Investigating the impact of artificial intelligence in education sector by predicting student performance

Harikumar Pallathadka [a], Bankuru Sonia [b], Domenic T. Sanchez [c], John V. De Vera [c], Julie Anne T. Godinez [c], Marcial T. Pepito [c]

[a] Director, Manipur International University, Imphal, Manipur, India
[b] Vignan's Institute of Information Technology, India
[c] Cebu Technological University, Cebu, Philippine

A B S T R A C T

Machine learning is an integral part of artificial intelligence. Machine learning is capable of classifying the existing data and can predict and forecast results. The evaluation of student performance in educational institutions reveals the degree of effort that educational institutions should do in order to improve the poor or average learner. The importance of using EDM models is that they leverage prior data from students to forecast unanticipated or impending student performance. Though the educational sector employs a variety of techniques to extract meaningful information about the characteristics of students who participate in the learning process, a student performance assessment model is required to assist students and faculty in moving their performance to the next level. This paper describes a machine learning based framework for forecasting student performance. Model makes use of three machine learning algorithms namely- Support vector Machine, Random Forest and Regression Analysis. The experimental findings have demonstrated that the performance of SVM is concerned with the student's performance.

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1. Introduction

In general, intelligence refers to the artificial fabrication of the human mind that can learn, plan, perceive, or understand natural language. Computer system theory and development are typically capable of executing human intelligence skills such as visual perception, voice recognition, choice, and language translation. The IT industry is primarily concerned with equipment that functions in the same way that humans do. John McCarthy defined AI as "scientific and technological knowledge for the construction of intelligent computer programmers." [1]

Machine learning and deep learning are two of the most widely used AI techniques. Individuals, companies, and government entities utilize these models to forecast based on data. Machine learning approaches are now being developed for the complexity and unpredictability of information in the food sector [2].

Machine learning is an intelligence branch (AI). Machine learning is designed to comprehend and adapt the structure of information to customer-understanding and usage models. Machine learning is an IT industry that varies from standard computer

approaches. Algorithms are a collection of clearly written instructions used in traditional reasoning by computers to define or solve a problem. In order to give findings inside a specific range, computers might prepare data inputs for factual investigation using master learning approaches. It promotes computer frameworks to create models for test data in order to automate decision-making based on data inputs [3].

This educational data aids students in making effective use of learning resources, as well as educators in using this discovered information, i.e. learning patterns, to anticipate performance.

The evaluation of student performance [4] in educational institutions reveals the degree of effort that educational institutions should do in order to improve the poor or average learner. The importance of using EDM models is that they leverage prior data from students to forecast unanticipated or impending student performance. This concept has piqued the interest of numerous academics, who are working on classification algorithms to predict the unknown labels of future occurrences. Several researchers and educational institutions became interested in the subject of forecasting student academic achievement in order to classify the