Special Issue

Computational Neuroscience and Artificial Intelligence: Cross-Talks and Interrelated Contributions

Message from the Guest Editor

Computational neuroscience aims to understand how the nervous system processes information to produce cognitive function and behavior. The core notion of this process is the models, that is, mathematical and computational descriptions of the system under study, including the structure, physiology, information processing and cognitive functions of the nervous system. Artificial intelligence (AI) simulates human intelligence using machines to build intelligent automation of complex tasks for such machines achieve decision making and problem solving capacities comparable to that of the human brain. Computational neuroscience and AI are mutually interrelated and benefit one another. Computational neuroscience has brought various novelties and improvements into AI. Biological neural networks have inspired the building of complex deep neural network architectures successfully used in object detection, text processing, and the prediction and early detection of diseases. This Special Issue aims to review recent advances, applications and challenges in using computational neuroscience and AI in human life.

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