

# A Literature Survey on Student Profile Management System

<sup>1</sup>Vishwajeet Pandey, <sup>2</sup>Aman Anand, <sup>3</sup>Prof Swapna Racherla

<sup>1</sup>Dept. of Computer Science and Engineering, Dayananda Sagar College of Engineering, Bengaluru, Karnataka, India

<sup>2</sup>Dept. of Computer Science and Engineering, Dayananda Sagar College of Engineering, Bengaluru, Karnataka, India

<sup>3</sup>Dept. of Computer Science and Engineering, Dayananda Sagar College of Engineering, Bengaluru, Karnataka, India

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**Abstract** - In this study, we propose a straightforward approach to Student Profiling. It will offer services like online enrollment and student profile development, eliminating paperwork and streamlining the record-keeping process in educational institutions.

By entering the students' USN, the students' whole profile will be visible and all the information about students can be seen by the administrators. Admins have the access to add, edit, and delete information in the student profile. College staff like professors, placement officers can have the access to view all the details of the students. And students can only view their own profile and can create a request to update or delete any information if required.

**Key Words:** Student profile, profile management, cloud computing; web app, mobile app

## 1. INTRODUCTION

The Student Profiling Software is a systematic way for managing students' information. The "Student Profiling" project provides us with a simple implementation for updating student information. It can be used by academic institutions or colleges to conveniently keep track of their students' records. Using a manual approach to achieve this goal is difficult because information is fragmented, duplicated, and collecting pertinent data might take a long time. This project is used to solve all of these issues.

"Students must identify their individual strengths and weaknesses (with the assistance of faculty members) and identify (using curriculum skills) modules that will either give instruction in their weak areas or focus evaluation in their strong areas. Therefore, profiling motivates students to be engaged with their learning experience and gives a framework for them to structure the self-directed portions of their learning programme.

Profiling, when properly applied, should be at the heart of each student's learning management. Profiling has been advocated as a means of boosting students' ability

to take charge of their own learning and of assembling a portfolio of documented experience that students can use to find work once they graduate. Profiling is also significant, especially in a college setting, as a technique of assisting students in navigating the various modular degree possibilities."

The database can be used to store daily updates from the college administration, such as "admissions, registration, finance, faculty, and business development". The module decreases human mistakes, which could cause problems with the databases, and guarantees the consistency of information, which can be viewed from everywhere during any time. This will not only help students identify their areas of strengths and weaknesses but it will also help the college administration to extract different kinds of data about the students.

## 2. BACKGROUND AND MOTIVATION

Current methods of profiling of students, i.e, maintaining their record - marks attendance, and other academic details are done manually and on paper which is a really hectic job. Creating student profiles can prove to be difficult using a manual system as the information is scattered, can be redundant and collecting relevant information may be very time consuming.

## 3. LITERATURE SURVEY

[1] Andreas Papadakis, et al.,: "Profiling Students' Performance and Measuring their Progress in the area of Multimedia Communications"

In this paper, a system for profiling students' progress in engineering disciplines is presented and built. This method allows students' status and advances in the field of communication systems to be evaluated and measured in a systematic manner. The framework is based on current engineering simulation tools that are commonly used in higher education.

For the system's implementation and early piloting, widely used tools were employed as both the educational setting and the persistence service – "context broker".

Additionally, generic parsers were used for event processing.

Performance, motivation, and competence were shown to have strong correlations. Focusing on the skills element, it was discovered that common programming language syntactical errors were not prevented. The integration of the outputs of numerous functions presented particular challenges. The algorithmic element is inaccessible to those who lack basic programming abilities. There was also a reluctance to seek assistance on behalf of the pupils. The qualitative findings were beneficial to both teachers and students in terms of successful "teaching and understanding of the course", resulting in improvement of guidelines and reading approaches.

In terms of educational professionals, it was made feasible to ask useful questions regarding the time allocation of the entire process and individual questions, as well as the differential reaction latency to critical questions. Benchmarking against peers or course standards is possible thanks to the comparison functionality based on profiles.

### **[2] Anand Desai, et al., "Student Profiling to improve teaching and learning: A Data Mining Approach"**

This study focuses on how data mining can be used in an educational environment. This study can be utilized to help schools classify students' student achievements as well as their perseverance as determined by a toughness assessment so that they can tailor their instruction to different groups of kids. For the required students, remedial lessons or extra examinations might be scheduled based on this classification. Students can also use the application to track their progress from semester to semester.

The paper tries to classify pupils based on a variety of factors, including their academic records, such as marks in 10th and 12th grades, "an aptitude test, a grit test, and the CGPA score". The K-means algorithm is given the results of all the different tests, and the categorization is based on these parameters.

This article demonstrated how students can be categorized based on their background, talents, and achievements in both technical and non-technical areas, in addition to their academic performance. This study

aims to identify students who require extra attention in order to reduce failure rates and take appropriate action at the correct moment. This research can benefit both students and teachers who both seek to reach the same goal: individual success.

### **[3] Rafiqul Zaman Khan, et al., "A Study of Cloud Computing"**

This study is based on the necessity for cloud computing, cloud computing architecture, cloud computing kinds, cloud computing services, and cloud computing offerings.

Purchasing merely computers for an organization's employees is insufficient because new applications may necessitate new software, which can be highly expensive, or the software licensing may not allow more than one user to install. Furthermore, the most crucial point is that the cost of maintaining both hardware and software is always far higher than the cost of installing the same. As a result, the IT personnel responsible for managing an organization's IT infrastructure face a significant financial and psychological strain.

Cloud computing refers to the on-demand delivery of computer resources such as computation, storage, and software. Cloud computing services for storage, database, compute, and applications are provided by top service providers such as Sales force, Google, SUN, Amazon, IBM, Oracle, and others.

The clients do not require any costs for computing infrastructure construction or maintenance of any hardware or software, which relieves them of a significant financial weight and mental stress. Clients need only link their computers or networks to cloud computing servers and pay for services using simple payment methods such as pay-per-use or subscription.

### **[4] Katsaros, Gregory, et al., "A Holistic View of Information Management in Cloud Environments"**

Cloud computing gradually impacted the application computing environment, introducing new roles and responsibilities, as well as new systematic and business models. The amount of data available and the need to handle it properly grew in tandem with the increase of service providers' capabilities and potentials. To that end, we present in this article an administration service architecture as well as the data model upon which the result is based. The concept was created to allow a storage service to be offered by a Cloud computing platform, but it is adaptive enough to work in a variety of Cloud scenarios.

Data utilization of resources and cloud services is difficult due to a lack of standards and the infrastructure's flexibility. In this paper, we established a unified management strategy for a storage Cloud, but it can be used to any sort of Cloud providers. By analyzing the information flows of the Cloud storage architecture, we were able to capture the management requirements and construct the essential models.

The ability to connect information from one model to another and the consistency of the models are critical to the Cloud system's effective management. In this scenario, rather than various information structures, the complete state of the Cloud service platform can be successfully recorded as a single monolithic model. We can use this feature to save "screenshots" of the system in case we need to relocate or re-start it in the future. The next step in this project is to investigate ontologies specifications and the possibility of transforming this unified model into Cloud ontologies, which might serve as the administrative core of a Cloud infrastructure.

#### [5] Mehdi, et al.: "IEEE International Conference on Mobile Cloud Computing"

The lesson will begin with an overview of cloud computing environments, cloud services design, the need for mobile or native cloud computing in the app industry to deal with new mobile development, internet tools, application creating tools, and the rationale for moving apps to cloud computing services. The course will cover the basics, objectives, and typical topologies of mobile cloud computing systems, as well as provide an introduction to generic mobile cloud services for app developers and marketers. This lesson will go over some of the most common issues and expenses, as well as the role of mobile cloud computing infrastructure in the field of app design and how the app industry may make a low-cost transition to cloud computing systems.

The lesson will go over privacy and security concerns. It will outline the services provided by key mobile cloud suppliers in order to demonstrate how mobile cloud traders can help android application firms. We'll look at key cloud providers like "Microsoft Windows Azure, Amazon Web Services, and Google Cloud Platform". Finally, the lesson will go over some of the best techniques in the industry, as well as some future development possibilities.

#### [6] "Systemic Risks in the Cloud Computing Model: Complex Systems Perspective" by Marbukh, V

The goal of this research is to quantify and manage the underlying systematic performance/risk tradeoff in the

"cloud computing paradigm". The cloud is regarded as a complex system, and systemic hazards are associated with the likelihood of a framework phase transformation to an undesirable permanent state. The findings point to a change in cloud infrastructure development and management paradigms away from maximizing financial prosperity and toward managing and optimizing the underlying condition benefit/risk tradeoffs, which can be done using mean-field and fluid approximations. Economic factors are thought to intensify this tradeoff by pushing "Cloud service providers" closer to the operating regime's limit, increasing the risk of overload when the system's capacity is insufficient to fulfill exogenous demand.

According to this article, the financial effects of adaptive sharing of resources are inexorably tied to the threat of systemic overflow, which might occur gradually or abruptly. Instead of the standard economic efficiency maximization paradigm, optimization problems, which manage the systemic risk of overload, should be adopted.

#### [7] Yang, et al.: "An Efficient and Secure Dynamic Auditing Protocol for Data Storage in Cloud Computing"

Data owners store their data on cloud storage, which users (data users) can gain entry through cloud computing technology. However, data exporting creates new security issues, necessitating the usage of a 3rd party monitoring service to assure integrity of data in the cloud. Because data in the cloud can be dynamically updated, several established faraway integrity checking methodologies can only be applied to passive archive material and thus cannot be used to audit the service.

An effective and secure dynamic monitoring mechanism is required to convince data owners that their data is properly stored in the cloud. In this research, a structured and privacy-preserving monitoring methodology for cloud storage systems was offered after designing an auditing framework. The arbitrary oracle model then extends our monitoring protocol to include information interactive operational activities, which is both safe and reliable. We enhance our monitoring system to support batch auditing for different owners and different clouds without the need for a trustworthy organiser. Our suggested monitoring protocols are safe and reliable, according to the analysis and simulation results, and they lower the auditor's computation costs.

In this article, we present a dynamic monitoring system that is both safe and reliable by design. Rather than employing the mask technique, To protect data privacy from auditors, it employs a mix of encryption and the bi-

linearity property of bi-linear pairing. As a result, no additional organizer is required for our multi-cloud batch auditing methodology.

Batch auditing for many owners is also possible with our accounting protocol. Furthermore, by transferring the auditing computational loads from the auditor to the server, our monitoring scheme causes reduced calculation and communication costs for the monitor, which considerably improves accounting performance and may be used in big cloud storage systems.

#### **[8] Saakshi Narula , et al.:"Cloud Computing Security: Amazon Web Service"**

The purpose of this publication is to provide an overview of digital forensics in the topic of cloud computing security. After doing a security analysis, we illustrated how "AWS (Amazon Web Service)" cloud computing works. AWS is the most reputable cloud services provider, providing not only top-notch cloud privacy but also top-notch cloud services.

Cloud computing is founded on the concept of "on-demand services", which means we may access cloud services whenever we need them and adjust them up or down as appropriate. Cloud security is the major concern in this paradigm.

"Security around data, access, and privacy protection" is a major concern in cloud computing. Cloud computing should be safe and secure, and dangers should be minimized. According to a cloud computing analysis, security should be the primary function rather than a secondary function. In terms of cloud computing, AWS has a stellar track record.

#### **[9] Charlotte Kotas , et al.:"A Comparison of Amazon Web Services and Microsoft Azure Cloud Platforms for High Performance Computing"**

This research examines compute-oriented instances from the Amazon Web Services and Microsoft Azure cloud platforms, and compares them against a variety of high-performance computing benchmarks. These comparisons show that the most cost-effective approach is determined by the application to be run.

The cheapest cloud platform for a specific use case is determined by the application's computation and communication habits. The AWS c4.8xlarge was cheaper in terms of raw computation at the time the tests were done, but Azure's H16r offered cheaper bandwidth, according to this study.

As a result, communication-intensive applications may benefit from the Azure H16r's quicker network and greater RAM, resulting in a more cost-effective solution overall. Given that cloud providers are always updating their products, testing any given application on the anticipated system is the best approach to determine how it will operate in the current cloud environment.

#### **[10] Goyal,, et al.:"An effective algorithmic approach for cost optimization in Cloud based data center"**

Cloud computing provides consumers all around the world with cost-effective IT services. It can handle a wide range of user, scientific, commercial, and corporate applications. Cloud Computing is based on the premise that the complete system may be managed and operated using only an HTTP client. A web-based client is all that is required to work with Cloud Systems and all of its uses, including office apps, corporate components, and personal data systems. It is compatible with both past and present systems. An open - sourced framework that may be used to host a wide range of online apps. Everything inside a Cloud OS can be accessed and acquired from anywhere within it, according to its new definition.

To gain access to the computer, the user simply needs to authenticate onto the Cloud Operating Database server using a conventional web browser. The desktop will contain all of the user's documents, programmes, films, audio, and other media. You may upload and work with your data from any location using cloud operating systems. It covers practically all programmes made by Cloud developers and Cloud providers, such as Word Processors, PDF Readers, Address Books, and many others. Cloud storage makes data capture and archiving more user-friendly and timely for internet users, which is the cornerstone of all types of cloud applications.

However, a thorough examination of how to optimize cloud storage in order to increase data access and storage performance is required. A mathematical explanation as well as an algorithmic technique for cloud based improvement has been offered in this research, as well as an objective optimal control problem that is addressed by a recommended optimized algorithm; as a result, information is exchanged in the most effective manner feasible. The efficiency of algorithms analogous to MapReduce Hadoop technology is indicated by simulations or investigation results in the BigData paradigm.

**[11] Nitin Naik: “Connecting google cloud system with organizational systems for effortless data analysis”**

Data analysis has grown more important in the day-to-day operations of businesses. Every organization collects a massive amount of data on a daily basis. They then build their present and future plans based on the information they've gathered. The majority of small and medium firms, on the other hand, have faced two major hurdles in the area of data analytics: the need for a variety of expensive analytical tools and IT infrastructure, as well as their workers' IT talents. One of the most effective solutions for them would be the cloud's cost-effective and on-demand IT equipment and application assets.

The Cloud System of Google is among the biggest and most advanced cloud systems, with a broad array of services, including those that are free, such as Google Drive.

This article illustrates how to create a system of systems using Google Cloud System & SAML/OpenID Connect in the simplest and most cost-effective manner feasible. The full suite of Google Drive products, including Google Sheets, Google Maps, etc can then be securely connected to the organization's system using the common SAML/OpenID Connect framework. Data analysis can then be performed using the full suite of Google Drive products, including Google Sheets, and Google Maps. Not only is this system of systems the least costly and consumer-friendly alternative, but it can also be utilized by anybody, at any time, from any location. The experimental simulation also demonstrates how simple it is to use these Google Drive capabilities to implement the proposed data analysis approach.

**[12] “Progressive web apps: An alternative to the native mobile Apps” by Fortunato, et al.**

On the mobile market, mobile apps have had tremendous success. Many organizations were interested in having their own optimized mobile apps for all main mobile operating systems, therefore this prospect drew a lot of attention. However, when designed natively for each mobile platform, these advances are costly. New advancements in web technologies have enabled more features and capabilities that were previously only available in natively designed apps. This opened up new opportunities for focusing all development efforts only on web apps, or apps that run in web browsers. The goal of this article is to learn about the evolutions,

capabilities, and constraints of designing a web app that can operate on any device.

This paper introduces Google's new Progressive Online App concept, which aims to standardize all web developments. When compared to designing the same solution for each separate mobile platform, the key advantages of developing the apps centralized as a Progressive Web App will be discussed. The current state of web technologies will also be discussed, as well as which cases Progressive Web Apps offer a strong alternative to mobile native apps.

**[13] Behl ,et al.: “Architectural Pattern of Progressive Web and Background Synchronization”**

Progressive Web Apps (PWAs) have come out as a viable substitute to conventional mobile app development. PWAs incorporate the best characteristics of both mobile and web apps, as well as capabilities like offline application loading, pushed alerts, and backdrop synchronization, all of which help to boost user engagement. The paper presents a review of how to create modern applications with PWAs. The paper talks at length about the advantages of progressive web apps over native apps.

The architectural design used to construct progressive web apps is also discussed in the paper in order to optimize the app's loading speed. The API supplied by service workers has also been thoroughly examined, including pushed alerts and backstory synchronization for a mobile app-like experience. A case study was conducted to demonstrate the operation of numerous progressive features.

In the app development market, Progressive Web Applications have a bright future. According to certain research, over 80% of users only utilize a small handful of apps on a daily basis. As a result, memory is squandered since other programmes that the customer rarely uses consume a large amount of storage. There's no need to download or keep anything to storage while creating a progressive web application. As a result, PWAs will save money by lowering the amount of memory required.

**[14] Dhananjaysinh Jhala : “A Study on Progressive Web Apps As A Unifier for Native Apps and the Web”**

The aim of this paper is to look at the features, functionality, and enormous prospects of progressive web apps as a mobile development link connecting mobile apps and the web. Progressive Online Apps

(POAs) are cross-platform web apps that leverage common web technologies to simulate the customer experience of a native app. The characteristics of a PWA combine the best of both online and native apps.

Application shell, service worker, and manifest are all necessary components for developing progressive web apps. PWAs make use of important developments in modern web browsers, web Application Programming Interface, and front-end technologies to give mobile and desktop consumers outstanding app experiences. Developers may use PWA to create better experiences and, as a result, superior apps. PWAs have been discovered to offer a lot of potential as a web-mobile app development unifying force. Early adopters will have a significant edge in this sector due to smart application design and development. Based on feature comparison and research, this study tried to provide insight into the future benefits PWA could provide.

#### [15] Achal Agrawal, et al. : "Comparison of Flutter with Other Development Platforms"

The advantages of adopting flutter over alternative app development platforms are discussed in this paper. It covers how different platforms work and what role they play in application development. Flutter is an SDK which is open-source and is used for building high-performing, better performing and stable iOS and Android mobile apps.

Flutter iOS has a higher top CPU performance than native iOS, while Native Android has a higher highest CPU performance than Flutter Android. The application produced in Flutter was much smaller in code and took a lot less time to construct than native Android and iOS apps.

The preliminary findings in this paper indicate that flutter has a modest advantage over native application development platforms, but more conclusive experiments must be conducted before a definite conclusion can be reached.

Flutter and native appear to differ little in appearance to the majority of users. To a certain extent, it can imitate native appearances. Although flutter may not be able to compete with native for developing applications at present time, the results indicate that it has a bright future.

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