

Certificates Management System

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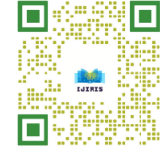
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Abstract: In the era of online learning platforms such as Coursera, Udemy, and Google Skill Boost, learners and professionals constantly earn multiple digital certificates across various domains. However, managing these certificates becomes challenging as they are scattered across different emails, devices, and cloud drives, leading to disorganization and accessibility issues. To address this challenge, CertiStore Pro is developed as a centralized, secure, and cloud-based certificate management system. The platform allows users to upload, store, manage, and visualize all their certificates in a single digital repository. Built using React for the frontend and Supabase for the backend, it ensures a seamless and responsive user experience. The integration of Tailwind CSS enhances the design aesthetics, while Vanta.js adds dynamic visual backgrounds, and Recharts provides data visualization through an interactive skill analytics dashboard. The system also features user authentication, secure file storage, and automatic skill extraction, enabling users to evaluate their learning outcomes and professional growth. This paper presents the system architecture, design flow, implementation, and evaluation results, demonstrating how CertiStore Pro improves digital credential management, enhances data security, and promotes efficient skill tracking for learners in the digital age.

Keywords: Online Learning, Digital Certificates, Cloud-Based Platform, React, Supabase, Skill Analytics, Data Visualization, Authentication, File Storage.

INTRODUCTION

Digital certificates have become a crucial part of modern education and professional development, serving as authentic proof of a learner's skills, achievements, and qualifications. With the rise of online learning platforms such as Coursera, Udemy, and Google Skill Boost, individuals now earn numerous certificates over time. However, managing these certificates remains highly unorganized for most users. The major challenges include certificates being stored across multiple devices, lack of a centralized dashboard for easy access, difficulty retrieving certificates when required, and the absence of automated insights to identify recurring or overlapping skills. As a result, learners often lose track of their accomplishments or spend unnecessary time searching through emails and drives to locate a specific certificate. To overcome these limitations, there is a growing need for a dedicated platform that can efficiently store, organize, and analyze digital certificates in a secure and user-friendly environment. CertiStore Pro has been developed to address these issues by offering a comprehensive, cloud-based solution. The system integrates key features such as cloud storage for easy accessibility, secure login authentication for data protection, and a visually appealing certificate gallery for organized viewing. Additionally, it provides skill visualization and a modern animated user interface, ensuring an engaging and seamless user experience. By combining data security, usability, and analytics, CertiStore Pro simplifies certificate management and empowers users to better understand and showcase their learning journey.

Recent Works:

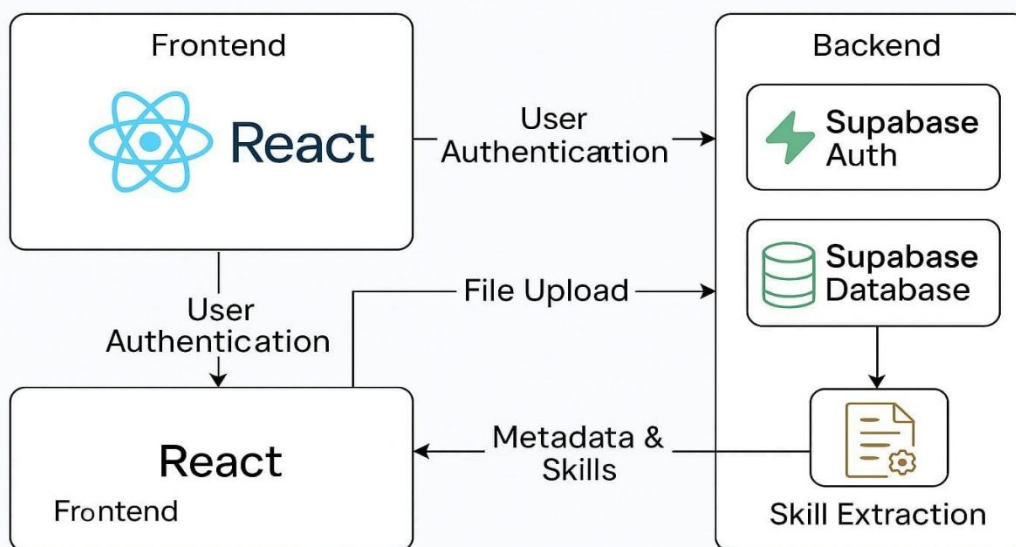
Several existing systems and studies have explored digital certificate management and credential verification, yet most focus on limited aspects of the problem. M. Sharma et al. (2020) introduced a Digital Credential Management System emphasizing secure storage but lacking an intuitive user interface. Similarly, the Coursera Engineering Team (2019) developed a certificate infrastructure primarily for certificate generation, not for long-term organization or visualization.

Google Digital Garage's Skill Recognition Study highlighted that learners frequently lose access to earned certificates due to scattered storage across emails and drives. Other approaches, such as Supabase's Authentication and File Storage APIs, provide backend solutions suitable for secure, scalable applications but do not address the user experience layer. While these works contribute to digital credential security, none offer a unified platform combining cloud-based storage, skill visualization, and modern interactive UI. CertiStore Pro bridges this gap by integrating usability, analytics, and visualization for efficient certificate management.

Proposed Work Explanation

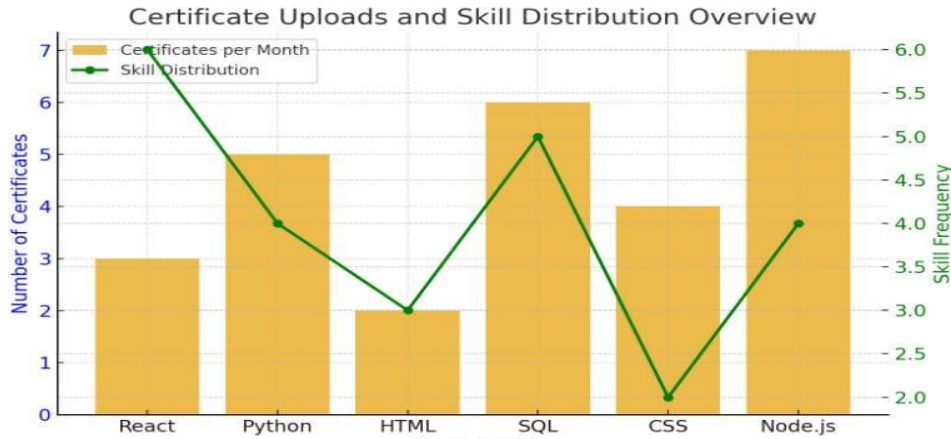
CertiStore Pro addresses the widespread issue of disorganized certificate management by offering a secure, centralized platform for users to store and access their certificates digitally from anywhere. The proposed work includes integrating Supabase as the backend to safeguard documents with cloud backups, ensuring they remain accessible even if physical devices are lost. The system features robust user authentication to maintain individual privacy and account security. Certificates uploaded to the platform are displayed in a visually appealing gallery format, making achievements easier to showcase in professional and academic scenarios. Additionally, CertiStore Pro intelligently extracts and visualizes users' skills from their certificates, helping them track and present their competencies. The project also focuses on delivering a modern, engaging user experience through advanced UI elements like Vanta animations for a polished, tech-forward interface. This work provides seamless organization, improved accessibility, and a professional solution for certificate management.

CertiStore Pro System Architecture



PREPARATION OF FIGURES

The combined bar and line graph visually represents both user activity and skill trends within the CertiStore Pro platform. The bar section shows the number of certificates uploaded from January to June, reflecting steady growth and increasing platform engagement as users adopt digital certificate management. The line graph highlights the frequency of key skills such as React, Python, SQL, and Node.js, showing that most certificates relate to programming and web development—skills that align with global e-learning trends. This unified visualization demonstrates how CertiStore Pro not only stores certificates but also evolves them into meaningful insights through skill analytics. By using Recharts for dynamic data visualization, the system allows users to track their learning focus, identify recurring competencies, and evaluate their overall progress. Ultimately, this analysis underscores the platform's effectiveness in turning scattered credentials into an organized, insightful view of personal growth and professional achievement.



Month Number	Month /Skill	Skill Category	Certificate per Month	Frequency
1	React	Frontend	3	6
2	Python	Programm	5	4
3	HTML	Frontend	2	3
4	SQL	Database	6	5
5	CSS	Frontend	4	2
6	Node js	Backend	7	4

CONCLUSION

This paper introduces CertiStore Pro, a comprehensive digital solution for certificate management tailored to the needs of students and professionals in today's fast-evolving digital landscape. By centralizing and securely storing certificates on a cloud-backed platform, CertiStore Pro minimizes the risk of data loss and ensures achievements are accessible anytime, anywhere. The platform's robust authentication system protects user privacy while its gallery view facilitates an organized and visually appealing way to present credentials. Further, innovative features such as skill visualization empower users to track and showcase their competencies effectively. The adoption of modern UI elements, including Vanta background animations, creates an engaging, professional experience that reflects the project's commitment to usability and design excellence. In conclusion, CertiStore Pro streamlines certificate storage, enhances accessibility, and provides users with a reliable, polished tool for managing and presenting their achievements, making it a valuable asset for academic and career advancement.

REFERENCES

- Chavan, P., & Narkhede, V. (2025) conducted an in-depth analysis on digital signatures and digital certificates in their paper titled "Analysis on Digital Signature, Based on Digital Certificate" published in the International Journal of Management and Development Studies.
- Amanuel, Ayezabu (2023) evaluated backend solutions in "Supabase vs Firebase: Evaluation of Performance and Functionalities," a Bachelor's thesis hosted on Theseus.fi, focusing on secure digital storage platforms.
- L. Zielke (2023) provided insights into certification management systems and their growing importance in the article "What is a Certification Management System? A 2025 Guide," published on VerifyEd.io.
- Research and Markets (2024) published the "Certificate Lifecycle Management Software Market Report 2025," detailing market trends, growth, and automation technologies in digital certificate management.
- B.Viswanathan (2025) explored blockchain-based approaches for certificate authenticity and integrity in "Enhancing Educational Certificate Management and Verification Using Blockchain," highlighting new decentralized verification methods.