ABSTRACT

Over the last decade, AI has become an integral part of many industries specially in Healthcare Industry. The intention of AI inventions was to replicate human intelligence and aims to reduce human workload. A highly intelligent Computer Aided System will help healthcare professionals in faster decision making, optimize solution, and cost-effective system. At the same time, AI focuses on eliminating unnecessary data and make prediction based on important features. Medical data can be analyzed in numerous ways in different labels. Data Analytics is a procedure to analyze raw data and made decision based on hidden information in the data. Predictive analytics make decision about future from previous knowledge. Predictive Data analytics has promising capability of unearthing meaningful insight from data and use the information for predicting future events. Therefore, utilizing the strength of Machine Learning (ML) and Deep Learning (DL), the aim of this work is to classify disease (Parkinson, Tuberculosis, COVID19, Breast Cancer, Bone Fracture) and predict the possible outcome for fast disease detection. The objective of the work is to sustain the quality and quantity of important healthcare data for patient's health status. The work focuses on determining the important features of patient data that will reflect the prediction accuracy. Here, an optimized and evidential based predictive approach is proposed for classifying patient's data correctly. The work also addressed data imbalance problem and how to mitigate it. The work here is carried out in three steps. First, the study investigates the strength of machine learning in Parkinson disease classification different by applying two feature selection methods and the effect of feature selection on enhancing the predictive nature of machine learning models. Secondly, the important aspects of deep learning models are explored, and the efficiency of deep learning approaches on predicting infectious diseases from patient's image data is carried out. Next, section discusses an image segmentation-based approach for proper identification and enhance the disease prediction. The focus of this work is to check these approaches for real time data flow where decision is required to made fast. This work explores different aspects of ML and DL application in healthcare disease data. Designing of more robust models for disease prediction will lead to better utilization of resources and will help in proper analysis of data. This understanding will provide a flow the current research in a better proportion. So, this work can be expanded to predict any disease where feature selection is important for fast detection.