PREDICTION OF COURSE MARK BASED ON PREREQUISITE USING SUPPORT VECTOR REGRESSION

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Abstract
Course prerequisite is a course that must be taken prior to taking a course. An advanced course usually has one or more prerequisite courses. Performance of a student in his/her prerequisite courses is considered as an indicator of his/her potential in the following courses. In this research, a prediction of student mark in a course is predicted using his/her previous marks. Support Vector Regression (SVR) is chosen as a machine-learning method to predict the student mark based on the mark(s) of prerequisite course(s).

In this research the performance SVR for mark prediction is evaluated by comparing the predicted mark with the actual mark and then the mean square error (MSE) and Pearson correlation coefficient are calculated for a certain populated dataset. The evaluation shows MSE value of 0.205 when using the five prerequisite courses, MSE value of 0.32 when using four prerequisite courses, MSE value of 0.35 when using three prerequisite courses, MSE value of 0.91 when using two prerequisite courses and MSE value of 1.069 when using only one prerequisite course. The Pearson correlation coefficient shows a low correlation between prerequisite course(s) and the evaluated course. It has a value of 0.5 for five prerequisite courses, 0.36 for four prerequisite courses, 0.32 for three prerequisite courses,
0.27 for two prerequisite courses and a correlation value of 0.22 for a single prerequisite course.

**Keywords:** Educational Data Mining (EDM), Prediction value, Support Vector Regression