

IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS

JBHI Special Issue on “Artificial Intelligence-enabled translational mental healthcare and cognitive neuroscience”

Mental health and neurological disorders are significant global health concerns, and the complexity of these disorders necessitates innovative approaches for diagnosis and treatment. AI technology has a promising role for the transformation of mental healthcare and its pitfalls. The integration of AI-based computational techniques with the cognitive science offers promising solutions to address these challenges. Given the increasing prevalence of these disorders and the growing interest in computational neuroscience, this special issue is both important and timely.

Currently, the world faces a critical transformation in the fourth industrial age, called digital revolution, that distinguished by the integration of different technology types. Accordingly, this special issue aims to bridge the gap between AI and cognitive neuroscience to facilitate the translation toward the clinical practice applications. It fills the gap in the current coverage of other related journals by focusing specifically on the application of computational approaches to mental healthcare and neurological disorders. While existing literature may touch on aspects of these topics, this special issue provides a comprehensive overview of the latest advancements and methodologies in this area, thereby complementing and expanding the existing body of knowledge with highlighting the impactful role of AI in clinical practice for mental healthcare.

This special issue aligns closely with the focus of the JBHI on Cognitive Neuroscience, which emphasizes understanding of the brain function and dysfunction. By showcasing the latest advances in AI and the computational approaches for mental healthcare and neurological disorders services, it contributes to the journal's mission of advancing knowledge in cognitive neuroscience and related fields.

Topics of interest include, but are not limited to, the following:

- AI-based cognitive neuroscience
- Cognitive dysfunction in depression
- Medical image processing of neuroimaging
- Personalized treatment planning in epilepsy
- Data analytics for diagnosis of neurological disease
- Computational techniques for early prognosis of schizophrenia
- Predictive modelling for early detection of mental health disorders
- Artificial Intelligent in Alzheimer’s disease detection and prediction
- Implementation of AI in cognitive neuroscience and mental healthcare
- Computational approaches for cognitive deficits in Alzheimer's disease
- Computational analysis to identify neural signatures in bipolar disorder
- Computational models of anxiety disorders for improved understanding
- Artificial intelligence for big data analysis in mental health applications
- Computational tools for personalized diagnosis in neurological disorders
- Artificial intelligence in prediction and diagnosis of neurological disorders
- Computational neuroimaging analysis for biomarkers in psychiatric conditions
- Computational approaches for Parkinson's disease-related cognitive impairments

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