Abstract

This study uses the classification techniques of data mining to mine data of Computer Science students of Kwame Nkrumah University of Science and Technology, Kumasi, Ghana to ascertain if there is any pattern between the entry grades with which students enter university and their grades upon graduation. The WEKA workbench was used for the analysis to determine relationship between Senior High School (SHS) aggregate, Best 6 and final Cumulative Weighted Average (CWA) of students. It highlighted the performance of students admitted from the three categories (A, B, C) of SHS in the country using J48 decision tree, Instance based learner and Multi-Layer Perceptron algorithms. The classification models developed with the algorithms were used to predict students final CWA upon graduation and performances of algorithms were compared and contrasted using accuracy, scalability, speed, robustness and interpretability. Results indicated a weak correlation between Best 6 aggregate and Final CWA. It was discovered that students from Category C of SHS performed better (graduating with First class or 2nd Class Upper) compared with students from Category A and B schools. The J48 decision tree algorithm was adjudged the overall best algorithm.
References


Index Terms

Computer Science Algorithms
Keywords

J48 decision tree, K-nearest neighbor, Multilayer perceptron, WEKA