

Computational Neurosciences: An Inspiration from Biological Neurosciences

Authors : Harsh Sadawarti, Kamal Malik

Abstract : Humans are the unique and the most powerful creature on this planet just because of the high level of intelligence gifted by nature. Computational Intelligence is highly influenced by the term natural intelligence, neurosciences and mathematics. To deal with the in-depth study of computational intelligence and to utilize it in real-life applications, it is quite important to understand its simulation with the human brain. In this paper, the three important parts, Frontal Lobe, Occipital Lobe and Parietal Lobe of the human brain, are compared with the ANN(Artificial Neural Network), CNN(Convolutional Neural network), and RNN(Recurrent Neural Network), respectively. Intelligent computational systems are created by combining deductive reasoning, logical concepts and high-level algorithms with the simulation and study of the human brain. Human brain is a combination of Physiology, Psychology, emotions, calculations and many other parameters which are of utmost importance that determines the overall intelligence. To create intelligent algorithms, smart machines and to simulate the human brain in an effective manner, it is quite important to have an insight into the human brain and the basic concepts of biological neurosciences.

Keywords : computational intelligence, neurosciences, convolutional neural network, recurrent neural network, artificial neural network, frontal lobe, occipital lobe, parietal lobe

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