



Brain Informatics and Health

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Informatics-enabled studies are transforming brain science. New methodologies enhance human interpretive powers when dealing with big data sets increasingly derived from advanced neuro-imaging technologies, including fMRI, PET, MEG, EEG and fNIRS, as well as from other sources like eye-tracking and from wearable, portable, micro and nano devices. New experimental methods, such as in toto imaging, deep tissue imaging, optogenetics and dense-electrode recording are generating massive amounts of brain data at very fine spatial and temporal resolutions. These technologies allow measuring, modeling, managing and mining of multiple forms of big brain data. Brain informatics & health related techniques for analyzing all the data will help achieve a better understanding of human thought, memory, learning, decision-making, emotion, consciousness and social behaviors. These methods also assist in building brain-inspired, human-level wisdom-computing paradigms and technologies, improving the treatment efficacy of mental health and brain disorders.

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The Brain Informatics & Health (BIH) book series addresses the computational, cognitive, physiological, biological, physical, ecological and social perspectives of brain informatics as well as topics relating to brain health, mental health and well-being. It also welcomes emerging information technologies, including but not limited to Internet of Things (IoT), cloud computing, big data analytics and interactive knowledge discovery related to brain research. The BIH book series also encourages submissions that explore how advanced computing technologies are applied to and make a difference in various large-scale brain studies and their applications.

The series serves as a central source of reference for brain informatics and computational brain studies. The series aims to publish thorough and cohesive overviews on specific topics in brain informatics and health, as well as works that are larger in scope than survey articles and that will contain more detailed background information. The series also provides a single point of coverage of advanced and timely topics and a forum for topics that may not have reached a level of maturity to warrant a comprehensive textbook.

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