**A STUDENT PERFORMANCE ANALYSIS**

**LITERATURE SURVEY**

Team ID: NM2023TMID17100

Project Name: Unleashing the potential of our

youth: A student performance analysis

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| **S. No** | **Title of the Paper** | **Author** | **Year of Publication** | **Objective** | **Pros** | **Cons** | **Reference Link** |
| 1. | STUDENT PERFORMANCE ANALYSIS SYSTEM | Somya Mishra, Mrunal Lokare, Aniket Patil,  Prof. Chandrashekhar Badgujar | 04 Apr 2021 | This paper reviews online interface for students, faculty, etc. to increase efficiency of record management, reduce access and delivery time, enhance system security, and minimize non-value-added tasks. | The web-based student performance analysis system offers benefits such as time and effort-saving, efficient analysis, accuracy, easy data management, customization, scalability, enhanced decision-making, and improved communication to educational institutes and coaching classes. | Drawbacks of implementing a web-based student performance analysis system include dependence on technology, setup and maintenance efforts, learning curve, data security concerns, customization limitations, accessibility/connectivity issues, and overreliance on automated analysis. | <https://www.irjet.net/archives/V8/i4/IRJET-V8I4700.pdf> |
| 2. | Student Performance Analysis System using Data Mining | Disha Kalambe, Anita Labade, Surabhi Khedekar, Komal Mahajan | 24 Apr 2020 | The proposed system uses data mining to analyze student performance in academic performance, extra-curricular activities, strengths, weaknesses, and hobbies. It generates a scorecard and provides guidance for improvement, contributing to overall growth | the proposed system has the potential to harness the power of data mining to analyze student performance from a holistic perspective and provide personalized guidance, leading to improved educational outcomes for students. | The system has drawbacks such as data quality and accuracy, lack of contextual understanding, algorithm bias, limited human interaction, implementation challenges, privacy and security risks. | https://www.ijert.org/student-performance-analysis-system-using-data-mining |
| 3. | Students’ Performance Analysis Using Machine Learning Algorithms | Rosemary Vargheese , Adlene Peraira , Aswathy Ashok and Bassant Johnson | 29 June 2022 | Universities and organizations struggle with analyzing diverse student performance data. SPAS, a proposed system, uses data mining to predict performance and aid lecturers in identifying struggling students. | The proposed system predicts student performance in specific courses, tracks and retrieves performance data, and identifies poorly performing students. This assists lecturers in automatically predicting student performance, monitoring progress, and providing timely attention to struggling students. | System limitations were identified considering the users’ evaluations on the system, which are resources, time constraint, inflexible rules implemented in the system, the prediction is not updated dynamically within the system’s source codes. | https://www.ijres.org/papers/Volume-10/Issue-6/100618041809.pdf |
| 4. | Student Performance Analysis System (SPAS) | Chew Li Sa, Dayang Hanani bt. Abang Ibrahim, Emmy Dahliana Hossain, Mohammad bin Hossin | Jan 2021 | SPAS is a new system that tracks and analyzes student performance in a specific course at FCSIT, UNIMAS. It utilizes predictive system based on classification data mining to generate performance prediction rules, addressing restricted access to the existing student management system for Information System department lecturers. | The proposed system has recognition of the need for a system to track students' performance, proposal of a predictive system, focus on a specific course and department, mention of data mining technique, emphasis on student performance improvement | The system has drawbacks of lack of details on the student management system, limited explanation of privacy setting, limited scope of the proposed system, limited details on data mining technique, absence of potential challenges or limitations. | https://www.researchgate.net/publication/282956807\_Student\_performance\_analysis\_system\_SPAS |
| 5. | STUDENTS PERFORMANCE ANALYSIS SYSTEM | Vinay Devabhaktuni, Kancharla Sharath Reddy, V. Shiva Teja, G. Kavitha Reddy | 06 June 2022 | SPAS bridges gap between employers and future IT employees by analyzing college-level student performance. It uses intelligent learning algorithm for prediction. Traditional techniques inadequate, need tool for extracting useful information. | Pros of SPAS and tool for extracting useful information from student performance data bridges gap between employers and students with insights on skills' readiness for job placement. Utilizes intelligent learning algorithm and rich database for accurate performance prediction. Employs cumulative predictor algorithm with random forest trees for robust and reliable model. Facilitates data-driven decisions for universities by extracting insights from various student performance data formats. Overcomes challenges of analyzing increasing student data, enabling informed decisions about performance and placement. | Cons of this system is automation may lead to job displacement, causing concerns about unemployment and career prospects. Difficulty in attaining necessary skills for desired IT jobs may indicate a gap in the education system, resulting in inequality and limited opportunities. Reliance on SPAS for performance evaluation may raise data privacy and security concerns. The cumulative predictor algorithm in SPAS may have limitations in accuracy and reliability. Extracting useful information from various formats of student data may pose challenges in data extraction, quality, and integration. Concerns may arise regarding the potential impact, reliability, and privacy of using SPAS for performance evaluation and prediction. | https://www.irjmets.com/uploadedfiles/paper/issue\_6\_june\_2022/26568/final/fin\_irjmets1655801430.pdf |
| 6. | Students Performance Analysis System Using Cumulative Predictor Algorithm | Mr. K. Praveen Kumar, K. Sai Pranav, D Gowtham, S. Abhishek | 22 May 2022 | The project highlights the increasing automation of mundane tasks and rising expectations for students with programming skills, and the aim of the project to bridge the gap between employers and future employees using a college-level Student Performance Analysis System (SPAS). SPAS features an online web application system, intelligent learning algorithm, and cumulative predictor algorithm for performance evaluation. The objective is to provide an overview of the project's focus on using SPAS for analyzing student performance data and making job placement predictions. | The implementation of SPAS at the college level can provide several benefits, including bridging the skills gap, automating mundane tasks, utilizing intelligent learning algorithms, data-driven decision making, improving employability, and enhancing student engagement. | SPAS has potential benefits in bridging the employer-employee gap, but limitations such as limited data availability, biased data, reliance on historical data, lack of holistic evaluation, overemphasis on placement outcomes, potential stress and pressure on students, and technical challenges must be carefully considered for effective and ethical use in the college setting. | https://www.ijraset.com/research-paper/students-performance-analysis-system-using-cumulative-predictor-algorithm |
| 7. | STUDENT PERFORMANCE ANALYSIS SYSTEM | Devita Durge, Nikhil Bagul, Rushikesh Gadge, Siddhesh Bhavsar | Sep 2020 | The aims and objective of the project that is to allow users (faculty) to analyze progress of his subject, allow students to compare his performance in different tests. Provide convenience to faculty to guide and mentor students in their academic performance. To design a user-friendly graphical user interface. To conveniently maintain digital records of student, faculty and courses. | This system has the benefits of User-friendly GUI for faculty to manage student data and for students to view academic records. Academic records and performance analysis stored in image format. Pie chart displays enrolments in each course. Machine learning regression algorithm predicts upcoming test marks. Easy data update and maintenance in digital format. No data loss threat with multiple data copies. | The system has the drawbacks of Single student cannot enroll for multiple courses using same student id. Graphical user interface is user friendly but not fascinating. Student cannot analyze his grip over subtopics of same subject. | https://www.jetir.org/view?paper=JETIR2009095 |
| 8. | ACADEMIC PERFORMANCE ANALYSIS | Mr. M. Thirunavukkarasu, B.J.S.S Sriram, Javvaji Chandrasekhar Reddy | Apr 2021 | The main objective of this system is Analyzing students' overall academic performance using data segregation and prediction techniques. System provides access for students to view results and professors to receive pass/fail prediction reports using machine learning (Linear Regression, SVM). Enhances academic performance evaluation and support by assisting students who may need additional help. | Focuses on analyzing overall academic performance, not just external exams. Utilizes data segregation and prediction techniques to predict pass/fail for students. Provides a system for students to access their results and for professors to receive reports. Helps professors assist students who may need additional support. Enhances academic performance evaluation and support through machine learning algorithms.  Improves student performance and increases chances of passing exams. | Some potential cons in this system is data accuracy and reliability, overreliance on previous results, limited scope of prediction, ethical concerns, lack of personalized approach. | https://www.ijres.org/papers/Volume-10/Issue-6/100618041809.pdf |