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Resume & Portfolio Builder

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Abstract: ***In the rapidly evolving digital landscape, the need for an effective and professional online presence has become increasingly important for individuals seeking employment and career advancement. Traditional methods of resume creation, which rely heavily on static templates and manual editing tools, often lack flexibility, scalability, and real-time adaptability. These limitations make it difficult for users to efficiently manage and update their professional information, particularly in dynamic job markets where frequent modifications are required. Additionally, conventional approaches do not provide integrated solutions for portfolio creation, resulting in fragmented representation of an individual's skills and achievements.***

To address these challenges, this research presents the design and development of a comprehensive Resume and Portfolio Builder utilizing the MERN stack, which includes MongoDB, Express.js, React.js, and Node.js. The proposed system offers a web-based platform that enables users to create, manage, and update their professional profiles dynamically through an intuitive and responsive interface. By integrating a robust backend architecture with a scalable NoSQL database, the system ensures efficient data storage, retrieval, and real-time processing. The use of React.js facilitates seamless user interaction and instant preview of resume and portfolio outputs, enhancing overall usability and user experience.

The application supports complete CRUD (Create, Read, Update, Delete) operations, allowing users to maintain accurate and up-to-date information with minimal effort. Data entered by users is structured and stored in MongoDB, enabling flexible schema management and efficient handling of diverse data types. The backend, implemented using Node.js and Express.js, manages API requests, business logic, and secure communication between system components. This architecture ensures high performance, reliability, and scalability, making the system suitable for deployment in real-world scenarios.

Furthermore, the system dynamically generates professional resume formats and portfolio layouts based on user input, eliminating redundancy and significantly reducing the time required for document creation. The responsive design ensures compatibility across various devices, enhancing accessibility and convenience. Experimental evaluation and functional testing indicate that the system provides fast response times, efficient data handling, and a user-friendly interface, thereby improving productivity compared to traditional resume-building methods.

In conclusion, the proposed Resume and Portfolio Builder demonstrates the effectiveness of full-stack technologies in creating scalable and user-friendly applications. It simplifies professional profile management and provides a foundation for future enhancements such as authentication, PDF export, and cloud integration, highlighting the potential of modern web solutions in improving resume creation processes.

I. INTRODUCTION

In the contemporary digital era, the process of job acquisition and professional networking has undergone a significant transformation due to rapid advancements in information technology. Employers increasingly rely on digital platforms to evaluate candidates, making it essential for individuals to present their qualifications, skills, and achievements in a structured and professional manner. A well-designed resume, along with an interactive portfolio, serves as a critical tool for showcasing an individual's capabilities and creating a strong first impression in a competitive job market. Traditional methods of resume creation, such as using word processors or static templates, suffer from several limitations. These approaches often lack flexibility, require repetitive manual updates, and do not provide real-time visualization of changes. Additionally, managing multiple versions of resumes for different job roles becomes inefficient and time-consuming. The absence of centralized data storage further complicates the process, as users are unable to easily access or update their information across different platforms and devices. The emergence of modern web technologies has introduced dynamic and interactive solutions to overcome these challenges. Full-stack development frameworks enable the integration of user interfaces, server-side logic, and databases into a unified system. Among these, the MERN stack—comprising MongoDB, Express.js, React.js, and Node.js—has gained significant popularity due to its scalability, efficiency, and the use of JavaScript across all layers. This unified approach simplifies development while ensuring high performance and maintainability.

The proposed Resume and Portfolio Builder leverages the MERN stack to provide a centralized, web-based platform for managing professional profiles. The system allows users to input their personal, educational, and professional details through an intuitive interface and dynamically generates structured resumes and portfolio layouts. Features such as real-time preview, responsive design, and efficient data handling enhance usability and significantly reduce the effort required for creating and updating professional documents.

Furthermore, the system promotes accessibility and productivity by enabling users to manage their profiles from any device with internet connectivity. By organizing data into well-defined sections such as education, skills, experience, and projects, the application ensures clarity and professionalism in presentation. Overall, this project demonstrates how modern full-stack technologies can be utilized to develop scalable and user-centric solutions, providing a strong foundation for future enhancements such as authentication, PDF export, and AI-driven recommendations.

II. AIM AND OBJECTIVES

A. *Aim*

The primary aim of this research is to design and develop a web-based Resume and Portfolio Builder that enables users to efficiently create, manage, and present their professional profiles through a dynamic and user-friendly interface. The system seeks to overcome the limitations of traditional resume creation methods by integrating modern full-stack web technologies that support real-time data handling, structured information management, and seamless user interaction. By leveraging the MERN stack, the project aims to provide a scalable, flexible, and high-performance platform that simplifies the process of resume and portfolio development while ensuring accessibility across multiple devices.

Furthermore, the broader goal of this project is to establish a centralized solution for professional profile management that reduces redundancy, enhances productivity, and improves the overall quality of resume presentation. The system is designed to support dynamic content generation, allowing users to update their information effortlessly and view changes instantly. This approach aligns with the growing demand for digital tools that streamline career-related processes and provide efficient, technology-driven solutions.

B. *Objectives*

To achieve the proposed aim, the following objectives have been defined, focusing on both technical implementation and user experience:

1) Development of User-Friendly Frontend: The system aims to develop an interactive and responsive user interface using React.js. This frontend will allow users to easily input, edit, and visualize their personal, educational, and professional information. Emphasis is placed on usability, accessibility, and responsive design to ensure compatibility across multiple devices.
2) Implementation of Robust Backend System: A key objective is to design and implement a reliable backend using Node.js and Express.js. The backend will handle application logic, manage API requests, and ensure smooth communication between the frontend and database. It will also include proper error handling and validation mechanisms to maintain system stability.
3) Efficient Data Management using MongoDB: The project aims to utilize MongoDB as a NoSQL database for storing user data in a flexible and scalable format. This allows efficient handling of structured and semi-structured data, ensuring quick retrieval and easy modification without complex schema constraints.
4) Implementation of CRUD Operations:The system is designed to support full CRUD (Create, Read, Update, Delete) functionality. This enables users to add new information, view existing data, update details, and delete records as required, ensuring complete control over their professional profiles.
5) Real-Time Resume and Portfolio Generation: Another objective is to provide real-time preview functionality, allowing users to instantly visualize their resumes and portfolios as they enter or update data. This enhances user experience and ensures accuracy in content presentation.
6) Responsive and Scalable System Design: The application aims to be fully responsive and scalable, ensuring smooth performance across different devices and user loads. The modular architecture allows easy integration of new features without affecting existing functionalities.
7) Enhancement of User Productivity: The system seeks to reduce the time and effort required to create and manage resumes by automating formatting and structuring processes. This improves efficiency compared to traditional manual methods.

8) Future Feature Integration: The project is designed with extensibility in mind, allowing future enhancements such as user authentication, PDF export functionality, multiple design templates, and cloud-based deployment.

III. LITERATURE SURVEY

The development of web-based resume and portfolio systems is closely related to advancements in full-stack web technologies, user interface design, and data management systems. Various research studies and existing platforms have attempted to simplify the process of resume creation; however, several limitations still exist in terms of flexibility, scalability, and integration.

A. Traditional Resume Building Systems

Traditional resume creation methods primarily rely on word processing tools such as Microsoft Word or static template-based platforms. These systems require users to manually format and update their resumes, which is both time-consuming and inefficient. Additionally, maintaining multiple versions of resumes for different job applications becomes challenging due to the lack of centralized data storage. Such approaches also fail to provide real-time preview and dynamic content generation, limiting their usability in modern professional environments.

B. Online Resume Builder Platforms

Several online resume-building platforms have emerged to address the limitations of traditional methods. These platforms offer predefined templates and basic customization options, enabling users to generate resumes quickly. However, many of these systems are subscription-based and restrict access to advanced features such as exporting, customization, and portfolio integration. Moreover, most platforms lack backend data storage, making it difficult for users to manage and update their information over time. The absence of real-time interaction and limited flexibility further reduce their effectiveness.

C. Full-Stack Web Technologies

The introduction of full-stack frameworks, particularly the MERN stack (MongoDB, Express.js, React.js, and Node.js), has significantly improved the development of dynamic and scalable web applications. React.js enables the creation of responsive and interactive user interfaces, while Node.js and Express.js facilitate efficient server-side processing and API management. MongoDB, as a NoSQL database, provides flexibility in handling structured and unstructured data, making it suitable for applications that require dynamic data storage. These technologies collectively support the development of real-time, user-centric applications with improved performance and scalability.

D. Portfolio Management Systems

Portfolio management systems are designed to showcase an individual's projects, skills, and achievements in an interactive format. While many existing platforms allow users to create portfolios, they often operate independently of resume-building systems. This lack of integration results in fragmented representation of user profiles, where resumes and portfolios are managed separately. Additionally, customization options in such systems are often limited, and they may not support real-time updates or seamless data synchronization.

E. Research Gaps Identified

Despite the availability of various tools and technologies, several gaps remain in existing systems. There is a lack of fully integrated platforms that combine resume building and portfolio generation within a single application. Many systems do not support real-time preview or dynamic data handling, which are essential for enhancing user experience. Furthermore, issues such as limited customization, absence of scalable backend architecture, and dependency on paid services restrict accessibility for a wider audience.
The proposed Resume and Portfolio Builder addresses these gaps by providing a unified, full-stack solution that integrates frontend, backend, and database components. It offers real-time interaction, dynamic content generation, and efficient data management, thereby overcoming the limitations of traditional and existing systems.

IV. SYSTEM ARCHITECTURE

The Resume and Portfolio Builder is designed using the MERN stack architecture, which consists of MongoDB, Express.js, React.js, and Node.js. This architecture provides a unified JavaScript-based environment across all layers of the application, ensuring seamless integration, scalability, and efficient data handling.

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The system follows a three-tier architecture comprising the presentation layer (frontend), application layer (backend), and data layer (database). This modular design enhances maintainability, performance, and extensibility of the application.

A. MERN Stack Design Overview

The MERN stack is widely adopted for building modern web applications due to its flexibility and efficiency. In this system, React.js is used for developing the client-side interface, providing a responsive and interactive user experience. Node.js serves as the runtime environment for executing server-side logic, while Express.js acts as the web framework responsible for handling routing, middleware, and API requests. MongoDB is used as the database for storing user data in a flexible, JSON-like format. The use of JavaScript across all components ensures consistency and simplifies development.

B. Frontend Layer (React.js)

The frontend of the system is developed using React.js, which is responsible for rendering the user interface and managing user interactions. It provides dynamic forms for users to input their personal, educational, and professional details. The component-based architecture of React allows efficient state management and reusability of UI elements.

Additionally, the frontend supports real-time preview functionality, enabling users to instantly visualize their resumes and portfolios as they update their information. Responsive design techniques are implemented to ensure compatibility across various devices, including desktops, tablets, and smartphones. This enhances accessibility and user experience.

C. Backend Layer (Node.js and Express.js)

The backend is implemented using Node.js and Express.js, forming the core of the application logic. Node.js provides a non-blocking, event-driven environment that supports asynchronous operations, making it suitable for handling multiple user requests efficiently. Express.js is used to build RESTful APIs that facilitate communication between the frontend and the database.

The backend is responsible for processing user requests, performing data validation, handling errors, and executing business logic. It manages CRUD operations, ensuring that user data can be created, retrieved, updated, and deleted seamlessly. Middleware functions are utilized to enhance security, manage request handling, and maintain application performance.

D. Database Layer (MongoDB)

MongoDB serves as the database layer of the system, storing user data in a flexible, document-oriented format. Unlike traditional relational databases, MongoDB uses a schema-less structure, allowing easy modification and scalability. User information such as personal details, education, skills, and experience is stored as JSON-like documents, enabling efficient data retrieval and updates.

The database design ensures that data is organized and indexed properly to reduce query time and improve performance. MongoDB also supports scalability, allowing the system to handle increasing amounts of data without compromising efficiency.

E. Data Flow and System Interaction

The system follows a structured data flow to ensure smooth interaction between components. Initially, the user inputs data through the frontend interface. This data is sent to the backend via API requests, where it is validated and processed. Once validated, the data is stored in the MongoDB database.

When required, the frontend retrieves data from the backend through API calls and dynamically renders it to generate resumes and portfolio views. Any updates made by the user are immediately reflected in the database and displayed in real time on the interface. This continuous data flow ensures consistency, accuracy, and responsiveness.

F. Performance and Scalability Considerations

The system is designed with performance optimization and scalability in mind. The use of Node.js enables efficient handling of concurrent requests, while React.js ensures fast rendering through virtual DOM updates. MongoDB's flexible schema supports dynamic data handling and scalability.

Additionally, the modular architecture allows easy integration of new features without affecting existing components. The system can be further scaled by deploying it on cloud platforms, implementing load balancing, and optimizing database queries. These considerations ensure that the application remains efficient and reliable under varying workloads.

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V. PROPOSED METHODOLOGY

The proposed methodology for the Resume and Portfolio Builder focuses on transforming user input into dynamically generated, structured outputs through an integrated full-stack architecture. The system is designed to ensure efficient data handling, real-time interaction, and seamless communication between the frontend, backend, and database. The methodology follows a systematic workflow that includes data acquisition, processing, storage, and presentation, ensuring accuracy, consistency, and usability.

A. User Data Acquisition

The first stage of the methodology involves collecting user information through an interactive frontend interface developed using React.js. Users are required to enter their personal details, educational qualifications, technical skills, work experience, and project information through structured input forms. The interface is designed to be intuitive and user-friendly, reducing complexity and ensuring that users can easily provide accurate information.

Form validation techniques are implemented at the frontend level to ensure that the data entered meets required formats and constraints. This minimizes errors and improves the quality of data before it is transmitted to the backend system.

B. Data Processing and Validation

Once the user inputs the data, it is transmitted to the backend server through RESTful API calls. The backend, implemented using Node.js and Express.js, is responsible for processing and validating the received data. Server-side validation is performed to ensure data integrity, correctness, and security.

The backend also handles business logic, such as organizing the data into structured formats suitable for storage and display. Error-handling mechanisms are incorporated to manage invalid inputs and ensure reliable system performance.

C. Data Storage in MongoDB

After validation, the processed data is stored in the MongoDB database. MongoDB's document-oriented structure allows data to be stored in a flexible JSON-like format, making it suitable for handling diverse user information. Each user's profile is stored as a separate document containing fields such as personal details, education, skills, and experience.

The database design supports efficient indexing and retrieval of data, ensuring quick access during real-time operations. The schema-less nature of MongoDB also allows easy modification and scalability as new features are added to the system.

D. Dynamic Resume and Portfolio Generation

The stored data is dynamically retrieved from the database and rendered on the frontend to generate structured resume and portfolio formats. React.js is used to display this data in predefined templates, ensuring a professional and organized layout.

A key feature of the system is real-time preview, which allows users to instantly visualize changes as they update their information. This dynamic rendering eliminates the need for manual formatting and significantly reduces the time required to create professional documents.

E. CRUD Operations and Data Management

The system supports complete CRUD (Create, Read, Update, Delete) operations, enabling users to manage their data effectively. Users can add new information, view existing data, update details, and delete records as required.

Each operation triggers corresponding API calls to the backend, which processes the request and updates the database accordingly. The changes are immediately reflected on the frontend, ensuring data consistency and real-time synchronization across the system.

F. System Workflow and Data Flow

The overall workflow of the system follows a continuous data flow model. The process begins with user input, followed by data validation and processing in the backend. The validated data is stored in the database and retrieved when needed to generate output views.

The flow can be summarized as:

User Input → Frontend (React.js) → Backend API (Node.js/Express.js) → Database (MongoDB) → Response → Frontend Display

This structured flow ensures smooth interaction between system components and enhances overall efficiency.

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G. Future Enhancement Integration

The methodology is designed with extensibility in mind, allowing easy integration of additional features in future versions. Potential enhancements include user authentication and authorization systems, PDF export functionality, multiple resume templates, and cloud-based deployment.

The modular design ensures that these features can be incorporated without significant changes to the existing system, thereby improving functionality and user experience over time.

VI. RESULT AND DISCUSSION

The implementation of the Resume and Portfolio Builder demonstrates the effectiveness of integrating full-stack web technologies to create a dynamic and user-centric application. The system was evaluated based on functional performance, system responsiveness, and user experience. The results indicate that the application successfully meets its objectives by providing efficient data management, real-time interaction, and a seamless interface for creating and managing professional profiles.

A. Functional Performance

The system was tested for all core functionalities, including Create, Read, Update, and Delete (CRUD) operations. Users were able to add new profile data, retrieve stored information, update existing details, and delete records without any errors. The RESTful API endpoints developed using Node.js and Express.js functioned reliably, ensuring smooth communication between the frontend and the database.

The integration with MongoDB allowed efficient storage and retrieval of user data. Each operation was executed accurately, and the system maintained data consistency throughout. The modular design of the application ensured that different components interacted seamlessly, contributing to overall system stability.

B. System Performance and Responsiveness

Performance analysis of the application showed that the system delivers fast response times and smooth user interaction. The use of React.js enabled efficient rendering through the virtual DOM, resulting in minimal delays during real-time updates. Users experienced immediate feedback when modifying their data, particularly through the real-time preview feature.

The backend, powered by Node.js, handled multiple requests efficiently due to its asynchronous and non-blocking architecture. MongoDB further enhanced performance by allowing quick data access and updates. Overall, the system maintained stable performance even during continuous user interactions, indicating its suitability for real-world deployment.

C. User Experience Evaluation

User experience was a key focus of the system, and feedback indicates that the application is intuitive and easy to use. The structured input forms and organized layout simplify the process of entering and managing data. The real-time preview functionality significantly improves usability by allowing users to instantly visualize their resumes and portfolios. The responsive design ensures that the application works effectively across various devices, including desktops and mobile devices. Users reported that the system reduces the time and effort required to create professional resumes compared to traditional methods. The clear organization of information into sections such as education, skills, and experience enhances readability and presentation quality.

D. Comparative Analysis

When compared to traditional resume-building methods and existing online tools, the proposed system offers several advantages. Unlike static templates, the application provides dynamic content generation and real-time updates. In contrast to many online platforms, it integrates both resume and portfolio creation within a single system.

Additionally, the use of a full-stack architecture ensures better scalability and flexibility compared to standalone tools. The system eliminates the need for repetitive manual formatting and reduces dependency on paid services, making it more accessible and efficient for users.

E. Discussion

The results clearly indicate that the Resume and Portfolio Builder successfully addresses the limitations identified in existing systems. The integration of frontend, backend, and database components ensures efficient data handling and smooth system operation. The real-time preview feature enhances user interaction, while the scalable architecture supports future enhancements.

However, certain limitations were observed during evaluation. The absence of advanced features such as authentication and PDF export restricts the system's functionality in its current form. Additionally, the availability of limited templates may affect customization options for users. Despite these limitations, the system provides a strong foundation for further development and improvement.

VII. LIMITATIONS

Although the proposed Resume and Portfolio Builder demonstrates effective functionality and performance, certain limitations exist due to technical constraints and the scope of the current implementation. These limitations highlight areas that require further improvement to enhance the system's usability, scalability, and overall effectiveness.

A. Limited Template Customization

The current system provides a limited number of resume and portfolio templates, which may restrict users in customizing the design according to their preferences. While the existing templates ensure a structured and professional layout, they may not cater to diverse industry requirements or personal design choices. Expanding the template library and allowing user-defined customization would significantly improve flexibility.

B. Absence of Authentication and Security Mechanisms

The system does not currently include a dedicated user authentication and authorization mechanism. As a result, user data is not protected through login credentials or access control, which may raise concerns regarding data privacy and security. Implementing authentication features such as secure login, session management, and encrypted data handling would enhance system reliability and user trust.

C. Lack of PDF Export Functionality

One of the major limitations of the current implementation is the absence of a feature to export resumes in PDF format. Since PDF is the most commonly accepted format for professional resumes, this limitation reduces the practical usability of the system. Integrating PDF generation functionality would allow users to download and share their resumes easily.

D. Dependency on Internet Connectivity

The application is entirely web-based and requires a stable internet connection for operation. This dependency limits accessibility in offline environments or areas with poor network connectivity. Developing offline capabilities or integrating local storage mechanisms could help mitigate this limitation.

E. Limited Advanced Features

The current version of the system focuses primarily on basic resume and portfolio creation. It does not include advanced features such as AI-based content suggestions, grammar checking, or job-specific customization. Incorporating intelligent features could significantly enhance the system's functionality and provide a more personalized user experience.

F. Scalability Constraints in Current Deployment

Although the system is designed with scalability in mind, the current implementation may face challenges when handling a large number of concurrent users. Without cloud deployment, load balancing, and performance optimization strategies, system efficiency may degrade under heavy usage. Future deployment on cloud infrastructure would improve scalability and reliability.

G. Limited Cross-Platform Optimization

While the application is responsive, certain UI elements may not be fully optimized for all devices and screen sizes. Minor inconsistencies in layout or performance may occur on different platforms, particularly on smaller mobile devices. Further optimization and testing across multiple platforms are required to ensure a consistent user experience.

VIII. CONCLUSION

The development of the Resume and Portfolio Builder demonstrates the practical application of full-stack web technologies in addressing the limitations of traditional resume creation methods. By leveraging the MERN stack, the system successfully integrates

frontend, backend, and database components into a unified platform that enables dynamic and efficient management of professional profiles. The application provides users with a centralized solution to create, update, and organize their personal, educational, and professional information in a structured and accessible manner.

One of the key achievements of the system is its ability to support real-time interaction and dynamic content generation. The implementation of a responsive user interface using React.js allows users to visualize their resumes and portfolios instantly, improving accuracy and reducing the effort required for manual formatting. The backend architecture, built with Node.js and Express.js, ensures reliable processing of user requests and efficient communication with the MongoDB database, which offers flexible and scalable data storage.

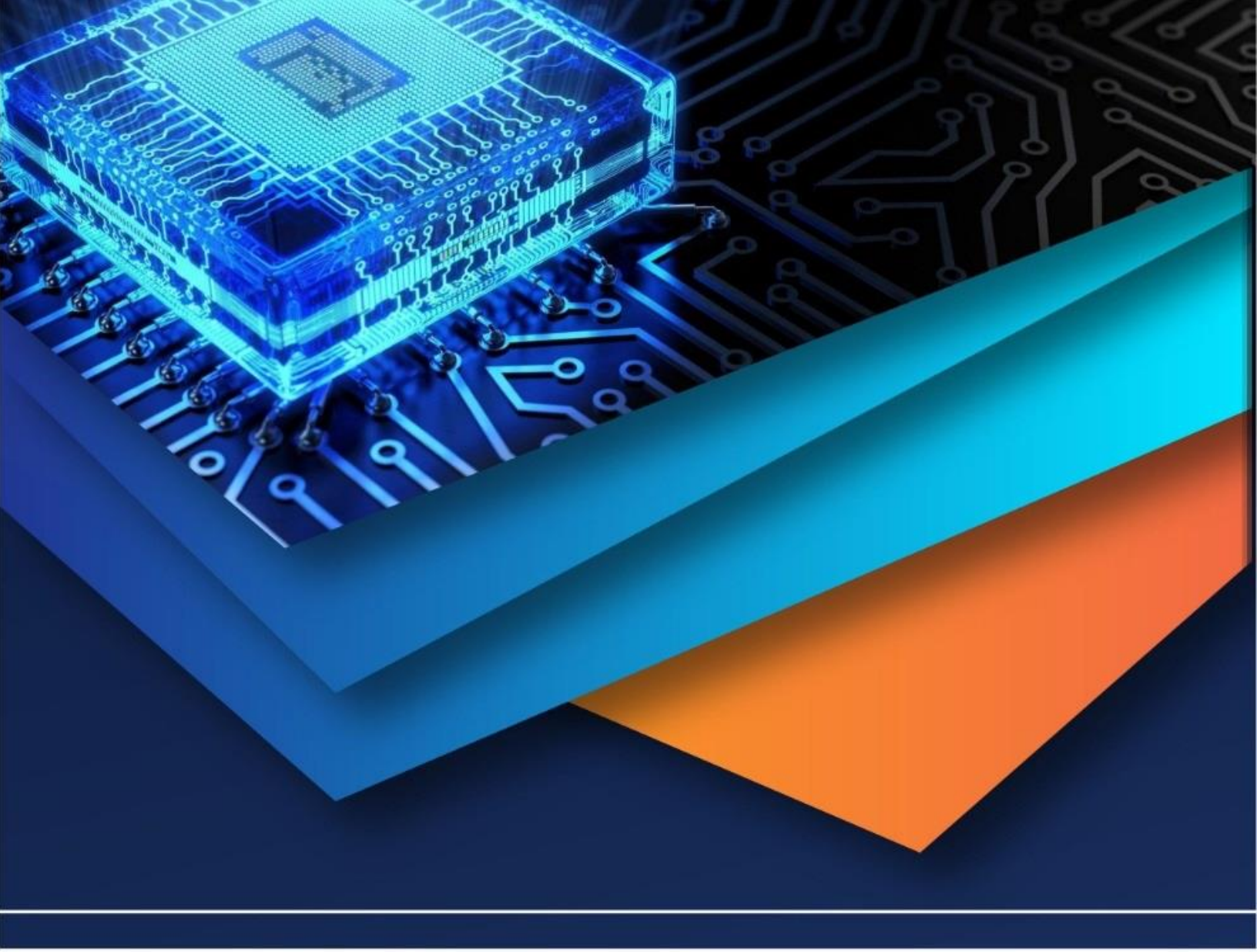
The system also demonstrates strong functional performance through the successful implementation of CRUD operations, enabling users to efficiently manage their data. The modular and scalable design ensures that the application can be extended with additional features without disrupting existing functionalities. Furthermore, the integration of modern web technologies enhances user experience by providing a fast, responsive, and intuitive platform accessible from multiple devices.

Despite certain limitations, such as the absence of advanced features like authentication, PDF export, and extended template options, the system establishes a solid foundation for future development. These enhancements can be incorporated to improve security, usability, and overall functionality. The potential integration of cloud-based deployment and AI-driven features further expands the scope of the application.

In conclusion, the Resume and Portfolio Builder highlights the effectiveness of full-stack development in creating modern, scalable, and user-centric web applications. It simplifies the process of professional profile management while providing a flexible and efficient solution aligned with current technological trends. The project not only meets its intended objectives but also opens avenues for future innovation in digital career tools, contributing to the advancement of web-based solutions for professional development.

REFERENCES

[1] MongoDB Inc., “MongoDB Documentation – The Developer Data Platform,” 2023. [Online]. Available: https://www.mongodb.com/docs/
[2] Meta Platforms Inc., “React.js Documentation,” 2024. [Online]. Available: https://react.dev/
[3] OpenJS Foundation, “Node.js Documentation,” 2024. [Online]. Available: https://nodejs.org/en/docs/
[4] Express.js Foundation, “Express.js – Fast, Unopinionated, Minimalist Web Framework,” 2023. [Online]. Available: https://expressjs.com/
[5] MongoDB University, “MERN Stack Development Guide and Best Practices,” 2023.
[6] J. Flanagan, JavaScript: The Definitive Guide, 7th ed. Sebastopol, CA, USA: O’Reilly Media, 2020.
[7] E. Freeman and E. Robson, Head First JavaScript Programming, Sebastopol, CA, USA: O’Reilly Media, 2014.
[8] D. Herron, Node.js Web Development, 5th ed. Birmingham, U.K.: Packt Publishing, 2020.
[9] A. Banks and E. Porcello, Learning React: Functional Web Development with React and Redux, 2nd ed. Sebastopol, CA, USA: O’Reilly Media, 2020.
[10] R. S. Pressman and B. R. Maxim, Software Engineering: A Practitioner’s Approach, 9th ed. New York, NY, USA: McGraw-Hill, 2019.
[11] World Wide Web Consortium (W3C), “HTML5 and Web Standards Documentation,” 2023. [Online]. Available: https://www.w3.org/
[12] Mozilla Developer Network (MDN), “Web Development Documentation,” 2024. [Online]. Available: https://developer.mozilla.org/
[13] M. Fowler, “NoSQL Databases Explained,” ThoughtWorks, 2022.
[14] K. Hwang, G. Fox, and J. Dongarra, Distributed and Cloud Computing: From Parallel Processing to the Internet of Things, San Francisco, CA, USA: Morgan Kaufmann, 2012.
[15] S. Newman, Building Microservices, 2nd ed. Sebastopol, CA, USA: O’Reilly Media, 2021.



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