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Result Analysis and SGPA Prediction using SVR and LSR: A Comparative Analysis

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Abstract: *Predictive models in education leverage statistical and machine learning techniques to analyze a wide range of student data, including demographics, learning behaviors, test scores, and engagement metrics. The models aim to predict various academic outcomes such as student performance, retention rates, and dropout risks. These insights can help educators tailor learning experiences to individual students, implementing personalized interventions and support strategies where needed. Predictive analytics also enhances the effectiveness of educational institutions by identifying at-risk students early and optimizing resource allocation. The focus of this research is specifically on academic performance prediction, with an emphasis on grade forecasting. By examining existing approach in this area, the research implements the methodologies and tools used to predict student grades, uncovering patterns and trends that could lead to improved educational practices. This research paper details implementation of the above ideology on live data using Support Vector and Least Square Regression. The research also details on student segregation using KNN approach which helps catering to different students with different intellectual capabilities. The ultimate goal of this research is to bridge the gap between students' current performance and their academic potential, fostering better outcomes for all learners.*

Keywords: RAPS (Result Analysis & Prediction System), Predictive Modeling, Support Vector Regression (SVR), Least Square Regression (LSR)

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