Paper 177 – Technology

DATA MINING FOR EDUCATION: PREDICTING COMPUTER SCIENCE STUDENTS STUDY DURATION

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ABSTRACT

The bachelor program in computer science offered by department of Computer Science Universitas Klabat is intended to be completed within eight semesters or four years. However, there are students who can accomplish the course in less than four years, while others had to spend more than the specified period. This paper presents an ongoing research aims to study students' performance (grades) in the first two semesters in order to develop prediction models for duration study of computer science students. Data mining technique, classification, is applied in models development, using three selected methods: Naïve Bayes, decision tree and Support Vector Machine. Courses, gender, and grades (major-grades, basic-grades, and general-grades) serve as the independent parameters that would predict the dependent variable i.e. study duration. The resulting models of the three algorithms showed that the three algorithms could develop a pretty good study duration prediction models. Decision three and SVM predict the instances in Greater categories better than NB. Otherwise, NB is superior in predicting instances in Equal category. Nevertheless, the three algorithms failed to predict instances in Less category.
Keywords: Predictive Model, Study Duration, Classification