personalized Medicine: Are We Going to Cure all Diseases and at What Price? <i>Aaron Ciechanover, The Technion – Israel Institute of Technology, Israel</i>
10:10-10:50	Keynote Speech (Chair: Hanchuan Peng): The Relationship between Cognition and Computation <i>Lin Chen, Institute of Biophysics, Chinese Academy of Sciences, China</i>
10:50-11:30	Keynote Speech (Chair: Guoyin Wang): High-speed 3D Fluorescence Microscopy with Digital Adaptive Optics <i>Qionghai Dai, Tsinghua University, China</i>
11:30-13:30	Lunch Meeting with Lunch Box Panel Discussion Interdisciplinary Study and Industrial Innovation of Brain Science meets Artificial Intelligence (12:00-13:30) Panel Chairs <i>Ning Zhong, Maebashi Institute of Technology, Japan and Beijing University of Technology, China</i> <i>Hanchuan Peng, SEU-ALLEN Joint Center, Institute for Brain and Intelligence, China</i> Panelists From Brain Science Background: <i>Michael Fox, Harvard Medical School, USA</i> <i>Vinod Goel, York University, Canada</i> <i>Guoming Luan, Capital Medical University Sanbo Brain Hospital, China</i> <i>Xinguang Yu, Chinese PLA General Hospital, China</i> From AI Background: <i>Yike Guo, Imperial College London, UK</i> <i>Yong Shi, Chinese Academy of Sciences, China</i> <i>Huajin Tang, Zhejiang University, China</i> <i>Feng Wu, Chinese University of Science and Technology, China</i>
13:30-14:00	Feature Talk (Chair: Vinod Goel): Cell Type Classification and Circuit Mapping in the Mouse Brain <i>Hongkui Zeng, Allen Institute for Brain Science, USA</i>
14:00-14:30	Feature Talk (Chair: Vinod Goel): Decoding Neuropsychiatric Symptoms using the Human Brain Connectome <i>Michael Fox, Harvard Medical School and Massachusetts General Hospital, USA</i>
14:30-15:00	Feature Talk (Chair: Vinod Goel): Subject-level Functional Neuroimaging for Personalized Medicine <i>Hesheng Liu, Harvard Medical School and Massachusetts General Hospital, USA</i>
15:00-15:30	Industry Invited Talk (Chair: Vinod Goel): Research and Application of Deep Learning Technology in Medical Imaging <i>Jiashi Feng, Chief Scientist of BioMind, Head of NUS Learning and Vision Lab, Singapore</i>
15:30-16:00	Coffee Break
16:00-16:30	Feature Talk (Chair: Peipeng Liang): The Human Brainnetome Atlas and Its Applications in Understanding of Brain Functions and Disorders <i>Tianzi Jiang, Institute of Automation, Chinese Academy of Sciences, China</i>
16:30-17:00	Feature Talk (Chair: Peipeng Liang): The Brain Basis for Processing the "Novelty" and "Appropriateness" Features in Creativity <i>Jing Luo, Capital Normal University, China</i>
17:00-17:30	Feature Talk (Chair: Peipeng Liang): Developmental Connectomics from Infancy through Early Childhood <i>Yong He, Beijing Normal University, China</i>
18:00-20:00	Banquet (The Best Paper Award Ceremony, Introduction of Brain Informatics 2020 in Padova Italy)

12月14日 主题报告、特邀报告、尖峰对话专场 (Main Conference Day)	
会场: 大宴会厅	
9:00-9:30	大会开幕式 (主持人: 钟宁+ Pepper 机器人)
9:30-10:10	大会主题报告 (主持人: 骆清铭) 报告题目: The Revolution of Personalized Medicine: Are We Going to Cure all Diseases and at What Price? 报告人: Aaron Ciechanover, 诺贝尔化学奖、中国科学院外籍院士、以色列理工学院教授
10:10-10:50	大会主题报告 (主持人: 彭汉川) 报告题目: The Relationship between Cognition and Computation 报告人: 陈霖, 中国科学院院士、中国认知科学学会理事长、中国科学院生物物理研究所教授
10:50-11:30	大会主题报告 (主持人: 王国胤) 报告题目: High-speed 3D Fluorescence Microscopy with Digital Adaptive Optics 报告人: 戴琼海, 中国工程院院士、中国人工智能学会理事长、清华大学脑与认知科学研究所所长
11:30-13:30	午餐会 (会场提供盒饭) 尖峰对话: 脑科学与人工智能的交叉研究与产业创新 (12:00-13:30) 主持人 钟宁, 日本前桥工科大学、北京工业大学 彭汉川, 东南大学脑科学与智能技术研究院、东大-艾伦联合研究中心 尖峰对话嘉宾 脑科学背景: Michael Fox, 美国哈佛大学医学院 Vinod Goel, 加拿大约克大学 栾国明, 首都医科大学三博脑科医院 余新光, 中国人民解放军总医院 人工智能背景: 郭毅可, 英国帝国理工学院 石勇, 中国科学院 唐华锦, 浙江大学 吴枫, 中国科学技术大学
13:30-14:00	特邀报告 (主持人: Vinod Goel) 报告题目: Cell Type Classification and Circuit Mapping in the Mouse Brain 报告人: 曾红葵, 美国艾伦脑科学研究所执行官
14:00-14:30	特邀报告 (主持人: Vinod Goel) 报告题目: Decoding Neuropsychiatric Symptoms using the Human Brain Connectome 报告人: Michael Fox, 美国哈佛大学医学院麻省总院脑网络成像和调控实验室主任
14:30-15:00	特邀报告 (主持人: Vinod Goel) 报告题目: Subject-level Functional Neuroimaging for Personalized Medicine 报告人: 刘河生, 美国哈佛大学医学院麻省总院马蒂诺生物医学成像中心个体差异实验室主任
15:00-15:30	工业界特邀报告 (主持人: Vinod Goel) 报告题目: Research and Application of Deep Learning Technology in Medical Imaging 报告人: 冯佳时, BioMind 首席科学家、新加坡国立大学机器学习与视觉实验室主任
15:30-16:00	茶歇
16:00-16:30	特邀报告 (主持人: 梁佩鹏) 报告题目: The Human Brainnetome Atlas and Its Applications in Understanding of Brain Functions and Disorders 报告人: 蒋田仔, 欧洲科学院外籍院士、脑网络组北京市重点实验室主任、中国科学院自动化研究所教授
16:30-17:00	特邀报告 (主持人: 梁佩鹏) 报告题目: The Brain Basis for Processing the "Novelty" and "Appropriateness" Features in Creativity 报告人: 罗劲, 中国心理学会秘书长、学习与认知北京市重点实验室主任、首都师范大学教授
17:00-17:30	特邀报告 (主持人: 梁佩鹏) 报告题目: Developmental Connectomics from Infancy through Early Childhood 报告人: 贺永, 认知神经科学与学习国家重点实验室副主任、神经影像大数据与人脑连接组学北京市重点实验室主任、北京师范大学教授
18:00-20:00	晚宴 (最佳论文颁奖仪式, 意大利帕多瓦大学 2020 脑信息学国际会议宣传)

Workshop/Oral Presentation Day

December 15										
Room	3F Hexie Room (和谐厅)	3F Heqian Room (和谦厅)	3F Hexun Room (和逊厅)	3F Heyi Room (和怡厅)	3F Hebian Room (和辨厅)	4F Multi-Function Conference Room (多功能会议室)	4F Meeting Room I (1 号办公室)	4F Meeting Room II (2 号办公室)	4F Meeting Room III (3 号办公室)	4F Boardroom (董事会议室)
9:00-10:20	The 3rd Annual Workshop on Novel Methods of the Brain Imaging in the Clinical and Preclinical Neuroscience NMBICPN	Special Session on Algorithm and Chips for Computational Brain Science and Clinical Applications ACCBSCA	The 2nd International Workshop on Cognitive Neuroscience of Thinking and Reasoning CNTR	International Workshop on Neuroscience and Brain Rehabilitation NBR	Special Session on Interactive Cognition and Self-driving ICS	Special Session on Computational Social Analysis for Mental Health CSAMH	Human Information Processing Systems	Cognitive and Computational Foundations of Brain Science	Brain Big Data Analytics, Curation and Management	Informatics Paradigms for Brain and Mental Health Research
10:20-10:40 Coffee Break										
10:40-12:00										

Keynote Talk: The Revolution of Personalized Medicine: Are We Going to Cure all Diseases and at What Price?



Aaron Ciechanover

The Technion – Israel
Institute of Technology,
Israel

9:30 -10:10

December 14, 2019

Abstract: Many important drugs such as penicillin and aspirin were discovered by serendipity. Other major drugs like the cholesterol-reducing statins were discovered using more advanced technologies, such as screening of large libraries of synthetic or natural compounds. In all these cases, the mechanism of action of the drug was largely unknown at the time of their discovery, and was unraveled only later. With the realization that patients with apparently similar diseases – breast or prostate cancer, for example - respond differently to similar treatments and their disease course is vastly different, we have begun to understand that the molecular mechanistic base of what we assumed to be the same disease entity, are different. Thus, breast or prostate cancers appear to be sub-divided to smaller distinct classes according to their molecular characteristics and the causing underlying mechanisms/mutations. As a result, we are exiting now the era where the treatment of many diseases is “one size fits all”, and enter a new era of “personalized medicine” where the treatment is tailored according to the patient’s molecular/mutational profile. Here, the understanding of the mechanism will drive the development of new drugs. This era will be characterized initially by the development of technologies to sequence individual genomes, transcriptomes, proteomes and metabolomes, followed by identification and characterization of new disease-specific molecular markers and drug targets, and by design of novel,

mechanism-based drugs to these targets. The era will be also accompanied by complex bioethical problems, from high pricing and limited accessibility of large fractions of needy population to the achievements of biomedical research, but also to an era where genetic information of large populations will become available, and protection of privacy will become an important, yet a fragile issue. The introduction of gene editing technology to the armamentarium of novel therapeutic modalities, will add yet another layer of bioethical complexity to the one imposed by access to generic information and the ability to predict the future of health course of patients.

Biography of the speaker: Aaron Ciechanover is a professor in the Technion - Israel Institute of Technology in Haifa. Together with the collaborators, he discovered that covalent attachment of ubiquitin to a target protein signals it for degradation. He deciphered the mechanism of conjugation, described the general proteolytic functions of the system, and proposed a model according to which this modification serves as a recognition signal for a specific downstream protease.

Among the numerous prizes Ciechanover received are the 2000 Albert Lasker Award, the 2003 Israel Prize, and the 2004 Nobel Prize (Chemistry; shared with Drs. Hershko and Rose). Among many academies, Ciechanover is member of the Israeli National Academy of Sciences and Humanities, The European Molecular Biology Organization (EMBO), the American Academy of Arts and Sciences (Foreign Fellow), the American Philosophical Society, the National Academies of Sciences (NAS) and Medicine (NAM) of the USA (Foreign Associate), the Pontifical Academy of Sciences at the Vatican, the Chinese Academy of Sciences (CAS; Foreign Member), and the Russian Academy of Sciences (Foreign Member).

Keynote Talk: The Relationship between Cognition and Computation



Lin Chen

Institute of Biophysics,
Chinese Academy of
Sciences, China

10:10.-10:50
December 14, 2019

Abstract: What question is fundamental for the development of a new generation of artificial intelligence? We believe the key issue to address is the relationship between cognition and computation. For example, the question of broad interest “Will artificial intelligence replace human mind” is essentially and scientifically an issue related to the relationship between cognition and computation.

The relationship between cognition and computation can be further divided into four aspects: 1) The relationship between the primitives of cognition and computation; 2) The relationship between the anatomic structure of neural representation of cognition and the

computational architecture of artificial intelligence; 3) The relationship between emergent mental phenomena in cognition and emergent information processes in computation; 4) The relationship between mathematical foundations of cognition and computation.

Biography of the speaker: Lin Chen is the Director of State Key Laboratory of Brain and Cognitive Science and Director of Beijing MRI Center for Brain Research. He is an elected member of Chinese Academy of Sciences and elected member of TWAS (Academy of Sciences for the Developing World), and president, Chinese Cognitive Science Society. He is also a winner of “Outstanding Scientists Award”, Qiu Shi Science & Technologies Foundation (Hong Kong).

Keynote Talk: High-speed 3D Fluorescence Microscopy with Digital Adaptive Optics



Qionghai Dai

Tsinghua University,
China

10:50 -11:30

December 14, 2019

Abstract: Observing large-scale three-dimensional subcellular dynamics in vivo at high spatiotemporal resolution has long been a pursuit for biology. However, both the signal-to-noise ratio and resolution degradation in multicellular organisms pose great challenges. In this talk, I will discuss our recent work in in vivo aberration-free 3D fluorescence imaging at millisecond scale by scanning light-field microscopy with digital adaptive optics. Specifically, we propose scanning light-field microscopy to achieve diffraction-limited 3D synthetic aperture for incoherent conditions, which facilitates high-speed aberration correction for every pixel in post-processing. Various fast subcellular processes are observed, including mitochondrial dynamics in cultured neurons, membrane dynamics in zebrafish embryos, and calcium propagations in cardiac cells, human

cerebral organoids, and *Drosophila* larval neurons, enabling simultaneous in vivo studies of morphological and functional dynamics in 3D.

Biography of the speaker: Born in 1964, Qionghai Dai is a Professor in Tsinghua University, and the director of the Institute of Brain and Cognitive Sciences at Tsinghua University. Qionghai's research centers on the interdisciplinary study of Brain Engineering and the next-generation Artificial Intelligence. He has built up various multi-scale multi-dimensional computational imaging instruments, aiming for the simultaneous multi-scale observation of dynamic structures spanning from organelles, cells, tissue, and organs. By developing advanced imaging techniques for the simultaneous recording of millions of neurons, he tries to understand the structures and mechanisms of entire neural circuits on various tasks at single-cell level, which can provide theoretical supports for next-generation neuromorphic computing algorithms (including expression, transform, and rules), as a new pathway from Brain Science to Artificial Intelligence.

Feature Talk: Cell Type Classification and Circuit Mapping in the Mouse Brain



Hongkui Zeng

Allen Institute for Brain
Science, USA

13:30 -14:00

December 14, 2019

Abstract: To understand the function of the brain and how its dysfunction leads to brain diseases, it is essential to have a deep understanding of the cell type composition of the brain, how the cell types are connected with each other and what their roles are in circuit function. At the Allen Institute, we have built multiple platforms, including single-cell transcriptomics, single and multi-patching electrophysiology, 3D reconstruction of neuronal morphology, high throughput brain-wide connectivity mapping, and large-scale neuronal activity imaging, to characterize the transcriptomic, physiological, morphological, and connectional properties of different types of neurons in a standardized way, towards a taxonomy of cell types and a description of their wiring diagram for the mouse brain, with a focus on the visual cortico-thalamic system. Building such knowledge base lays the foundation towards the

understanding of the computational mechanisms of brain circuit function.

Biography of the speaker: Hongkui Zeng joined the Allen Institute for Brain Science in 2006. She currently leads the Structured Science Division to develop and operate high-throughput pipelines to generate large-scale, open-access datasets and tools to accelerate neuroscience discovery. Since joining the Allen Institute, she has also led several research programs, including the Transgenic Technology program, the Human Cortex Gene Survey project, the Allen Mouse Brain Connectivity Atlas project, and the Mouse Cell Types and Connectivity program. Zeng received her Ph.D. in molecular and cell biology from Brandeis University. Her current research interests are in understanding neuronal diversity and connectivity in the mouse visual cortical circuit and how different neuronal types work together to process and transform visual information. She has broad scientific experience and a keen interest in using a combined molecular, anatomical and physiological approach to unravel mechanisms of brain circuitry and potential means for treating brain diseases.

Feature Talk: Decoding Neuropsychiatric Symptoms using the Human Brain Connectome



Michael Fox

Harvard Medical School
and Massachusetts
General Hospital, USA

14:00 -14:30

December 14, 2019

Abstract: If we can identify the human brain circuits responsible for neuropsychiatric symptoms, we can target those circuits for symptom relief. I will show how a big-data resource termed the human brain connectome can be used to map symptoms to human brain circuits in ways not previously possible. The information provided by this approach is leading to improve brain stimulation therapies and novel therapeutic targets for patients with brain disease.

Biography of the speaker: Michael Fox is an Associate Professor of Neurology at Harvard Medical School and Director of the Laboratory for Brain Network Imaging and Modulation. He is Co-Director of the Beth Israel Deep Brain Stimulation Program and Associate Director of the Berenson-Allen Center for Noninvasive Brain Stimulation.

Clinically, Dr. Fox specializes in the use

of both invasive and noninvasive brain stimulation for the treatment of neurological and psychiatric disease. His practice includes deep brain stimulation for the treatment of Parkinson's disease, essential tremor, and dystonia as well as transcranial magnetic stimulation for treatment of medication-refractory depression.

Dr. Fox's research focuses on the development of new and improved treatments for neuropsychiatric symptoms based on understanding brain circuits and the effects of brain stimulation. He developed techniques to identify the human brain circuits responsible for different neuropsychiatric symptoms, identifying new therapeutic targets and improving existing therapies. His papers have been cited over 25,000 times and he has won numerous awards for his work, including the inaugural Trailblazer Prize for Clinician Scientists, a single award given nationally for breakthroughs in translational research.

Feature Talk: Subject-level Functional Neuroimaging for Personalized Medicine



Hesheng Liu

Harvard Medical School
and Massachusetts
General Hospital, USA

14:30 -15:00

December 14, 2019

Abstract: A major obstacle for exploring subtle aspects of network organization and translating insights into clinical applications is the lack of tools for mapping networks in individual subjects. We evaluated inter-subject variability in brain functional organization and developed novel subject-level functional imaging tools to accurately map functional regions using resting-state fMRI and task-based fMRI. These subject-specific functional neuroimaging techniques may replace the invasive pre-surgical functional mapping routines

currently in use, and lead to personalized targets to treat a variety of neurological and psychiatric disorders.

Biography of the speaker: Hesheng Liu is SmartState Chair Professor of Neuroscience at the Medical University of South Carolina and Associate Professor of Radiology at Harvard Medical School. His research focuses on developing novel neuroimaging and computational tools to reveal brain functional architecture in individual subjects. A major goal of his work is to localize functional networks in individual patients to guide surgical intervention. Another theme in his lab is to identify personalized neuromodulation targets for brain disorders and study functional changes in individual patients after neuromodulation treatments.

Feature Talk: The Human Brainnetome Atlas and Its Applications in Understanding of Brain Functions and Disorders



Tianzi Jiang

Institute of Automation,
Chinese Academy of
Sciences, China

16:00 -16:30

December 14, 2019

Abstract: The Human Brainnetome atlas is constructed with brain connectivity profiles obtained using multimodal magnetic resonance imaging. It is in vivo, with fine-grained brain subregions, and with anatomical and functional connection profiles. In this lecture, we will summarize the advance of the human brainnetome atlas, its biological basis and practical applications in neuroscience and brain diseases. We first present the basic ideas of the human brainnetome atlas and the procedure to construct this atlas. Then some parcellation results of the human brain areas with different types of cytoarchitectures will be provided. After that, we will present the biological basis of the brainnetome atlas from aspects of genetics, evolution, and relationships between structure and functions of the brain. Next, we

will show how to use the human brainnetome atlas in practice to address issues in cognitive neuroscience and clinical research. Finally, we will give a brief perspective on multiscale brainnetome atlas and the related neurotechniques.

Biography of the speaker: Professor Tianzi Jiang is Director of Beijing Key Laboratory of Brainnetome and Director of the Brainnetome Center at the Institute of Automation of the Chinese Academy of Sciences (CASIA), and Chief Professor at University of the Chinese Academy of Sciences. His research interests include neuroimaging, Brainnetome, imaging genetics, and their clinical applications in brain disorders. His study on the Human Brainnetome Atlas was ranked among the Top 10 Breakthroughs in Science and Technology of China in 2016. It was also selected as a part of 40 Milestone Achievements of the Chinese Academy of Sciences in the last 40 years (1978 -2018). He was elected a member of the Academy of Europe, a fellow of the American Institute for Medical and Biological Engineering.

Feature Talk: The Brain Basis for Processing the "Novelty" and "Appropriateness" Features in Creativity



Jing Luo

Capital Normal
University, China

16:30 -17:00
December 14, 2019

Abstract: Although the "novelty" and "appropriateness" are regarded as the most basic features of creativity, the neural correlates underlying the processing of these two features are still unknown. The investigation on this research topic could be of fundamentally important for understanding the nature of creativity. Through making contrasts between the novel and familiar, or appropriate and inappropriate ways to

treat certain problem situations, or to design new products of daily life article, we identified the functional brain areas or neural networks for mentally representing the features of "novelty" and "appropriateness" in creative way of thinking. These results might provide new and key clues for analyzing the essentials of human creativity.

Biography of the speaker: Jing Luo is the professor of psychology in Capital Normal University. His research interests include the cognitive brain mechanisms for creative thinking, insight problem solving, and for innovative ways of emotion regulation.

Feature Talk: Developmental Connectomics from Infancy through Early Childhood



Yong He
Beijing Normal
University, China

17:00 -17:30
December 14, 2019

Abstract: The human brain undergoes rapid growth in both structure and function from infancy through early childhood, and this significantly influences cognitive and behavioral development in later life. Developmental connectomics provides unprecedented opportunities for exploring the developing brain through non-invasive mapping of structural and functional connectivity patterns. In this talk, I will describe the methodological framework of developmental connectomics and our recent works in connectome development from infancy to early childhood. Specifically, I will highlight five fundamental principles of brain network development during the critical first years of life, emphasizing strengthened segregation and integration balance, a remarkable hierarchical order from primary to higher-order regions, unparalleled structural and functional maturations, substantial individual variability, and high vulnerability to

developmental disorders.

Biography of the speaker: Dr. Yong He is a Changjiang Distinguished Professor of the Beijing Normal University. He is currently the Founding Director of the Beijing Key Laboratory of Brain Imaging and Connectomics, the Deputy Director of the National Key Laboratory of Cognitive Neuroscience and Learning, and the Principal Investigator of IDG/McGovern Institute for Brain Research. He did his PhD at the National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences (2002-2005) and was a postdoctoral fellow at the Montreal Neurological Institute, McGill University, Canada (2005-2007). Dr. He received numerous national award including the National Science Fund for Distinguished Young Scholars (2012) and Leading Scientists in Ten Thousand Talent Program (2019). Dr. He's research interest mainly focuses on imaging connectomics. Specifically, his team has developed a variety of methodologies to describe connectome architectures of structural and functional brain networks, and further investigated network alterations in normal development and disorders.

Industry Invited Talk: Research and Application of Deep Learning Technology in Medical Imaging



Jiashi Feng

National University of
Singapore, Singapore

15:00 -15:30
December 14, 2019

Abstract: Deep learning has been revolutionizing various fields in recent years as a main AI technique. Among these fields, deep learning for health has attracted lots of attention. In this talk, I will first briefly introduce recent advances of deep learning techniques, in particular for medical image analysis. Then I will introduce the recent techniques developed within BioMind and how they are deployed in practical systems, including deep learning for tumor detection, MRI image translation/quality enhance and deep learning for vessel segmentation. I will summarize and discuss future directions on deep learning for health.

Biography of the speaker: Dr. Jiashi Feng is currently chief scientist of BioMind and an assistant professor with the Department of Electrical and Computer Engineering at National University of Singapore. He received his

Ph.D. degree from NUS in 2014. Before joining NUS, he was a postdoc researcher in the EECS department and ICSI at the University of California, Berkeley. His research areas include machine learning and their applications in computer vision and AI. He has authored/co-authored more than 100 technical papers on deep learning, robust machine learning, image classification, object detection, face recognition. He received the best technical demo award from ACM MM 2012, best paper award from TASK-CV ICCV 2015, best student paper award from ACM MM 2018. He is also the recipient of Innovators Under 35 Asia, MIT Technology Review 2018. He served as the area chairs for ACM MM 2017, 2018 and program chair for ICMR 2017.

BI 2019 Panel (12:00 - 13:30, December 14)

Panel Chairs:



Ning Zhong

Maebashi Institute of Technology,
Japan and Beijing University of
Technology, China



Hanchuan Peng

SEU-ALLEN Joint Center, Institute
for Brain and Intelligence, China

“Interdisciplinary Study and Industrial Innovation of Brain Science meets Artificial Intelligence”

Panelists:

From Brain Science Background:



Michael Fox

Harvard Medical School,
USA



Vinod Goel

York University,
Canada



Guoming Luan

Capital Medical University,
China



Xinguang Yu

Chinese PLA General
Hospital, China

From AI Background:



Yike Guo

Imperial College
London, UK



Yong Shi

Chinese Academy of
Sciences, China



Huajin Tang

Zhejiang University,
China



Feng Wu

University of Science
and Technology of China

Panel on Brain Science meets Artificial Intelligence

Interdisciplinary Study and Industrial Innovation

Introduction

Brain Science and Artificial Intelligence (AI) are becoming big science with big data and big innovation potential. Interplaying between Brain Science and AI studies has become a clear trend, introducing many big challenges and big opportunities. T

he aim of the panel is at promoting interdisciplinary studies, new industrial innovations and global collaborations in Brain Science and AI by discussing key issues, challenging topics, and answering some of the important and intriguing questions, such as:

- How do Brain Science and AI studies interplay?
- How does Brain Science inspire AI?
- How does AI technology support brain studies?
- What are fundamental issues for the development of a new generation of AI?
- What are technological advances and challenges for brain and mental health in the connected world?
- What are brain-machine intelligence advances that need 5G+AI to solve the problems that were once unsolvable in the past? And the related challenges?
- What are new industrial innovations and emerging, demanding products and services for the future of medicine, brain and mental health, and well-being?

The panel provides a great opportunity for researchers and practitioners from multidisciplinary fields to participate in cutting-edge discussions.

BI 2019 Parallel Sessions

Friday, December 13th, 2019

Brain-Machine Intelligence and Brain-Inspired Computing (Session I)

Chair: *Luzheng Bi*, Beijing Insititute of Technology, China

Session Time: 14:30 -16:00

Location: Boardroom (董事会议室)

- B204** Evaluation of Identity Information Loss in EEG-Based Biometric Systems
Meriem Romaissa Boubakeur, Guoyin Wang, Ke Liu, and Karima Benatchba
- B218** Classification of Mental Arithmetic Cognitive States Based on CNN and FBN
Ruohao Liu, Ning Zhong, Xiaofei Zhang, Yang Yang, and jiajin Huang
- B239** Do We Need a GDPR for Computer-Brain Interface Systems? A Call for Developing Policy Frameworks to Govern Data Sharing in BCIs
Bryan Boots
- B251** Back Propagation over a Spike Group
Yue Guan, Anan Li, Hui Gong, and Qingming Luo

Brain-Machine Intelligence and Brain-Inspired Computing (Session II)

Chair: *Meriem Romaissa Boubakeur*, Chongqing Univeristy of Posts and Telecommunications, China

Session Time: 16:20 -18:00

Location: Boardroom (董事会议室)

- B254** Noninvasive Neural Signals-Based Intentional Hand Movement Recognition
Luzheng Bi, Shengchao Xia, and Jiarong Wang
- B256** Neural Signatures of Brain Activity under Dual Movement Tasks
Jiarong Wang, Luzheng Bi, and Shengchao Xia
- B263** Touching Soma Segmentation Based on 3D U-Net with Weighted Loss
Tianyu Hu and Qian Liu
- B264** Multi-Scale Information Distillation Network for Brain Image Super-Resolution
Yu Sang and Li Zhu
- B267** Deep Learning Solutions for Motor Imagery Classification
Na Lu

Sunday, December 15th, 2019

Human Information Processing Systems (Session I)

Chair: *Feng Zhao*, Huazhong Univ. of Sci. & Tech., China

Session Time: 9:00 - 10:20

Location: Meeting Room I (1号办公室)

- B207** Route Adjustment of Functional Brain Network in Mental Arithmetic using Task-evoked fMRI
Xiaofei Zhang, Yang Yang, Ruohao Liu, and Ning Zhong
- B217** Study on the Connectivity of Language Network in Word Reading and Object Recognition based on tfMRI
Xiang He, Xiaofei Zhang, Yang Yang, Ting Wu, and Ning Zhong
- B235** Dynamic Functional Connectivity in the Musical Brain
Dipankar Niranjana, Petri Toiviainen, Elvira Brattico, and Vinoo Alluri
- B212** Weighted-LDA-TVM : Using a Weighted Topic Vector Model for Measuring Short Text Similarity
Xiaobo He, Jianhui Chen, and Ning Zhong

Human Information Processing Systems (Session II)

Chair: *Dipankar Niranjana*, Kohli Centre on Intelligent Systems, IIIT Hyderabad, India

Session Time: 10:40 - 12:00

Location: Meeting Room III (3号办公室)

- B225** The Classification of Motor Imagery EEG Signals Based on the Time-Frequency-Spatial Features
Xin Deng, Boxian Zhang, Liang Wang, Xiaohong Xiang, and Jin Wang
- B243** An Iterative Brain Space Location Method with High Precision
Feng Zhao, Xin Liu, Chaozhen Tan, Hui Gong, Qingming Luo, and Anan Li
- B259** Near-infrared study of Brain Synchronization between Teachers and Students in Different Teaching Methods
Hui Zhang, Yue Men, Ning Jia, and Mingming Zhang
- B260** Research on the Brain Mechanism of Situation Influence on Cooperation
Yue Men, Hui Zhang, and Ning Jia

Cognitive and Computational Foundations of Brain Science (Session I)

Chair: *Paola Di Maio*, ISTCS.ORG, UK
 Session Time: 9:00 - 10:20
 Location: Meeting Room II (2号办公室)

- B215** EEG Signal Indicator for Emotional Reactivity
Guodong Liang, Xiangmin Xu, Zicong Zheng, Xiaojie Xing, and Jianxiong Guo
- B221** Relevance of Common Spatial Patterns Ranked by Kernel PCA in Motor Imagery Classification
Luisa Velasquez, David Luna, David Cardenas, German Castaño, Carlos Acosta, and German Castellanos
- B222** Subject-oriented Dynamic Characterization of Motor Imagery Tasks using Complexity Analysis
Luisa Velasquez, Felipe Arteaga, and German Castellanos
- B228** Modeling Individual Tacit Coordination Abilities
Dor Mizrahi, Ilan Laufer, and Inon Zuckerman
- B232** EEG-based Driver Drowsiness Detection Using the Dynamic Time Dependency Method
Haolan Zhang, Qixin Zhao, Sanghyuk Lee, and Margaret Dowens

Cognitive and Computational Foundations of Brain Science (Session II)

Chair: *Dor Mizrahi*, Ariel University, Israel
 Session Time: 10:40 - 12:00
 Location: Meeting Room II (2号办公室)

- B208** Analysis of Near-Infrared Brain Effective Connectivity in Elderly Subjects with Cognitive Impairment under Multi-task
Ying Liu, Zengyong Li, Kuan Lu, Congcong Huo, and Run Ji
- B246** Input-output Organization of the Mouse Primary Auditory Cortex
Mengting Zhao, Hui Gong, Qingming Luo, and Anan Li
- B249** Functional Connectivity Difference between Typically Developing and Math Learning disability children in task-based fMRI: A data-driven study
Xiaoyu Li, Kevin Jin, Ying Yang, Xiaolin Liu, Han Fu, and Marcelo Zilberberg
- B250** Knowledge Representation: A Bridge between AI and Brain Sciences
Paola Di Maio
- B266** Brain Mechanism Research Based on fNIRS for Metacognitive Motivation
Yue Men, Ning AN, Ping Chen, and Ning Jia
- B268** Sliding Trend K Indexes are employed in Describing HRV in Patients with OSA
Shan Wu and Guanzheng Liu

Brain Big Data Analytics, Curation and Management (Session I)

Chair: *Tingwei Quan*, Wuhan National Laboratory for Optoelectronics-Huazhong University of Science and Technology, China

Session Time: 9:00 - 10:20

Location: Meeting Room III (3号办公室)

- B214** Imaging EEG Extended Sources Based on Variation Sparsity with L1-norm Residual
Furong Xu, Ke Liu, Xin Deng, and Guoyin Wang
- B227** Image-Assisted Discrimination Method for Neurodevelopmental Disorders in Infants Based on Multi-feature Fusion and Ensemble Learning
Xiaohui Dai, Shigang Wang, Honghua Li, Haichun Yue, and Jiayuan Min
- B230** Detecting Neurodegenerative Disease from MRI: A Brief Review on a Deep Learning Perspective
Manan Binth Taj Noor, Nusrat Zerin Zenia, M Shamim Kaiser, Mufti Mahmud, and Shamim Al Mamun
- B233** The Changes of Brain Networks Topology in Graph Theory of rt-fMRI Emotion Self-regulation Training
Lulu Hu, Qiang Yang, Hui Gao, Zhonglin Li, Haibing Bu, Bin Yan, and Li Tong
- B238** Application of Convolutional Neural Network in Segmenting Brain Regions from MRI Data
Hafsa Moontari Ali, M Shamim Kaiser, and Mufti Mahmud

Brain Big Data Analytics, Curation and Management (Session II)

Chair: *M Shamim Kaiser*, Jahangirnagar University, Bangladesh

Session Time: 10:40 - 12:00

Location: Meeting Room III (3号办公室)

- B241** Whole-Brain Mapping of Long-Range Inputs to the GABAergic Interneurons in the Mouse Caudal Forelimb Area
Zhuonan Duan, Hui Gong, and Xiangning Li
- B244** A Scheme for Reconstructing the Brain Regions of Nissl-stained Mouse Brain
Yue Luo, Feng Zhao, Anan Li, Hui Gong, and Qingming Luo
- B245** U-NET Based Automatic Vessel Reconstruction of Mouse Brain
Qi Zhang, Hui Gong, Qingming Luo, and Anan Li
- B247** Interactive Mouse Olfactory Bulb Segmentation Based on Deep Learning
Xin Liu, Feng Zhao, Anan Li, Hui Gong, and Qingming Luo
- B248** Nested U-Net Architecture Based Image Segmentation for 3D Neuron Reconstruction
Yong Zhang and Jian Yang
- B252** GTree: an Open-source Tool for Dense Reconstruction of Brain-wide Neuronal Population
Hang Zhou, Shiwei Li, Anan Li, Qing Huang, Feng Xiong, Ning Li, Jiacheng Han, Hongtao Kang, Yijun Chen, Yun Li, Huimin Lin, Zhiming Li, Yuhui Zhang, Xiaohua Lv, Xiuli Liu, Hui Gong, Qingming Luo, Tingwei Quan, and Shaoqun Zeng

Informatics Paradigms for Brain and Mental Health Research (Session I)

Chair: *Miguel A. Becerra*, Institución Universitaria Pascual Bravo - Medellín, Colombia

Session Time: 9:00 - 10:20

Location: Boardroom (董事会议室)

- B201** Time Recognition of Chinese Electronic Medical Record of Depression Based on Conditional Random Field
Shaofu Lin, Yuanyuan Zhao, and Zhisheng Huang
- B216** MeKG: Building a Medical Knowledge Graph by Data Mining from MEDLINE
Thuan Pham, Xiaohui Tao, Ji Zhang, Jianming Yong, Xujuan Zhou, and Raj Gururajan
- B231** Specificity Analysis of Picture-induced Emotional EEG for Discrimination between Schizophrenic and Control Participants
Hongzhi Kuai, Yang Yang, Jianhui Chen, Xiaofei Zhang, Jianzhuo Yan, and Ning Zhong
- B234** Modeling an Augmented Reality Game Environment to Enhance Behavior of ADHD Patients
Saad Alqithami, Musaad Alzahrani, Abdulkareem Alzahrani, and Ahmed Mostafa

Informatics Paradigms for Brain and Mental Health Research (Session II)

Chair: *Thuan Pham*, University of Southern Queensland, Australia

Session Time: 10:40 - 12:00

Location: Boardroom (董事会议室)

- B236** Exploring the Characterization and Classification of EEG Signals for a Computer-aided Epilepsy Diagnosis System
Emil Vega Gualán, Andrés Vargas, Miguel A. Becerra, Ana Umaquinga, Jaime A Riascos, and Diego Peluffo
- B210** Identification of Mild Cognitive Impairment based on Brain Functional Maps and 3D Deep Neural Network
Sujin Pan
- B224** Cross-species Machine Learning Improves Diagnostic Classification of Human Psychiatric Disorders
Yafeng Zhan, Jianze Wei, Jian Liang, Ran He, and Zheng Wang
- B242** Whole-brain Dissection of Dystrophic Axons of Pyramidal Neurons in Alzheimer's Mice Model
Jiangping Zhang, Ben Long, Xiangning Li, Hui Gong, and Qingming Luo
- B255** Randomized Controlled Clinical Study of An Nao Wan in the Treatment of Post-stroke Anxiety
Qiang Li and Cuixia Shang
- B262** Identifying Major Depressive Disorders from Resting-state fMRI Data Using Interpretable Learning Algorithms
Jinlong Hu, Jiaqi Zhang, Lijie Cao, Shoubin Dong, Gangqiang Hou, and Ping Li

BI 2019 Workshops/Special Sessions

Friday, December 13th, 2019

International Workshop on Brain Health Big Data and Brain-Machine Intelligence in the Four Ps Medicine of 5G Era (BBD-BMI)

Organizers:

Guoming Luan, Capital Medical University, China
Guangzhong Yin, Suzhou Guangji Hospital, China
Yong Shi, Chinese Academy of Sciences, China
Huabei Chen, Aomori University, Japan
Ning Zhong, Maebashi Institute of Technology, Japan

Session Time: 14:30 -18:00

Location: Hexie Room (和谐厅)

14:30-14:40 Welcome and Introduction

Ning Zhong, Maebashi Institute of Technology, Japan

14:40-14:45 Conferral of the Honorary Advisor of Web Intelligence Consortium to Prof. Aaron Ciechanover

Ning Zhong, Maebashi Institute of Technology, Japan
Xiaohui Tao, University of Southern Queensland, Australia

14:45-15:05 W2T Supports the Four Ps Medicine in the Connected World

Xiaohui Tao, University of Southern Queensland, Australia
Ning Zhong, Maebashi Institute of Technology, Japan

15:05-15:25 Investigation of Auditory and Visual Hierarchical Processing in Human Intracranial EEG

Qian Wang, Capital Medical University Sanbo Brain Hospital, China

15:25-15:45 Neural Circuit Modulation in Clinic Patients

Zhiqi Mao, Chinese PLA General Hospital, China

15:45-16:00 Effect of Risperidone Monotherapy on Dynamic Functional Connectivity of Insular Subdivisions in Treatment-Naive, First-Episode Schizophrenia

Jinsong Tang and Jingqi He, Zhejiang University Medical School, China

16:00-16:20 Coffee Break

16:20-16:40 Developments of Robotic Human Support Systems

Chi Zhu, Maebashi Institute of Technology, Japan

16:40-17:00 Eye Tracking Supports Big Health in the 5G Era

Linchao Qin, Beijing 7invensun Tech Co., Ltd, China

17:00-17:20 How to Construct the Image Big Data that Meets the Clinical Needs

Gang Guo, BioMind, China and Singapore

17:20-17:40 The Big Data of Healing Project

Ying Liang and Ming Ma, Beijing LongCheng Health Big Data Tech Co., Ltd, China

Workshop on Multicenter MRI: How Different Could You be from Me (WMCM)

Organizers:

Hongjian He, Zhejiang University, China
Jianhui Zhong, Zhejiang University, China

Session Time: 14:30 -18:00
Location: Heqian Room (和谦厅)

Invited Talks:

14:30-15:00 “Cross-Species Comparative Brain Connectomics in Primates”
Zheng Wang, Institute of Neuroscience, Chinese Academy of Sciences, China

15:00-15:25 “Reproducibility of Functional Brain Alterations in Major Depressive Disorder Revealed by Multisite Datasets”
Mingrui Xia, Beijing Normal University, China

15:25-15:45 “Asymmetric Fiber Tractography in Neurosurgical Planning”
Yuanjing Feng, Zhejiang University of Technology, China

15:45-16:05 “Reliability Evaluation of Voxel-Based Morphometry Analysis of Multi-Center MRI Brain Image”
Baoci Shan, Institute of High Energy Physics, Chinese Academy of Science, China

16:05-16:25 Coffee Break

16:25-16:45 “Chinese1000: Multimodal Structural Brain Atlas of Chinese Populations”
Peipeng Liang, Capital Normal University, China

16:45-17:05 “Multicenter Diffusion MRI with Traveling Subjects”
Hongjian He/Jianhui Zhong, Zhejiang University, China

17:05-17:20 “Harmonization of Multicenter Diffusion Kurtosis Imaging Data Using Deep Learning: Training Data Dependence”
Qiqi Tong, Zhejiang University, China

17:20-17:35 “Reliability of Brain Structural Volume and Asymmetry Measurements in Three Traveling Subjects: A Multisite MP2RAGE Prospective Study”
Jiachen Du, Capital Normal University, China

17:35-17:50 “A Center-Node Cooperation Network of Multi-Modal and Multi-Dimensional Brain Data from Many Sources for Sharing and Management”
Riji Cai, Shanghai Research Center for Brain Science and Brain-Inspired Intelligence, China

Special Session on Learnable Representation and Analytics of Neuroimaging (LRAN)

Organizers:

Jiannong Cao, Hong Kong Polytechnic University, China

Senzhang Wang, Nanjing University of Aeronautics & Astronautics, China

Jiating Zhu, Hong Kong Polytechnic University, China

Ming Liu, University of Electronic Science and Technology of China, China

Daoqiang Zhang, Nanjing University of Aeronautics & Astronautics, China

Session Time: 14:30 -18:00

Location: Hexun Room (和逊厅)

Invited Talks:

“Learning and Self-Organization in Signal Processing for Neuroimaging”

Michael Herrmann, The University of Edinburgh, UK

“Machine Learning for Brain Network Analysis”

Daoqiang Zhang, Nanjing University of Aeronautics & Astronautics, China

S18210 Long-Short Term Memory Generative Adversarial Networks for Perceived Images Reconstruction from Human Brain Activity
Shuo Huang, Liang Sun, Muhammad Yousefnezhad, and Daoqiang Zhang

S18209 A Proposal of the EEG Controlling Based on Deep Learning
He Zhang, and Xiangdong Kong

S18208 Joint Learning from Structural and Functional Brain Networks via GCNs for Neurological Disorder Analysis
Jiahao Liu, Guixiang Ma, Fei Jiang, Chun-Ta Lu, Senzhang Wang, Philip S. Yu, and Ann B. Ragin

S18206 Context guided adaptive graph embedding
Chen Li

S18205 Long Short-term Memory (LSTM)-based Method for ADHD Disease Classification
Chenyang Zhao, Jiannong Cao, and Senzhang Wang

S18203 MVGAT: Graph Attention Networks for Multi-View Brain Network Classification
Hao Miao, Hao Peng, and Lin Liu

S18201 Brain-to-Brain Network (B2BNet) for Categorical Analyses of Resting-state fMRI
Jiating Zhu and Jiannong Cao

Special Session on Brain Imaging Studies of Young Minds (BISYM)

Organizers:

Zhi Yang, Shanghai Mental Health Center, Shanghai Jiao Tong University, China
Shaozheng Qin, Beijing Normal University, China

Session Time: 14:30 -18:00

Location: Heyi Room (和怡厅)

Invited Talks:

“Neural Specialization with Generalizable Representations Underlies Children’s Cognitive and Affective Development”

Shaozheng Qin, Beijing Normal University, China

“Anxiety Disorder and Non Suicidal Self Injury Behavior in Adolescents”

Wenhong Cheng, Shanghai Mental Health Center, China

“Resting-State EEG and Its Applications in Brain Cognitive Development”

Xu Lei, Southwest University, China

“The X-Chromosome Effect on Human Brain Development: Evidence from Turner Syndrome Girls”

Gaolang Gong, Beijing Normal University, China

“Neuroimaging Studies of Social Anxiety Disorder in Children and Adolescents”

Zhi Yang, Shanghai Mental Health Center, China

“Children School Function and Brain Development: Beijing Cohort Study”

Sha Tao, Beijing Normal University, China

International Workshop on Cyborg Intelligence (WCI)

Organizers:

Huajin Tang, Zhejiang University, China

Gang Pan, Zhejiang University, China

Yueming Wang, Zhejiang University, China

Session Time: 14:30 -18:00

Location: Hebian Room (和辨厅)

Invited Talks:

14:30-15:05 “A way to Affective Intelligence: Computational Psychophysiology”

Bin Hu, Lanzhou University, China

15:05-15:40 “Brain-inspired DCNN Performance Improvement Methods”

Yihong Gong, Xi'an Jiaotong University, China

15:40-16:15 “Development of Key Technology for Human Cooperative Wearable robots and Its Applications”

Zhijun Li, University of Science and Technology of China, China

16:15-16:30 Coffee Break

16:30-17:05 “Multi Granularity Cognitive Computing”

Guoyin Wang, Chongqing University of Posts and Telecommunications, China

17:05-17:40 “Psychophysiological Emotion Recognition for Assessment of Emotional Intelligence Development”

Wenming Zheng, South Eastern University, China

International Workshop on Computational Neuroaesthetics (WCN)

Organizers:

Junsong Zhang, Central China Normal University, China
Rui Li, Xiamen University, China

Session Time: 14:30 -18:00

Location: Multi-Function Conference Room (多功能会议室)

Invited Talks:

“A Survey of Image Quality Assessment Methods”

Chunxia Xiao, School of Computer, Wuhan University, China

“Artistic Stylization with Deep Neural Networks”

Jing Liao, Department of Computer Science, City University of Hong Kong, China

“What is Beauty without Awareness?”

Weina Zhu, Yunnan University, China

S06206 Action Observation Based Brain-computer Interface
Tianjian Luo

S06205 The Effects of Congruency with and Without Awareness
Chaoyuan Luo, Aoyun Zong, Drewes Jan, and Weina Zhu

S06204 Neural Mechanism of Aesthetic Experience on Eastern Abstract Art-using Brain Complex Networks
Rui Li, Changle Zhou, Xiaofei Jia, and Junsong Zhang

S06203 White Space and Chromatic Complexity: The Predictors of the Perceived Complexity of Chinese Ink Paintings and Their Downstream Consequences
Yina Li, Maolin Huang, Zhenbao Fan, and Kang Zhang

The 1st International Workshop on Computational Brain Image Analysis and Genomics (CBIAG)

Organizers:

Lei Du, Northwestern Polytechnical University, China
Shijie Zhao, Northwestern Polytechnical University, China
Tuo Zhang, Northwestern Polytechnical University, China
Xintao Hu, Northwestern Polytechnical University, China

Session Time: 14:30 -18:00

Location: Meeting Room I (1号办公室)

Invited Talks:

“Genetically Evolved Cluster Algorithm in Image Genetics”

Xia'an Bi, Hunan Normal University, China

“Linked Social-Communication Dimensions and Connectivity in Functional Brain Networks in Autism Spectrum Disorder”

Xujun Duan, University of Electronic Science and Technology of China, China

S09203 Deep Recurrent Autoencoder Model for Brain Hemodynamic Response Patterns Recognition
Shijie Zhao, Yan Cui, and Xin Zhang

S09202 Gyrus Hinges Could Consist of the Core of Cortico-cortical Brain Networks
Zhibin He, Ying Huang, Tianming Liu, and Tuo Zhang

Special Session on Neurophysiological Signal and Information Processing for Healthcare Engineering (NSIPHE)

Organizers:

Xun Chen, University of Science and Technology of China, China

Peng Xu, University of Electronic Science and Technology of China, China

Jing Jin, East China University of Science and Technology, China

Session Time: 14:30 -17:30

Location: Meeting Room II (2号办公室)

Invited Talks:

14:30-15:00 “Self-Powered Bioelectronics for Sensing and Stimulation in Neuro”

Zhou Li, Beijing Institute of Nanoenergy and Nanosystems, China

15:00-15:30 “Dynamics Modelling for Cortical Neural Signals in Motor Brain-Machine Interfaces”

Yueming Wang, Zhejiang University, China

15:30-16:00 “Inferring Brain Effective Connectivity in Epilepsy sEEG Signals”

Chunfeng Yang, Southeast University, China

16:00-16:10 Coffee Break

16:10-16:30 “Classification of ADHD and Normal Children Using the Spatial Brain Network of Task-State EEG”

Chunli Chen, University of Electronic Science and Technology of China, China

16:30-16:50 “A Novel EMD Based Artificial Time Frames Generating Method for Motor Imagery BCI”

Liu Chang, East China University of Science and Technology, China

16:50-17:10 “Brain Computer Interface Motor Imagery, EEG, Riemannian Covariance, Multi-Layer Perceptron”

Pengpeng Yang, Zhengzhou University, China

17:10-17:30 “Dynamic Decision-Making Process Analysis Based on Hidden Markov Modeling”

Qin Tao, University of Electronic Science and Technology of China, China

Industry Workshop

Organizers:

Neuracle Technology (Changzhou) Co., Ltd, China

Session Time: 17:30 -18:00

***Special Session on Imaging Brain Networks in Psychiatric Disorders
(IBNPD)***

Organizers:

Mingrui Xia, Beijing Normal University, China
Fei Wang, China Medical University, China

Session Time: 14:30 -17:40

Location: Meeting Room III (3号办公室)

Invited Talks:

“Biomarker Identification and Individualized Prediction Based on Neuroimaging Big Data”

Jing Sui, Institute of Automation, Chinese Academy of Science, China

“Identifying Novel Biomarkers and Biotypes across Major Psychiatric Disorders Using Deep Learning Approach”

Miao Chang, China Medical University, China

“Brain Connectome Big Data Reveals Transdiagnostic Network Dysfunction across Psychiatric Disorders”

Mingrui Xia, Beijing Normal University, China

“The Challenges and Prospective Solutions of Neuroimaging in Major Psychiatric Disorders”

Fei Wang, China Medical University, China

Sunday, December 15th, 2019

The 3rd Annual Workshop on Novel Methods of the Brain Imaging in the Clinical and Preclinical Neuroscience (NMBICPN)

Organizers:

Vicky Yamamoto, University of Southern California, USA
Jinsong Tang, Zhejiang University, China

Session Time: 9:00 - 12:00

Location: Hexie Room (和谐厅)

Invited Talks:

To be announced...

Vicky Yamamoto, University of South California, USA

“Towards AI-Enabled Devices in Managing People with Neurological Disorders”

Mufti Mahmud, Nottingham Trent University, UK

S01202 Research on the Effect of Background Music on Working Memory Based on Granger Causal Network

Ying Li, Lingyue Wang, Dongying Zhang, Shuaishuai Wang, and Zhaobing Ni

S12201 Myelin covariance network in refractory mesial temporal lobe epilepsy by T1- and T2-weighted MRI

Yuchao Jiang, Wei Li, Dongmei An, Dong Zhou, Dezhong Yao, and Cheng Luo

S14201 Analysis of Macaca Mulatta's Eye Opening and Closing Behavior Based on Deep Learning

Wei He, Sheng-Long Xu, Jia-Jin Lin, Juan Guo, Jin Wang, Guo-Zhen Guo, and Jing Li

S15201 Abstract thinking following severe traumatic brain injury

Okechukwu Frank and Simisola Abigail Adeyemo

S19201 Power-Connectivity Deep Capsule Neural Network for Gait-Pattern Classification

Tian Wang, Nitish Thakor, and Anastasios Bezerianos

Special Session on Algorithm and Chips for Computational Brain Science and Clinical Applications (ACCBSCA)

Organizer:

Jing He, Swinburne University of Technology, Australia

Session Time: 9:00 - 12:00

Location: Heqian Room (和谦厅)

Invited Talks:

9:00-9:20 “AI Technologies for Building Intelligent Chatbots and Knowledge Bases”

Rui Zhang, The University of Melbourne, Australia

9:20-9:40 A Fuzzy Association Rule Method for Multiple Sources of Data with Various Data Collecting Conditions

Hui Zheng, Swinburne University of Technology, Australia

9:40-10:00 Innovative Classification Model for MI-based EEG Signals

Yuanyuan Wu, Swinburne University of Technology, Australia

10:20-10:40 Coffee Break

10:40-11:00 Smart Electric Meter based on Big Data Technology

Yunyao Li, Nanjing University of Finance & Economics, China

11:00-11:20 DNA Sequencing Technology based on Subgraph Isomorphism

Peixin He, Nanjing University of Finance & Economics, China

11:20-11:40 Building up Intelligent Refinery Factory based on Smart Technology

Kai Zhang, Swinburne University of Technology, Australia

11:40-12:00 Dust Pelletizing System

Peixin He, Nanjing University of Finance & Economics, China

S17204 Assistant decision-making system for dynamic project management based on micro service

Yingting Guo and Wen Xu

The 2nd International Workshop on Cognitive Neuroscience of Thinking and Reasoning (CNTR)

Organizer:

Peipeng Liang, Capital Normal University, China

Session Time: 9:00 - 12:00

Location: Hexun Room (和逊厅)

Invited Talks:

9:00-9:20 “Reasoning with the Emotional Brain”

Vinod Goel, York University, Canada

9:20-9:40 “Brain Training: Improving Emotion Control by Cognitive Enhancement”

Antao Chen, Southwest University, China

9:40-10:00 “Does Inductive Inference Affect Perceptual Discrimination? — Affective Priming Effects of Perceptual Discrimination”

Ke Jiang, Wenzhou Medical University, China

10:00-10:20 “Cognitive Neural Mechanism of Rule Learning”

Fuhong Li, Jiangxi Normal University, China

10:20-10:40 Coffee Break

10:40-11:00 “FN400, Slow Negative Waves, and Theta Reflect the Premise Typicality Effect during Category-based Induction”

Changquan Long, Southwest University, China

11:00-11:20 “Parallel or Serial? An Event-related Potential Study of Belief and Logic Processes in Transitive Reasoning”

Zhiqiang Yao, Liaocheng University, China

11:20-11:35 “The Late Parietal Event-related Potential Component is Hierarchically Sensitive to Chunk Tightness during Chunk Decomposition Problem Solving”

Zhonglu Zhang, Guangzhou University, China

11:35-11:50 “The Common and Distinct Neural Correlates of Relational Integration and Numerical Inductive Reasoning”

Feng Xiao, Shanxi Normal University, China

11:50-12:05 “Conflicts Induced by Different Types of Knowledge In Category-based Induction”

Yingxian Li, Capital Normal University, China

International Workshop on Neuroscience and Brain Rehabilitation (NBR)

Organizer:

Yue Lan, South China University of Technology, China

Session Time: 9:00 - 12:00

Location: Heyi Room (和怡厅)

Invited Talks:

“Transcranial Magnetic Stimulation and Swallowing Cortex Neuromodulation”

Yue Lan, Guangzhou First People's Hospital, South China University of Technology, China

“Non-Invasive Brain Stimulation: from Project Design to A New Strategy for Rehabilitation”

Guangqing Xu, Beijing Tiantan Hospital, Capital Medical University, China

“Cortical Plasticity and Neuromodulation”

Tifei Yuan, Shanghai Mental Health Center, China

“Precision Neuromodulation and Movement Disorders”

Zhong Zheng, West China hospital of Sichuan University, China

“Short-Latency Afferent Inhibition and Its Application in Neurorehabilitation”

Xiaokuo He, Xiamen the Fifth Hospital, China

“Rehabilitation Therapies for Mild Cognitive Impairment”

Ying Shen, The First Affiliated Hospital of Nanjing Medical University, China

Special Session on Interactive Cognition and Self-driving (ICS)

Organizers:

Nan Ma, Beijing Union University, China
Yue Gao, Tsinghua University, China

Session Time: 9:00 - 11:20

Location: Hebian Room (和辨厅)

Invited Talks:

9:00-9:30 “Precise Point Set Registration Method for Scene Reconstruction and Unmanned Vehicle Localization”

Shaoyi Du, Xi'an Jiaotong University, China

9:30-10:00 “Interactive Cognition in Self-Driving: A Multi-Agent Interaction Approach”

Jiahong Li, Beijing Union University, China

10:00-10:20 Coffee Break

10:20-10:35 “Hypergraph-Based Multi-Perceptual Decision-Making Model for Self-Driving Vehicles”

Shuyi Ji, Tsinghua University, China

10:35-10:50 “The Robo-Taxi Application Design in Unmanned Vehicle”

Huan Zhang, Beijing Union University, China

10:50-11:05 “Differential Evolution with a Pattern-Based Representation Scheme for Multi-Robot Coverage Path Planning”

Meng Xu, Beijing Institute of Technology, China

11:05-11:20 “Interaction and Control of Brain-Controlled Intelligent Vehicle”

Luzheng Bi, Beijing Institute of Technology, China

S16206 Feature extraction and fusion algorithm based on multi-view data

Li Chen, Nan Ma, Yue Gao, Jiahong Li, Honghong Guo, Yuxiang Tian, and Guoping Zhang

Special Session on Computational Social Analysis for Mental Health (CSAMH)

Organizers:

Xiaohui Tao, University of Southern Queensland, Australia

Maria Flavia Guinazu, University of Chile, Chile

Juan D. Velásquez, University of Chile, Chile

Session Time: 9:00 - 12:00

Location: Multi-Function Conference Room (多功能会议室)

Invited Talks:

“Multi-View Text Representation and Genetic Algorithm based Ensemble Learn

Xiaoying Gao, Victoria University of Wellington, New Zealand

To be announced...

Xin Li, Research director, Iflytek Co.Ltd , China

“A Subgraph Isomorphism Algorithm for Privacy Preserving in Dynamic Social Network”

Jing He, Swinburne University of Technology, Australia

S07204 Identification of Stress Impact on Personality Density Distributions

Brendan Lys, Xiaohui Tao, Tony Machin, Ji Zhang, and Ning Zhong

S07203 A Preliminary Study of the Impact of Lateral Head Orientations on the Current Distributions during tDCS

Bo Song, Marilia Menezes de Oliveira, Shuaifang Wang, Yan Li, Peng Wen, and Tony Ahfock

S07201 Establishment of Risk Prediction Model for Retinopathy in Type 2 Diabetic Patients

Jianzhuo Yan, Xiaoxue Du, Hongxia Xu, and Hongxia Xu

S07202 Anesthesia assessment based on ICA permutation entropy analysis of two-channel EEG signals

Tianning Li, Prashanth Sivakumar, and Xiaohui Tao

General Information

About the Conference

On-Site Registration Hours

December 13, 2019	9:30 - 18:00
December 14, 2019	8:00 - 18:00
December 15, 2019	8:30 - 12:00

General Inquiries

For queries, please contact the Conference Secretariat of BI'19 at +86 16619891564 or email to bi_visaletter@yeah.net.

Conference Banquet

Time: 18:00 - 20:00 p.m., on December 14 (Saturday)

Location: 3F Grand Ballroom

Volunteers

You may ask Volunteers for help. They will be happy to help you.

Badge

Each badge carries the Attendee's name and affiliation. Please present the badge when attending all the conference activities, including technical sessions, lunches, and the banquet.

Language

The conference and all its activities will be conducted in English.

Note to Speakers

If you are scheduled to present, please ensure that your PPT is well prepared in advance. Please visit the Registration Desk if you have any questions about the presentation.

Internet Access

WiFi Internet access is available at the conference venue.

Mobile Phones & Laptop Sound

As a courtesy to presenters and colleagues, please ensure that all mobile phones and sound from your laptop are switched off during the conference sessions.

Smoking Area

Delegates should be aware that indoor smoking is forbidden in all public areas in Haikou.

About Haikou

Location

Haikou, known as the 'Coconut City', is the capital of Hainan Province, China's second largest island. The city features beautiful sunshine, crystal water and soft sand. It is the provincial administrative center of Hainan as well being the focus of the local economy, culture and transportation. It stands at the northern end of Hainan Island, on the west bank of the Nandu River estuary. This river is the longest on the island and the city's name appropriately means 'Mouth of the Sea'.

Time

Haikou is eight hours ahead of Greenwich Mean Time.

Language

Chinese is the official language. The official language is used in government departments in all official documents and communication.

Electricity and Adapters

The household electricity in China is 220v. A universal travel adapter may be necessary when using laptops or other electronic appliances you bring from abroad.

EMERGENCY CONTACT

Urgent message of incidents and accidents to the police is 110. Please call 119 for emergency fire, and 120 for ambulance.

Hotel Reservation

International Academic Exchange Center of Hainan University offers discounted prices for BI 2019 conference participants. Please download and fill in the Reservation Form, and then, send its scanned version to the Sales & Marketing Department of BI 2019 official by email.

Tel: (86-0898) 66736666

Email: bi_visaletter@yeah.net

The Conference Venue

International Academic Exchange Center of Hainan University

The BI'19 Conference will take place at the International Academic Exchange Center of Hainan University.



International Academic Exchange Center of Hainan University

No.58, Renmin Avenue,

Meilan District, Hainan 570228, China

Tel: (86-0898) 66736666

Organization Committee BI 2019

General Chair:

Qingming Luo Hainan University, China

Program Committee Chairs:

Peipeng Liang Capital Normal University, China
Vinod Goel York University, Canada
Chunlei Shan Shanghai University of Traditional Chinese Medicine, China

Organizing Chairs:

Xin Lou Chinese PLA General Hospital, China
Nan Ma Beijing Union University, China
Feng Xu Tsinghua University, China

Workshop Chairs:

Yang Yang Beijing Forestry University, China/Maebashi Institute of Technology,
Japan
Mufti Mahmud Nottingham Trent University, UK

Publicity Chairs:

Zhiqi Mao Chinese PLA General Hospital, China
M Shamim Kaiser Jahangirnagar University, Bangladesh

Steering Committee Chairs:

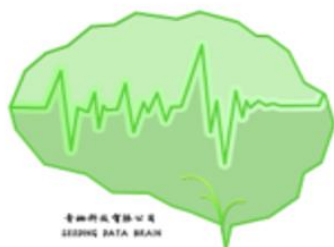
Qionghai Dai Tsinghua University, China
Ning Zhong Maebashi Institute of Technology, Japan
Hanchuan Peng Allen Institute for Brain Science, USA

Program Committee BI 2019

Jun Bai	Institute of Automation, Chinese Academy of Sciences, China
Liheng Bian	Beijing Institute of Technology, China
Przemyslaw Biecek	University of Warsaw, Poland
Nizar Bouguila	Concordia University, Canada
Weidong Cai	The University of Sydney, Australia
Mirko Cesarini	University Milano-Bicocca, Italy
Jianhui Chen	Beijing University of Technology, China
Xun Chen	University of Science and Technology of China, China
Gopikrishna Deshpande	Auburn University, USA
Hongwei Dong	University of Southern California, USA
Denggui Fan	University of Science and Technology Beijing, China
Yong Fan	University of Pennsylvania, USA
Lu Fang	Tsinghua-Berkeley Shenzhen Institute, China
Mohand-Said Hacid	Universite Claude Bernard Lyon 1, France
Bin He	Carnegie Mellon University, USA
Hongjian He	Zhejiang University, China
Tianzi Jiang	Chinese Academy of Sciences, China
Colin Johnson	The University of Kent, UK
Yongjie Li	University of Electronic Science and Technology of China
Youjun Li	North China University of Technology, China
Feng Liu	Harvard Medical School, USA
Ke Liu	Chongqing University of Posts and Telecommunications, China
Tianming Liu	University of Georgia, USA
Weifeng Liu	China University of Petroleum, China
Yiguang Liu	Sichuan University, China
Changquan Long	Southwest University, China
Lucelene Lopes	Pontifical Catholic University of Rio Grande do Sul, Brazil
Roussanka Loukanova	Stockholm University, Sweden
Gang Pan	Zhejiang University, China

Abdel-Badeeh Salem	Ain Shams University, Egypt
Dominik Slezak	University of Warsaw, Poland
Neil Smalheiser	University of Illinois, USA
Diego Sona	Istituto Italiano di Tecnologia, Italy
Niels Taatgen	University of Groningen, Netherlands
Ryszard Tadeusiewicz	AGH University of Science and Technology, Poland
Xiaohui Tao	University of Southern Queensland, Australia
Egon L. Van den Broek	Utrecht University, Netherlands
Xiaohong Wan	Beijing Normal University, China
Changdong Wang	Sun Yat-sen University, China
Guoyin Wang	Chongqing University of Posts and Telecommunications, China
Junkai Wang	Tsinghua University, China
Qing Wang	Northwestern Polytechnical University, China
Shouyi Wang	The University of Texas at Arlington, USA
Yangang Wang	Southeast University, China
Zheng Wang	Chinese Academy of Sciences, China
Zhijiang Wang	Peking University Institute of Mental Health, China
Feng Wu	University of Science and Technology of China, China
Feng Xu	Tsinghua University, China
Chaogan Yan	Chinese Academy of Sciences, China
Yang Yang	Beijing Forestry University, China/Maebashi Institute of Technology, Japan
Zhi Yang	Shanghai Jiao Tong University, China
Yiyu Yao	University of Regina, Canada
Fabio Massimo Zanzotto	University of Rome Tor Vergata, Italy
Yanqing Zhang	Georgia State University, USA
Yao Zhao	Beijing Jiaotong University, China
Hongyin Zhu	Chinese Academy of Sciences, China

Corporate Sponsors



Hainan Provincial Health Committee	Chinese Research Hospital Association (CRHA) Medical Imaging and Artificial Intelligence Branch
Department of Commerce of Hainan Province	Chinese Neuromodulation Society
Haikou Municipal Health Committee	Ministry of Science and Technology, Foreign Talent Resources (Dalian Talent Bank)
Chinese Society for Cognitive Science	IEEE Computational Intelligence Society
Chinese Psychological Society	International Neural Network Society
CAAI Technical Committee on Brain Science and Artificial Intelligence	Springers Lecture Notes in Artificial Intelligence

Hainan Medical University	Beijing LongCheng Natural Science Research Institute
Hainan Province Enterprise Directors Association	Institute of People's Health
Hainan Province Enterprise Confederation	Beijing LongCheng Quantum Technology Research Institute
Haikou Convention & Exhibition Industry	Chang Zhi ASCN Medicine Group Co., Ltd.
Beijing Qingyang Science and Technology Co., Ltd.	Yellow River Bank Preparatory Committee
Beijing 7invensun Technology Co., Ltd.	Zhong Nan Bank Preparatory Committee
Beijing LongCheng Health Big Data Technology Co., Ltd.	Zhong Yu Wealth (Beijing) Cultural Communication Co., Ltd.
Beijing LongCheng Virtual Business Investment & Management Co., Ltd.	Selfwealth (Beijing) Technology Co., Ltd.