Department of Artificial Intelligence and Data S cie n ce

STUDENT PERFORMANCE PREDICTION AND RISK ALERT

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Problem Statement and Motivation

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Educational institutions face difficulty in identifying students at risk of poor performance in time. A Big Data-based model is needed to analyze academic and behavioral data to predict student outcomes and generate early risk alerts.

Using Big Data analytics, institutions can predict student performance, provide timely support, and reduce dropout rates—leading to improved learning outcomes and overall academic success.

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Existing System

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Existing System

In the existing system, student performance is usually evaluated through traditional methods like exams, assignments, and attendance records. These approaches provide results only after assessments are completed, making it difficult to identify struggling students early. Manual analysis of data is time-consuming and lacks accuracy, with no automated way to predict performance trends or generate risk alerts in advance.

Objectives

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1. To analyze student academic, behavioral, and demographic data using Big Data technique.

2. To build a predictive model that forecasts student performance accurately.

3. To identify students at risk of poor performance or dropout early.

4. To generate automated risk alerts for timely intervention by teachers or administrators.

5. To help improve overall academic outcomes and decision-making in educational institutions.

Abstract

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This project focuses on predicting student performance and generating risk alerts using Big Data analytics. By collecting and analyzing large volumes of academic, behavioral, and demographic data, the system identifies key factors affecting student success. A predictive model is developed to forecast performance and detect at-risk students early. The generated risk alerts enable educators to take timely actions and provide personalized support. This approach helps improve learning outcomes, reduce dropout rates, and enhance overall academic performance through data-driven decision-making.

Thank You