Proactive Remediation of Identified Learning Difficulty of Students using Reinforcement Algorithm

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Abstract:

Student success is paramount in educational institutions. Early identification of students at risk of academic failure allows for timely interventions and improved learning outcomes. This paper explores the potential of reinforcement learning (RL) to address this challenge. We propose a novel framework that leverages RL to analyze student data and predict academic performance. The model is continuously refined through interactions with the educational environment, leading to more accurate risk identification and improved support for at-risk students. This approach offers several advantages over traditional methods, including handling complex data, adapting to changing student behaviors, and personalizing interventions. The paper discusses the design of the RL model, potential data sources, and the ethical considerations involved.

Keywords:

Reinforcement Learning, Educational Data Mining, At-Risk Students, Academic Performance Prediction, Early Intervention.