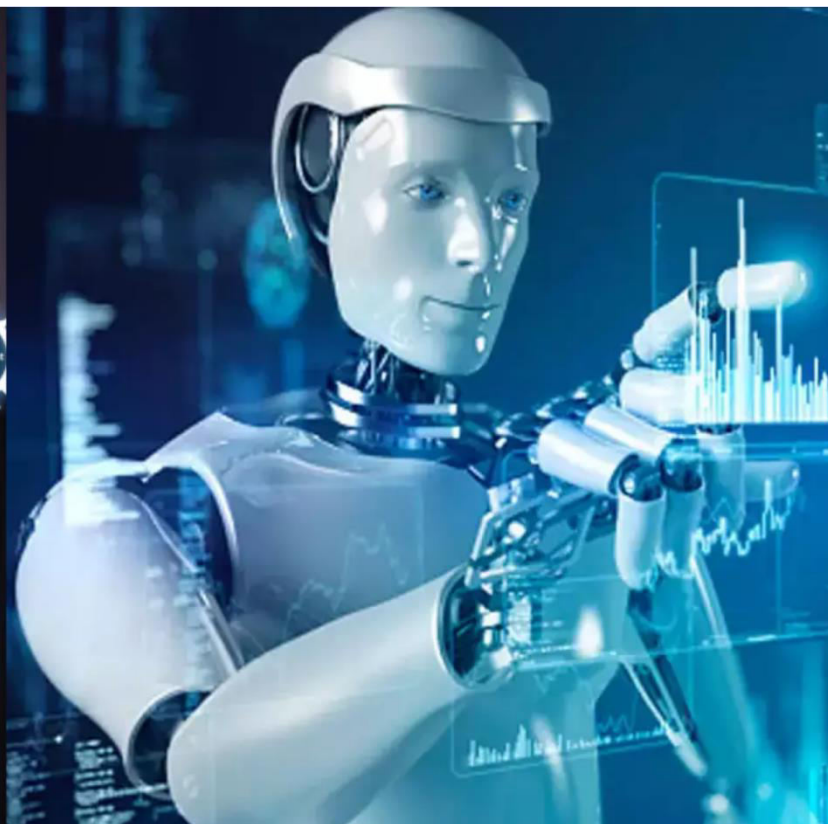




International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.699

Volume 14, Issue 11, November 2025

NextGen News

Awale Darshan Amoghsiddha¹, Yemul Laxmikant Rajesh², Bhalekar Swarali Manohar³,

Boddu Ishwar Ganesh⁴, Goden Nagesh Anand⁵

U.G. Student, Department of Computer Science and Engineering, VVPIET, Solapur, Maharashtra, India¹

U.G. Student, Department of Computer Science and Engineering, VVPIET, Solapur, Maharashtra, India²

U.G. Student, Department of Computer Science and Engineering, VVPIET, Solapur, Maharashtra, India³

U.G. Student, Department of Computer Science and Engineering, VVPIET, Solapur, Maharashtra, India⁴

Associate Professor, Department of Computer Science and Engineering, VVPIET, Solapur, Maharashtra, India⁵

ABSTRACT: The rapid growth of digital media has increased the demand for real-time, personalized, and secure news delivery platforms. This paper presents **NextGen News**, a modern web-based e-news system designed to provide users with instant access to categorized news content through an interactive and responsive interface. The proposed system integrates **Node.js**, **Express.js**, **MongoDB**, and **EJS** to deliver dynamic content generation and efficient server-client communication. A secure authentication module using bcrypt hashing ensures protection of user credentials, while session-based access enables personalized dashboards and preference-based news retrieval. The modular architecture, consisting of structured routes, models, and views, enhances scalability and maintainability. Experimental results demonstrate that the system effectively handles real-time updates, responsive rendering, and secure user interactions. The platform serves as a foundation for future advancements, including external news API integration, administrative controls, and enhanced security models using JWT.

KEYWORDS: Digital news systems, real-time content delivery, web application development, Node.js, Express.js, MongoDB, EJS templates, user authentication, bcrypt hashing, responsive design, personalized news recommendation, secure web systems, session management.

I. INTRODUCTION

Digital news platforms today must be fast, secure, and capable of adapting to individual user preferences. NextGen News addresses these needs by offering an online system that delivers timely updates across categories such as technology, politics, sports, and entertainment. The platform is built using a modern development stack—Node.js, Express.js, MongoDB, and EJS—which supports smooth interaction between the server and client, dynamic content rendering, and organized data handling.

The system includes a protected authentication process, using bcrypt for password encryption and sessions for managing user access. Users can customize their experience through features like category-based filtering and bookmarking, making the platform more engaging. The modular structure of the application also supports future expansion, enabling straightforward integration of features such as external news APIs, admin tools, analytics, and additional security enhancements.

This paper outlines the architecture, development process, security strategies, and system evaluation, demonstrating that NextGen News offers a dependable and scalable approach to delivering digital news in real time.

II. LITERATURE SURVEY

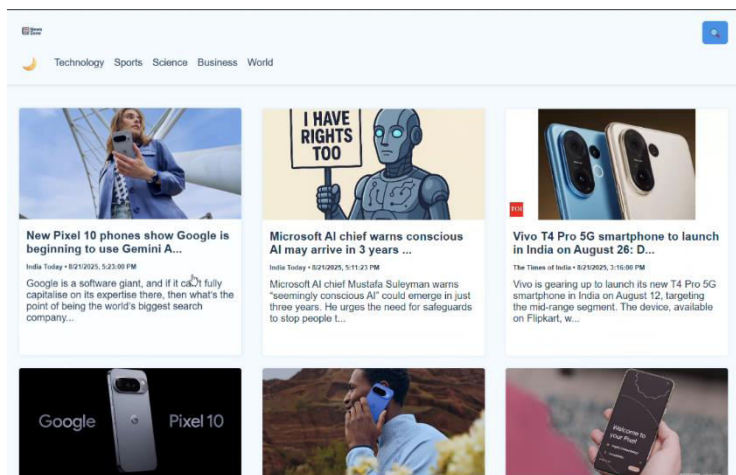
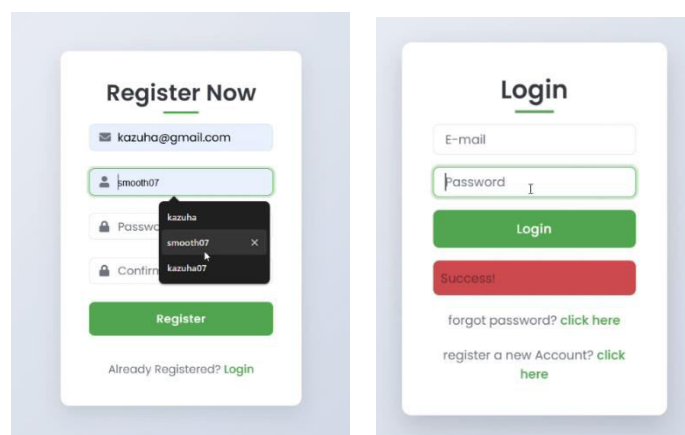
Existing research highlights the increasing demand for real-time, personalized, and secure digital news delivery systems. Studies on real-time content distribution explore technologies such as polling, Server-Sent Events (SSE), and WebSockets, emphasizing their role in ensuring fast and efficient news updates. Literature on news personalization demonstrates that recommendation techniques—particularly content-based and collaborative filtering—significantly enhance user engagement by delivering content aligned with individual preferences.

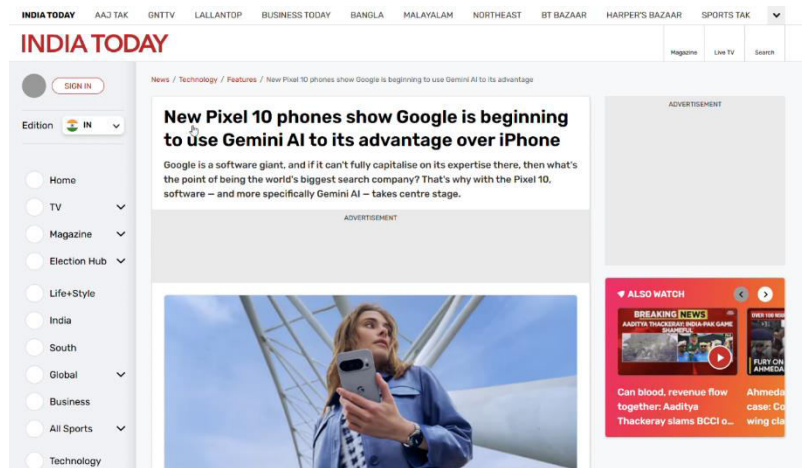
Modern web development research consistently supports the adoption of Node.js, Express.js, and MongoDB due to their scalability, modular design, and suitability for dynamic content delivery. Additionally, findings on responsive web design underline that adaptive and mobile-friendly interfaces greatly improve user experience across diverse devices. Security guidelines from recognized frameworks like OWASP reinforce the importance of hashed passwords, secure authentication workflows, session management, and robust data protection—principles that directly shape the security architecture of the NextGen News system.

III. METHODOLOGY

The methodology adopted for developing the NextGen News system follows a structured and systematic approach, encompassing requirement analysis, three-tier architectural design, backend and frontend development, database modeling, and security implementation. The platform is developed using Node.js and Express.js, with MongoDB serving as the primary database and EJS templates enabling dynamic and responsive user interface rendering. Modular routing architecture manages key functionalities such as news retrieval, user authentication, and search operations, while Mongoose schemas provide well-defined structures for user and news data storage. Robust security mechanisms—including bcrypt-based password hashing, session management, and input validation—ensure secure and reliable user interactions. The system undergoes rigorous unit, integration, security, and responsiveness testing to validate performance and stability, ultimately resulting in a scalable, secure, and efficient digital news delivery platform.

IV. EXPERIMENTAL RESULTS





V. CONCLUSION

NextGen News delivers a secure, responsive, and user-friendly platform for real-time digital news distribution. Built using Node.js, Express.js, MongoDB, and EJS, the system ensures efficient content management, seamless performance, and personalized user experiences. The project provides a robust foundation for future enhancements, including API-based news integration, advanced recommendation algorithms, and strengthened security features, making it well-suited for continued growth and scalability.

REFERENCES

- [1] Fielding & Taylor (2002)
This work lays the theoretical base for how modern web systems should be structured. It explains the core ideas behind REST, which is commonly used when building sign-up or user-registration features in web applications.
- [2] Johnson, Hoeller & Arendsen (2004)
The authors explain how the MVC approach helps organize web applications. Their insights support the typical flow of user-interface pages, including those used for creating new user accounts.
- [3] Fowler (2004)
Fowler's book introduces essential software patterns that help applications stay scalable, maintainable, and modular. These principles are highly relevant when designing backend logic for registration or login systems.
- [4] O'Reilly (2005)
This publication outlines the shift toward more interactive, user-centric web platforms in the Web 2.0 era. It highlights design concepts and business models that influence how modern sign-up and onboarding systems are shaped.
- [4] O'Reilly, T. (2005). What Is Web 2.0? Design Patterns and Business Models for the Next Generation of Software. O'Reilly Media.



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details