



Using Big Data Analytics in Predicting Students Exam Performance

This article explains that how can we predict students exam performance and marks using big data..

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Introduction

Big Data analytics is an advanced technology that deals with very large and complex sets of data to extract meaningful and required information. In the education department, it plays an important role in improving learning outcomes and understanding students behavior. Educational institution collects a large amount of data daily, such as attendance record, assignment marks, quiz marks, classroom participation, and online class activities. Normally, this data was only stored like only view, but now it is analyzed to make better decisions.

Technology Overview

Data The technology behind Big Data prediction systems involves several components working together. First, data is collected from different sources such as learning management systems, online quizzes, and classroom assessments. This raw data is then processed and cleaned to remove errors or missing values. After that, machine learning algorithms and statistical models are applied to analyze patterns in student performance. The system looks at how attendance and doing assignments and test scores are connected. If a student is always absent or does not do well on assignments and tests the system can see that this student is having trouble. The system can tell that students who do okay on assignments and tests will probably do okay on exams. The system gets better at figuring things out over time because it keeps learning from information so it can make better guesses, about how students will do.

Key Findings & Impact

Research shows that early educational behavior is strongly linked with final exam result. Factors such as regular attendance, regular submission of assignments, and active participation of class in discussions significantly boosts student performance. The impact of Big Data analytics in education department is highly beneficial. Teachers can use predictive insights to provide personalized guidance and extra help to struggling students. Schools and universities can make their teaching better by looking at how the whole class is doing. This helps students see how they are doing in school. They can make changes if they need to. Schools and universities can look at the performance trends of the class to make their teaching better. Students become more aware of their standings at schools and universities and they can take corrective actions earlier at schools and universities. There is one important thing to think about and that is data privacy at schools and universities.



What's Next?

The In upcoming time, Big Data analytics in education is expected to become even more intelligent and beneficial. Artificial intelligence will be able to create customized learning plans for each student based on their strengths and weaknesses. Real-time analytics will allow immediate feedback on student performance, helping them improve continuously. Mobile applications and learning platforms may send automatic alerts and recommendations to both students and teachers.

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