HYBRID APPROACH OF ENSEMBLE LEARNING METHODS AND DEEP LEARNING NEURAL NETWORKS TO IMPROVE THE QUALITY OF HIGHER EDUCATIONAL INSTITUTIONS

Educational Data Mining is an emerging discipline that contains many methodologies to explore and utilize large scale data from educational sectors for the better understanding of students behaviour upon various factors that affects the quality of that sector. This discipline is a crucial one nowadays, as many institutions are emerging currently offering better education than the existing one. So to survive in the market, the quality of the institutions has to be improved by training their students for better placement, entrepreneurs or any other professionals. In this research the main objective is to improve the placement rate as it decides the quality of an institution that automatically increases the admission percentage.

For that the institutions have to study their student's data. In this research the main focus is to assist such institutions to study their student's performance. This study will help them to take decisions that improves their quality in placement so that they can increase their admission percentage. To achieve this the dataset used consists of the students' academic performance in Outcome based education that follows blooms taxonomy. The reason for choosing such dataset is that it will be easy to study the students level of knowledge and can make changes in their curriculum depending on that.

To categorize such records and to make decisions, a hybrid approach of Ensemble method in deep learning neural networks is used. The Ensemble methods used here is bagging and boosting. Bootstrap aggregating, also called bagging, is a machine learning ensemble meta-algorithm designed to improve the stability and accuracy of machine learning algorithms used in statistical classification and regression. All the Bootstrap samples will be trained using different classifiers like J48 and Naïve Bayes. Individual classifiers are then combined through major vote process, the class chosen was by the most number of classifiers in the ensemble design. The result got from the bagging can be further improved by boosting by applying artificial neural networks. Because of this, it is possible to design a system that assists the institution to make crucial decision for their quality improvement.