STUDENT PERFORMANCE AND TIME-TO-DEGREE ANALYSIS USING J48 DECISION TREE ALGORITHM

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Abstract:
Classification of students and the ability to predict students performance could be useful for students and institutions in helping low performers or late completers to improve on at a early stage by identifying or predicting their final outcome. In this study, student's performance prediction models have been developed using semester grade points, time-to-degree, courses enrolled, course characteristics like course difficulty and cumulative GPA(CGPA) . J48 decision tree algorithm was used for the study. The results of study for undergraduate students' performance prediction show that prediction models based on course difficulty, semeester grade points predicting time-to-degree provide better performance compared to the other models. Moreover, this study explores time-to-degree analysis that has not been studied comprehensively. Also, it was found that students course-taking patterns varied for early,on time and late completers throwing significance on the students enrollment patterns on performance and time-to-degree, which when investigated in detail could help the students to enroll to right order of courses to graduate efficiently. The study also showed that students taking longer time to graduate do not score high CGPAs. This study envisage that results such as the ones described in this study may gradually improve the design of future students' predictive models on completion rates or time-to-degree to support students to perform well in terms of CGPA and time.

Keywords: performance management, data mining, prediction, analysis