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Editorial

Multimedia-based emerging technologies and data analytics for Neuroscience as a Service (NaaS)

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Neuroscience as a Service (NaaS) may enable neuroscience-related healthcare and scientific research to be conducted in natural environments and settings versus equipment rooms in laboratories and medical centers NaaS is somewhat analogous to the concept of Software as a service (SaaS)—decentralized cloud-based computing where a third-party provider, has the host applications. Stakeholders through the internet enable customers to focus on their domain expertise versus attempting to run complex data centers, technology stacks, and other network infrastructures. By leveraging the interdisciplinary domains of state-of-the-art AI, machine learning, neuroscience, engineering, healthcare, and physics, NaaS can create innovative platforms that may accelerate neuroscience deployment. Recent advancements in multimedia using emerging technologies contribute the state-of-the-art methodologies, systems, and innovative use of multimedia-based emerging technology services for health care.

In this Special Issue, 9 manuscripts are published which directly or indirectly relate neuroscience as a service. Digitization of Devanagari script with the use of an automated approach so that it saves time and antique data. The prescriptions given by expert doctors and the treatments which are present in ancient Vedic literature are useful for handling patients with serious diseases [1]. The Study on aloe-vera extract ZnO nanoparticles is carried out where the synthesized nanoparticles can further be used for neuroscience application such as fabrication of medical instruments [2]. Classification of optimal brain tissue using dynamic region growing and fuzzy min-max neural network in brain magnetic resonance images is carried out where normal and abnormal tissues have been identified and then a Fuzzy Min-Max Neural Network is utilized to categorize them [3]. An uncontrolled experimental study on the efficacy of a video educational programs on interception of urinary tract infection and neurological stress among teenage girls has been conducted, and the findings suggested that there is no strong relationship between teenage girls before existing knowledge measurements and selected socio-demographic factors [4]. The systematic review of Smart Health Monitoring (SHM) along with recent advancements in SHM with existing challenges has been conducted and the integration of block chain, cloud computing, Machine Learning, and Deep Learning is explained to address these challenges [5]. Fundamental Machine Learning tools such as TensorFlow, Keras, OpenCV, and Scikit Learn are utilized to detect face masks during surveillance [6]. To address the issues of irrelevant feature extraction during emotion extraction from text Leaky Relu activated Deep Neural Network (LRA-DNN) Model is proposed. The outcomes indicated that the proposed LRA-DNN obtains the highest accuracy, sensitivity, and specificity at the rate of 94.77%, 92.23%, and 95.91% respectively which is promising compared to the existing ANN, DNN and CNN methods [7]. Chronic neurological effects and photo catalytic investigation of AZO dyes were performed. The AZO dye permeability through the blood–brain barrier was found to be a factor in the development of a vast variety of chronic neurological diseases. Its consequences and impact on neurology are examined in this research [8]. Modeling and forecasting of time series data using different techniques regarding human stress have been performed and the research allows for the discovery of different strategies and reduces the type of human intelligence which ultimately leads to good health [9].

Declaration of competing interest

The author(s) declares that they have no conflicts of interest.

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