عنوان مقاله:

Identifying affecting factors on prediction of students' educational statuses

محل انتشار:

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خلاصه مقاله:

The primary focus of academic centers is on their students' performance. They are attempting to identify affecting factors on the performance of students and provide an approach to improve the students' academic levels. Educational data mining is an emerging field of study. It helps academic centers to predict and evaluate their students' statuses to improve their academic levels. This study investigates factors influencing the identification and prediction of student educational statuses from two perspectives: academic and algorithmic. A dataset including 26,000 records, was collected from students at the entire grades -including Bsc., MSc., and Ph.D.- of Ashrafi Esfahani University from Sepahanshahr of Isfahan of Iran with 27 different attributes. After preprocessing the data, three algorithms -including the decision tree, Naïve Bayes, and deep learning- were employed in the open-source Rapidminer tool. Finally, the results were put together and compared. It was observed that the decision tree algorithm with the IGR approach had the highest validation performance in predicting statuses about 95%, 68.7%, 78.2% for accuracy, recall, and precision, respectively. Also, 10 top influencing factors, and their relationship as some rules were found, which affects the final statuses of students, including passed credit, total credit, total average, rejected.

کلمات کلیدی:

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