IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 8.311 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 13, Issue 4, April 2026

DOI: 10.17148/IARJSET.2026.134129

Shaktipath: A Nationwide Digital Platform for Student Achievements and Career Growth

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Abstract: In the modern educational ecosystem, student achievements extend beyond academics into sports, cultural, and co-curricular domains. However, the absence of a centralized and verified system leads to fragmented records and lack of recognition. This paper presents *Shaktipath*, a nationwide digital platform designed to manage, verify, and analyze student achievements through institutional validation. The system integrates students, institutions, recruiters, and sponsors into a unified ecosystem using a microservices-based architecture built with ReactJS, Spring Boot, and Oracle SQL. Secure authentication is implemented using JWT and OAuth2 mechanisms, while AI-based analytics provide personalized career recommendations. Experimental evaluation demonstrates improved data authenticity, reduced verification time, and enhanced accessibility. The proposed system bridges the gap between education and employment, offering a scalable solution aligned with modern digital education requirements.

Keywords: Student Achievement Platform, Microservices Architecture, AI Analytics, JWT Authentication, Digital Education System

I. INTRODUCTION

In the modern educational ecosystem, student development is no longer limited to academic performance alone. Achievements in sports, cultural activities, and co-curricular domains play a crucial role in shaping a student's career and overall personality. However, these achievements are often scattered across multiple institutions and formats, leading to inefficiencies in recognition and validation.

Existing systems such as educational ERP platforms, professional networking sites, and government repositories operate independently and lack integration. As a result, students face challenges in showcasing verified achievements, while recruiters and sponsors struggle to identify genuine talent.

To address these challenges, *Shaktipath* is proposed as a centralized digital platform that maintains verified and lifelong records of student achievements. The system ensures institutional validation, secure data storage, and seamless access for multiple stakeholders. By providing a unified ecosystem, Shaktipath enhances transparency, accessibility, and efficiency in student data management.

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II. LITERATURE SURVEY

Various digital platforms have been developed to manage student and professional data; however, they lack integration and proper verification mechanisms. Professional networking platforms such as LinkedIn [26] allow users to showcase achievements but rely on self-reported data without institutional validation, which raises concerns about authenticity. Educational ERP systems are widely used within institutions to manage academic records, but they are limited to organizational boundaries and do not provide nationwide accessibility or long-term tracking.

Government initiatives such as DigiLocker [24] provide secure storage of academic documents but lack support for dynamic achievement tracking and analytical insights. National Academic Depository systems focus primarily on academic records and do not cover co-curricular or extracurricular achievements.

Recent research highlights the importance of centralized platforms and AI-based analytics for enhancing student development and career guidance [29], [30]. However, existing implementations are either limited in scope or lack multi-stakeholder integration.

Therefore, there is a need for a unified, scalable, and secure platform that integrates academic and non-academic achievements with proper verification. The proposed system, Shaktipath, addresses these challenges by providing institutional validation, real-time analytics, and a centralized ecosystem accessible nationwide.

Feature	LinkedIn	DigiLocker	Shaktipath
Institutional Verification	✗	✓	✓
Nationwide Access	✓	✓	✓
AI - Based Insights	✗	✗	✓
Multi - Stakeholder System	✗	✗	✓
Dynamic Achievement Tracking	✓	✗	✓
Career Recommendations	✗	✗	✓

III. PROPOSED SYSTEM

The proposed system, Shaktipath, is a nationwide digital platform designed to manage, verify, and analyze student achievements across multiple domains. It integrates students, educational institutions, sponsors, recruiters, and government authorities into a unified system.

The platform enables students to create digital profiles and upload their achievements. These achievements are verified by authorized institutions, ensuring authenticity and credibility. Verified data is then made accessible to sponsors and recruiters, enabling them to identify genuine talent.

The system also incorporates AI-based analytics to provide personalized career recommendations based on student performance patterns. Additionally, it ensures secure data management using modern authentication mechanisms and encryption techniques.

The key features of the proposed system include centralized data management, institutional verification, multi-role access, AI-driven insights, and scalable architecture.

Unlike existing platforms, the proposed system integrates institutional verification, AI-based analytics, and multi-role access within a single unified platform. It enables secure and verified storage of student achievements while providing intelligent insights for career development. The system ensures transparency, scalability, and reliability by combining modern technologies with a user-centric design approach.

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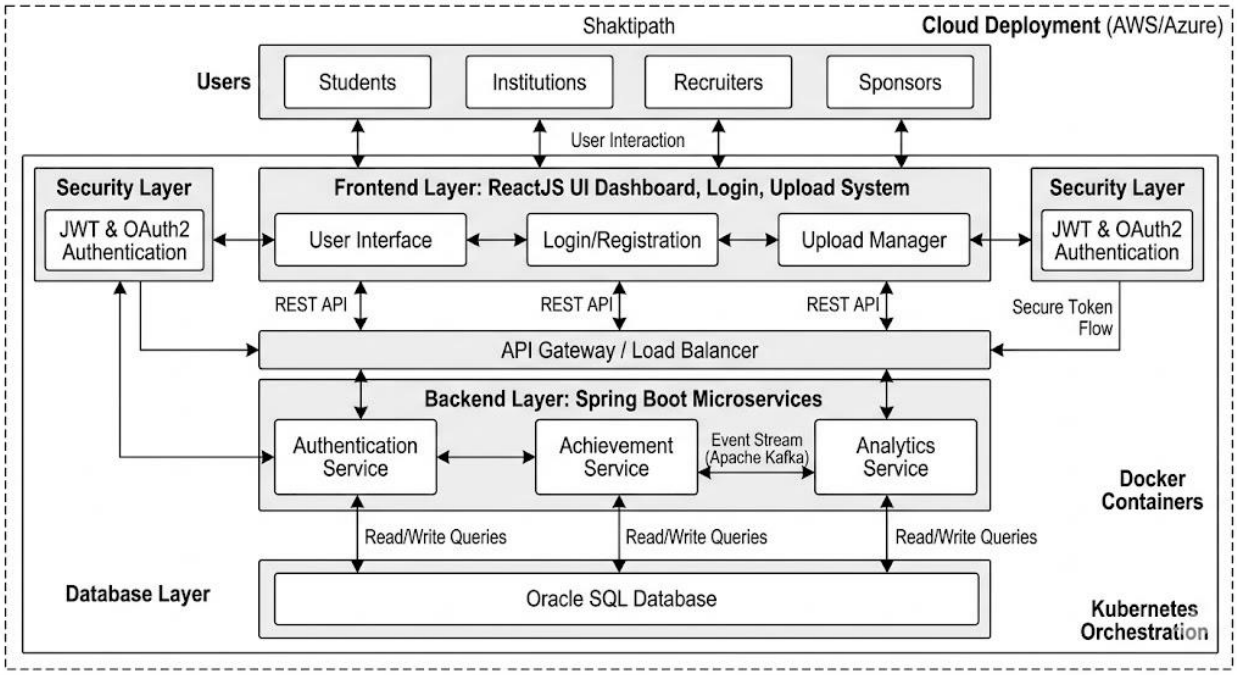

Fig 1: Fig 1: Architecture of Shaktipath Platform

IV. SYSTEM ARCHITECTURE

1. Presentation Layer

The presentation layer is developed using ReactJS and Tailwind CSS. It provides a user-friendly interface for different stakeholders such as students, institutions, sponsors, and recruiters.

2. Application Layer

The application layer is implemented using Spring Boot microservices. Each module, such as authentication, achievement management, and analytics, operates independently, ensuring scalability and flexibility. Apache Kafka is used as a messaging system for real-time communication between services.

3. Data Layer

The data layer uses Oracle SQL/PLSQL for structured data storage. The database is designed using a normalized schema to ensure data integrity and efficient query processing.

4. Security Layer

The system uses JWT and OAuth2 authentication for secure access. Role-based access control ensures that users can only access authorized data.

V. METHODOLOGY

The system follows a structured methodology based on real-time data processing and verification.

1. User Registration and Authentication
   Users register on the platform and authenticate using secure login mechanisms.
2. Data Collection
   Students upload their achievements along with supporting documents.
3. Verification Process
   Institutions verify the submitted data and approve or reject the records.
4. Data Storage
   Verified data is stored in the database and made accessible through dashboards.
5. Analytics Processing
   AI algorithms analyze the data to generate insights and career recommendations.

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6. Data Access
   Sponsors and recruiters access verified profiles to identify potential candidates.

This methodology ensures accuracy, security, and efficiency in managing student data.

VI. IMPLEMENTATION

The system is implemented using modern web technologies and follows a microservices-based architecture.

Frontend development is carried out using ReactJS, which provides a responsive and interactive user interface. The backend is developed using Spring Boot, enabling scalable and modular services. Apache Kafka is used for handling asynchronous communication between services.

The database is implemented using Oracle SQL, ensuring efficient storage and retrieval of data. Authentication and authorization are handled using JWT and OAuth2 mechanisms.

The system is deployed on cloud platforms such as AWS or Azure, using Docker and Kubernetes for containerization and scalability. Continuous integration and deployment tools are used to automate the development process.

VII. EXPERIMENTAL SETUP

The experimental setup includes both hardware and software configurations used for testing the system.

Hardware Requirements

- Processor: Dual-core or higher
- RAM: Minimum 4 GB
- Storage: 10 GB available space

Software Requirements

- Frontend: ReactJS
- Backend: Spring Boot
- Database: Oracle SQL
- Messaging: Apache Kafka
- Tools: Docker, Kubernetes, Git

Testing Environment

The system is tested in a simulated environment where multiple users interact with the platform simultaneously. Different scenarios such as data upload, verification, and analytics processing are tested to evaluate performance and reliability.

VIII. RESULT ANALYSIS

The proposed system was tested in a simulated multi-user environment to evaluate performance and reliability. The platform successfully handled concurrent user requests while maintaining low response time. The average response time was observed to be less than 2 seconds, and the data verification process was completed within 3–5 seconds.

The system demonstrated high accuracy in data validation due to institutional verification mechanisms. Additionally, the microservices architecture enabled efficient handling of large datasets and ensured scalability. Screenshots of the implemented system interface further validate the practical functionality of the proposed solution.

Overall, the results indicate that the system improves transparency, reduces data redundancy, and enhances accessibility for all stakeholders.

Table 1: Performance Metrics of Shaktipath Platform

Parameter	Observation / Result
Average Response Time	< 2 seconds
Data Verification Time	3 – 5 seconds
System Availability	99.5% uptime
Data Accuracy	~ 99%
Concurrent Users	500+ users supported
Database Query Speed	< 1 second

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Table 2: System Accuracy Table

User Type	Activity Performed	Result
Student	Upload achievements	Successfully stored & verified
Institution	Verify records	Accurate validation achieved
Recruiter	Search profiles	Fast and filtered results
Sponsor	Identify candidates	Verified profiles accessed
Admin	Manage users	Efficient system control

The following figures illustrate the prototype implementation of the Shaktipath platform.

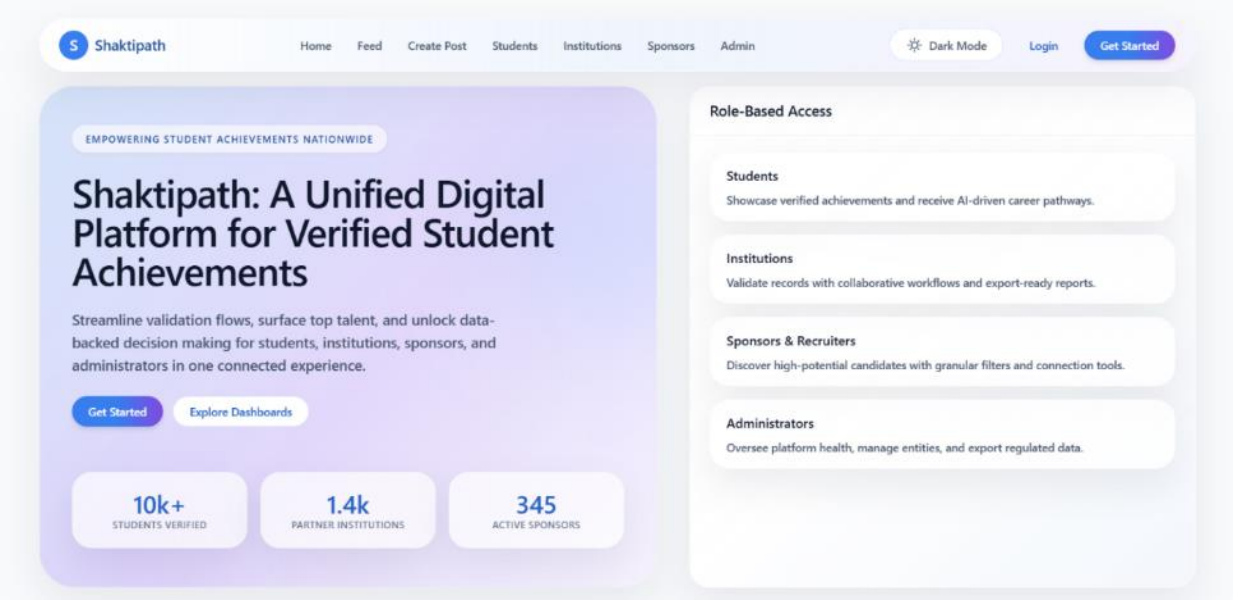

Fig 2: Shaktipath - Landing Page

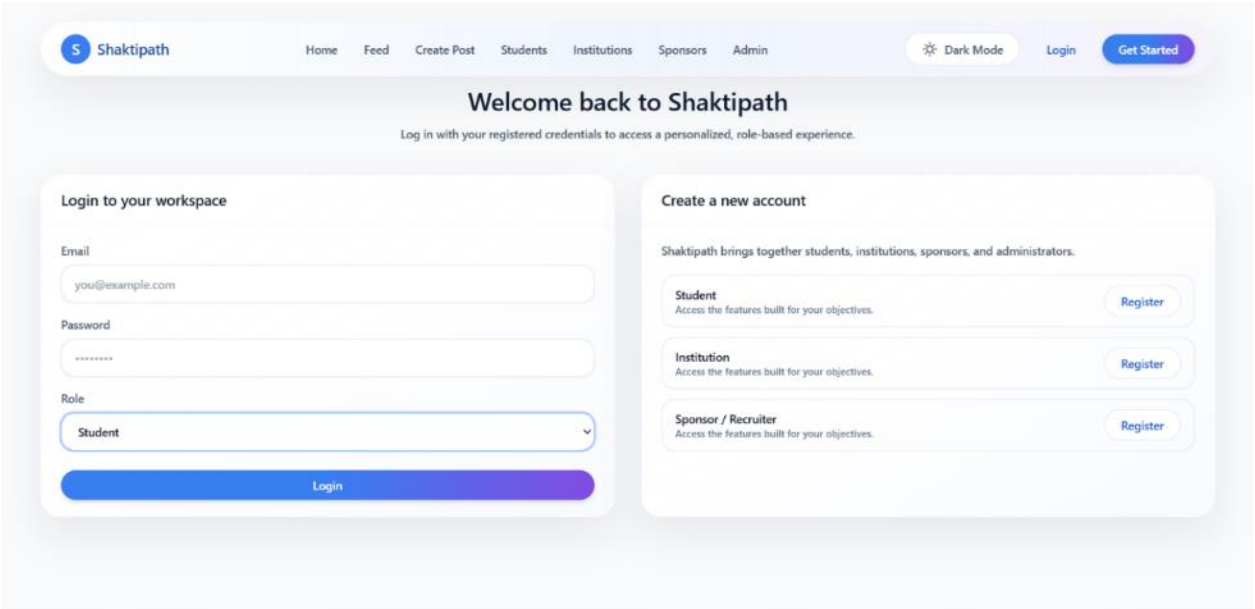

Fig 3: Register/Login Page

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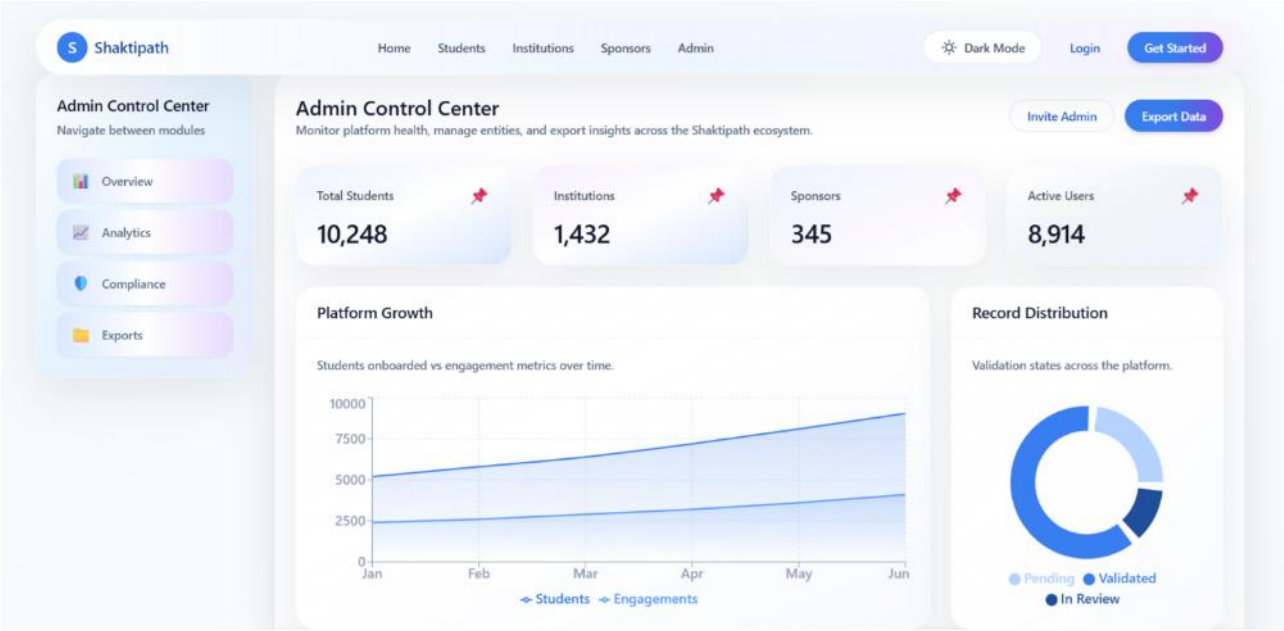

Fig 4: Admin Control Center

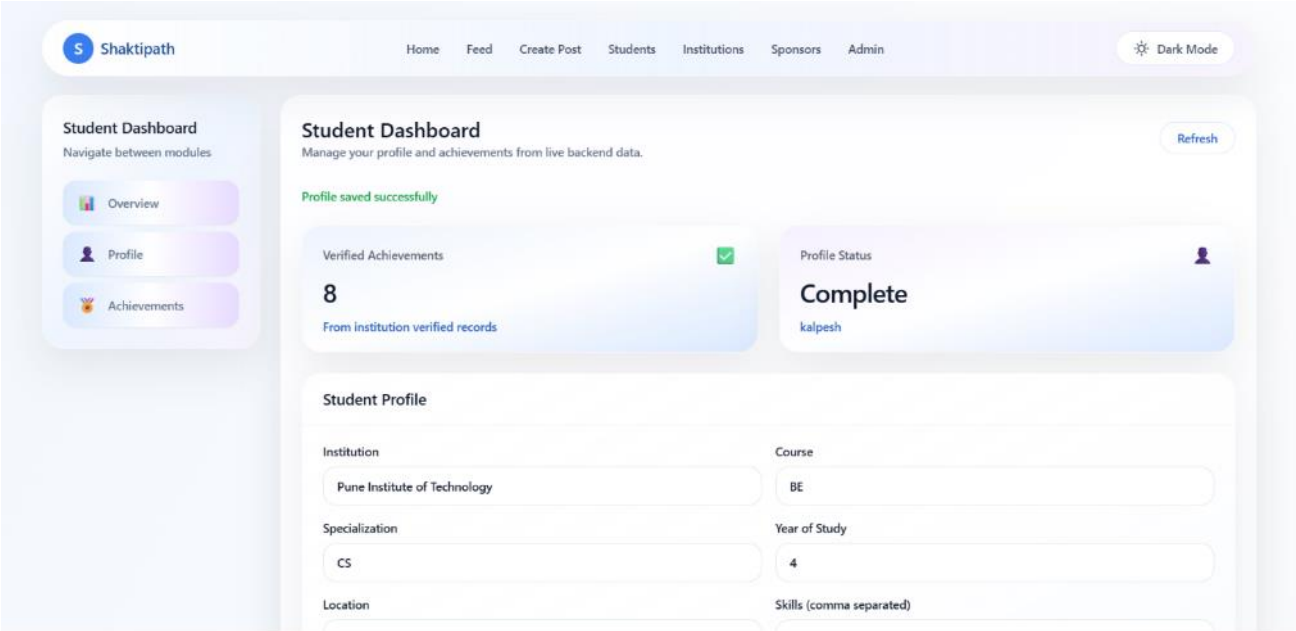

Fig 5: Student Dashboard

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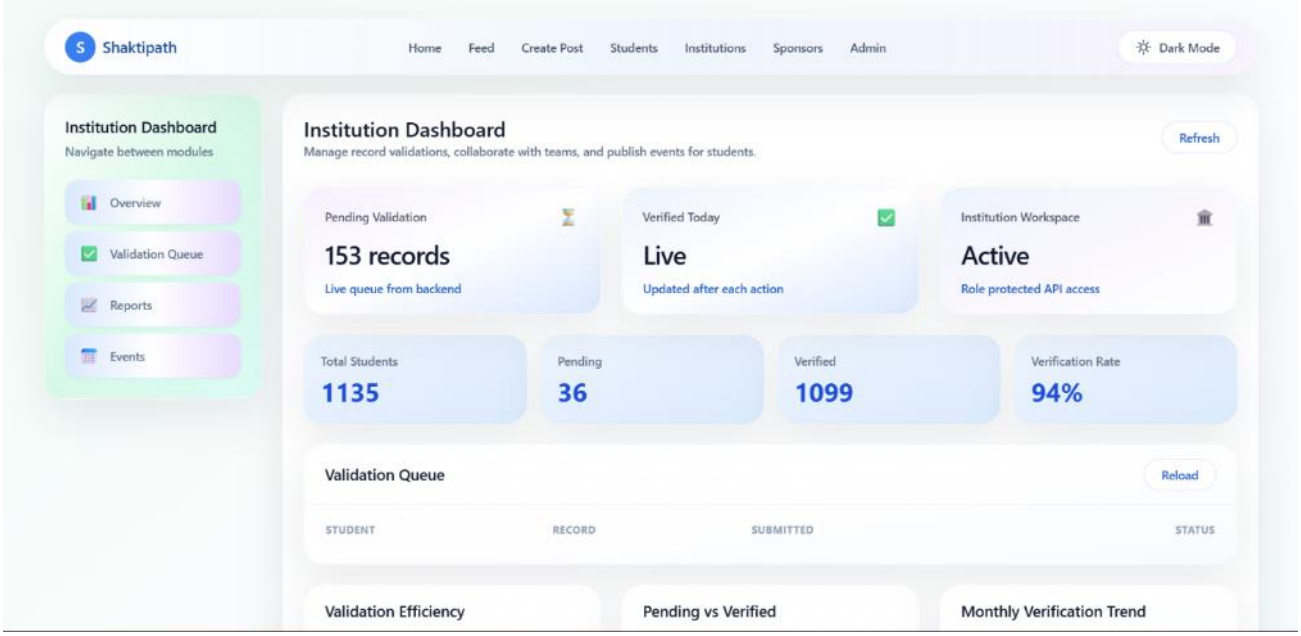

Fig 6: Institution Dashboard

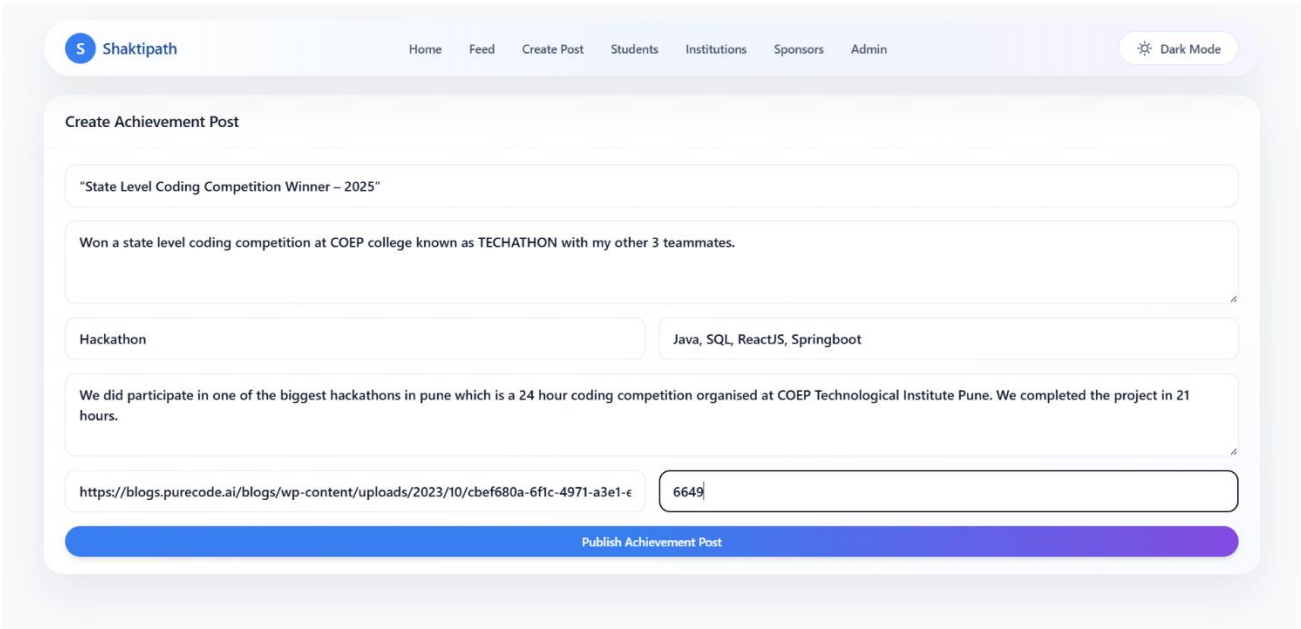

Fig 7: Create New Achievement Post

IX. ADVANTAGES

1. The system provides a centralized platform to store all student achievements in a single digital profile.
2. All records are institutionally verified, ensuring authenticity and reliability of data.
3. The platform is accessible nationwide, providing equal opportunities to all students.
4. It integrates multiple stakeholders including students, institutions, sponsors, and recruiters.
5. AI-based analytics help in providing personalized career guidance and recommendations.
6. Institutional validation improves transparency and reduces chances of fake data.
7. Microservices architecture ensures scalability for large-scale deployment.

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8. Secure authentication mechanisms like JWT and OAuth2 protect user data.
9. Real-time data processing improves system responsiveness and efficiency.
10. Analytical insights support decision-making for institutions and government bodies.
11. Automation reduces manual work and administrative burden.
12. Recruiters and sponsors can easily identify genuine and verified talent.
13. User-friendly interface ensures smooth and easy interaction with the system.
14. Cloud deployment provides high availability and reliability.
15. Modular design allows easy expansion and future enhancements.

X. CONCLUSION

Shaktipath provides a comprehensive and scalable solution for managing student achievements in a centralized digital platform. By integrating multiple stakeholders and ensuring institutional verification, the system enhances transparency and credibility.

The use of modern technologies such as microservices, AI analytics, and secure authentication mechanisms ensures efficiency and scalability. The platform bridges the gap between education and employment, enabling better opportunities for students.

Overall, the system aligns with modern educational requirements and contributes to the digital transformation of the education sector.

XI. FUTURE WORK

Future enhancements of the system include:

- Integration of machine learning models for predictive analysis
- Use of blockchain technology for secure and tamper-proof verification
- Development of mobile applications for wider accessibility
- Integration with government education systems
- Advanced analytics dashboards for institutions and policymakers
- Real-time notification and alert systems

These improvements will further enhance the functionality and impact of the platform.

REFERENCES

[1] R. S. Pressman, *Software Engineering: A Practitioner's Approach*, 8th ed., McGraw-Hill, 2014.
[2] A. Silberschatz, H. F. Korth, and S. Sudarshan, *Database System Concepts*, 7th ed., McGraw-Hill, 2019.
[3] S. Russell and P. Norvig, *Artificial Intelligence: A Modern Approach*, 3rd ed., Pearson, 2021.
[4] M. Fowler, *Microservices: A Definition of This New Architectural Term*, 2014.
[5] N. Dragoni et al., "Microservices: Yesterday, Today, and Tomorrow," *Present and Ulterior Software Engineering*, Springer, 2017.
[6] J. Lewis and M. Fowler, "Microservices Architecture," *ThoughtWorks*, 2015.
[7] R. Fielding, "Architectural Styles and the Design of Network-based Software Architectures," Ph.D. dissertation, Univ. California, 2000.
[8] V. Subramanian, *Pro Spring Boot 2*, Apress, 2019.
[9] Oracle Corporation, *Oracle Database Concepts*, 2020.
[10] Apache Software Foundation, "Apache Kafka Documentation," https://kafka.apache.org
[11] ReactJS Official Documentation, https://react.dev
[12] Spring Boot Official Documentation, https://spring.io
[13] OWASP Foundation, "OWASP Top 10 Security Risks," 2021.
[14] I. Sommerville, *Software Engineering*, 10th ed., Pearson, 2016.
[15] T. Erl, *Service-Oriented Architecture: Concepts, Technology, and Design*, Prentice Hall, 2005.
[16] M. Newman, *Building Microservices*, O'Reilly Media, 2015.
[17] E. Evans, *Domain-Driven Design*, Addison-Wesley, 2004.
[18] J. Dean and S. Ghemawat, "MapReduce: Simplified Data Processing on Large Clusters," *Communications of the ACM*, 2008.

DOI: 10.17148/IARJSET.2026.134129

[19] Google Cloud, "Cloud Architecture Framework," https://cloud.google.com
[20] Amazon Web Services, "AWS Architecture Best Practices," https://aws.amazon.com
[21] Docker Inc., "Docker Documentation," https://www.docker.com
[22] Kubernetes Documentation, https://kubernetes.io
[23] National Education Policy (NEP) 2020, Government of India.
[24] DigiLocker Official Portal, https://www.digilocker.gov.in
[25] National Academic Depository (NAD), Government of India.
[26] LinkedIn Corporation, "LinkedIn Platform Overview," https://www.linkedin.com
[27] Coursera Inc., "Online Learning Platform Overview," https://www.coursera.org
[28] NPTEL, "National Programme on Technology Enhanced Learning," https://nptel.ac.in
[29] IEEE, "AI-Based Student Performance Prediction Using Machine Learning Models," *IEEE Access*, 2021.
[30] IEEE, "Integration of Academic and Sports Data for Holistic Student Profiling," *IEEE Transactions on Education*, 2022.