



# 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 15, Issue 3, March 2026**

# **Decentralized Loan Funding Platform using Blockchain**

**Dr. D. A. Vidhate<sup>1</sup>, Atharv Ambekar<sup>2</sup>, Kiran Chauhan<sup>3</sup>, Avdhut Adhav<sup>4</sup>, Vishal Chate<sup>5</sup>**

Prof., Department of Information Technology, Dr. Vithalrao Vikhe Patil College of Engineering, Ahilyanagar,  
Savitribai Phule Pune University, Pune, Maharashtra, India<sup>1</sup>

Students, Department of Information Technology, Dr. Vithalrao Vikhe Patil College of Engineering, Ahilyanagar,  
Savitribai Phule Pune University, Pune, Maharashtra, India<sup>2,3,4,5</sup>

**ABSTRACT:** Higher education is becoming increasingly important, but many students in developing countries struggle to continue their studies due to financial limitations. Traditional banks and loan systems involve long procedures, strict rules, and high interest rates, making it difficult for deserving students to get timely help. To solve this problem, this project proposes a blockchain-based crowdsourcing loan platform that connects students, donors, NGOs, and government authorities on a single transparent system. The platform uses Java technology and a custom blockchain to securely record all transactions, maintain donor trust, and ensure that funds reach the right students without any manipulation. Students can apply for educational loans, donors can contribute based on verified profiles, and administrators can approve or monitor funds. A built-in blockchain ledger keeps every transaction immutable, traceable, and tamper-proof, ensuring complete transparency. The project includes modules such as the Student Module, Donor Module, Government/Admin Module, and the Blockchain Module, each designed to handle specific tasks like loan requests, fund contributions, verification, and block generation. By using blockchain and crowdsourcing together, this system reduces intermediaries, lowers processing time, and builds trust among all users. The expected outcome is a reliable, secure, and easy-to-use platform that supports students in achieving higher education while giving donor's confidence that their funds are being used effectively. Overall, the proposed system aims to create a fair and transparent education funding ecosystem that can greatly benefit developing countries.

**KEYWORDS:** - Blockchain Technology, Crowdsourcing, Crowdfunding, Loan Platform, Higher Education Support, Java Application, Donor and Charity Module, Government/Admin Module, Secure and Transparent Transactions, etc.

## **I. INTRODUCTION**

Access to higher education remains a major challenge in many developing countries due to financial limitations. A large number of deserving students are unable to continue their studies because of high tuition fees, lack of educational loans, and limited scholarship opportunities. Traditional loan systems often involve lengthy approval processes, high interest rates, and strict eligibility criteria, which make them unsuitable for economically weaker students.

With the advancement of digital technologies, crowdfunding has emerged as an effective solution to collect small contributions from multiple donors to support meaningful causes. At the same time, blockchain technology offers a secure, transparent, and tamper-proof way to record financial transactions. By combining crowdsourcing with blockchain, it is possible to build a trustworthy education funding platform that removes intermediaries and ensures accountability.

This project proposes a Blockchain-Based Crowdsourcing Loan Platform that helps students receive educational funding from donors, institutions, and government bodies. The system is developed using Java technology with a custom blockchain, ensuring transparency, security, and fair fund distribution.

## **II. PROBLEM STATEMENT**

In many developing countries, students struggle to pay for higher education because of limited access to loans, lack of transparency, and high chances of fraud or misuse of funds. Traditional funding systems are slow, centralized, and often fail to reach the students who need help the most.

There is a need for a secure, transparent, and reliable platform where students can get financial support, and donors, source of funding's, and governments can track their contributions with trust.

To solve this, we propose a blockchain-based crowdsourcing loan platform built in Java, with modules for students, donors, charities, and government/admins, ensuring fair distribution of funds and trustworthy transactions.

## **III. LITERATURE SURVEY**

Higher education plays a major role in improving economic and social conditions, especially in developing countries. However, many students face financial difficulties due to limited access to educational loans, strict banking rules, and lack of government support. Crowdfunding has emerged as an alternate solution where people collectively contribute small amounts to support students. At the same time, blockchain technology provides transparency, security, and trust by maintaining tamper-proof records. Combining these two concepts can create a fair and transparent platform for funding education.

- **Sujartha M et al. (2022)** -- In this paper, Sujartha M and team proposed a decentralized crowdfunding platform built using Ethereum smart contracts. The system removes the need for intermediaries and ensures that all transactions are transparent and secure. Smart contracts automatically handle fund transfers once campaign goals are met, preventing fraud and misuse. This study demonstrated that blockchain can bring trust and accountability to crowdfunding by making the entire process tamper-proof and verifiable.
- **Sarmah M et al. (2022)** – Sarmah and colleagues developed a decentralized crowdfunding model based on the Ethereum blockchain to eliminate the limitations of traditional, centralized crowdfunding platforms. Their system allows fundraisers and donors to directly interact through smart contracts, ensuring transparency and efficiency. The work highlights how decentralization can reduce operational costs, prevent fund manipulation, and provide real-time tracking of contributions. This concept closely relates to educational funding platforms where transparency and trust are essential.
- **Hrga A et al. (2019)** – Hrga and co-authors introduced a decentralized investment and operation platform for energy communities using blockchain technology. The paper focused on enabling individuals to invest in and manage shared energy resources without relying on a central authority. The proposed solution enhanced transparency, ownership traceability, and security in financial transactions. Although focused on energy systems, the underlying blockchain principles can also be applied to educational funding models, where multiple stakeholders contribute towards a shared goal.
- **Sunny F A et al. (2022)** – Sunny and colleagues conducted a detailed review of blockchain applications across various domains such as finance, healthcare, supply chain, and education. The study highlighted blockchain's ability to provide transparency, security, and immutability of records. It also discussed challenges like scalability, energy usage, and integration with existing systems. This paper serves as a strong foundation for understanding how blockchain can be applied to build secure and transparent crowdfunding systems for education.
- **Turkanovic M et al. (2018)** – Turkanovic and his research team developed EduCTX, a blockchain-based platform that securely stores and manages students' academic credits. The system allows universities and students to interact on a decentralized network, making educational data transparent and globally verifiable. This work proves the feasibility of using blockchain in the education sector and inspires the idea of building blockchain-based systems to support students' financial needs, such as education loans and funding.

## **IV. SYSTEM METHODOLOGY**

### **1. User Registration and Authentication**

Students, donors, and admin users register on the platform with valid credentials. Secure login ensures authorized access to the system.

**2. Student Funding Request Submission**

Students submit loan or funding requests with educational and financial details. These requests are stored securely for verification.

**3. Verification by Admin / Government Authority**

The admin verifies student documents and approves or rejects funding requests to ensure authenticity.

**4. Crowdsourced Funding by Donors**

Donors view approved requests and contribute funds. Each contribution is recorded as a blockchain transaction.

**5. Blockchain Transaction Management**

Every funding transaction is added as a new block containing transaction data, timestamp, and hash values.

**6. Fund Disbursement and Tracking**

Once sufficient funds are collected, the amount is released to the student, and donors can track fund usage transparently.

**Advantages of the System**

- Ensures transparency and trust using blockchain
- Eliminates intermediaries and reduces processing delays
- Encourages community participation in education funding
- Provides secure and tamper-proof transaction records
- Supports financial inclusion for deserving students

**V. PROPOSED SYSTEM**

The proposed system is a decentralized crowdsourcing platform designed to fund higher education using blockchain technology. Students can register on the platform and submit funding requests by providing academic details, course information, and financial requirements. Donors and funding agencies can browse verified student profiles and contribute funds based on their interest and trust.

A custom blockchain is implemented to store all transactions securely. Each funding transaction is recorded as a block, making it immutable and traceable. This prevents data manipulation, fraud, and misuse of funds. Since blockchain does not rely on a central authority, the platform promotes transparency and builds confidence among donors and beneficiaries.

The system also includes an admin or government module that verifies student details, approves funding requests, and monitors transactions. This ensures that only genuine students receive support and that funds are used for educational purposes. The entire platform is developed using Java, making it scalable, secure, and suitable for real-world deployment.

Key Features of the Proposed System:

- Secure and transparent funding using blockchain technology
- Direct interaction between students and donors
- Tamper-proof transaction records
- Role-based access for students, donors, and admin
- Reduced dependency on traditional loan institutions.

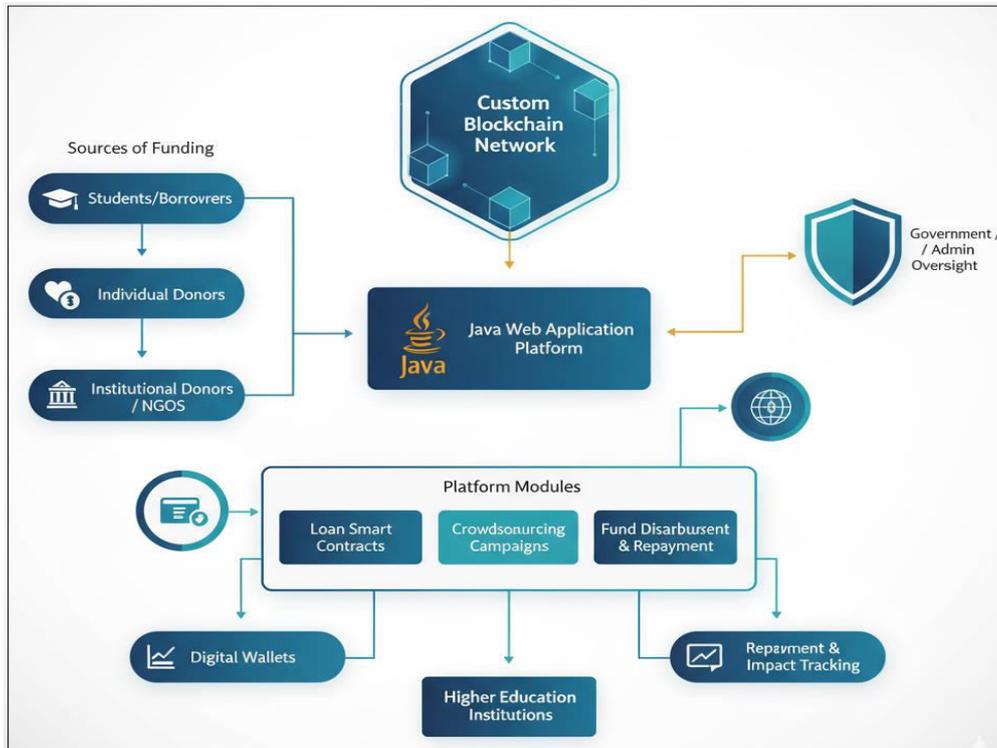


Fig.1: System Architecture Design

System design is an important stage of software development that defines the overall architecture, data flow, and interactions between different components of the system. It provides a clear understanding of how the system works internally and how each module communicates with others to achieve the desired functionality. The design also ensures that the system is efficient, maintainable, and easy to expand in the future.

## VI. CONCLUSION

The proposed blockchain-based crowdsourcing loan platform provides a secure and transparent way to support students in developing countries who need financial help for higher education. By using blockchain, every transaction is recorded safely, cannot be changed, and can be verified by anyone. This creates trust among donors, students, and government authorities.

The platform also makes the loan process faster and more organized by connecting students directly with donors and funding sources. Using Java technology and a custom blockchain structure, the system ensures reliable performance and smooth handling of user requests. Overall, the project successfully demonstrates how blockchain can improve fairness, security, and accessibility in the education-funding system.

## VII. ACKNOWLEDGEMENT

We would like to sincerely thank the researchers and publishers for making their valuable resources available. We are also grateful to our guide for their constant support and guidance, and to the reviewers for their insightful suggestions. Finally, we all thank to the college authorities for providing the necessary infrastructure and support throughout the course of this project.

**REFERENCES**

- [1] Sujaritha M, Shunmugapriya S, Arun Bharath S, Hariharan S, Inderajith K, "Decentralized Crowdfunding Platform using Smart Contracts," 2022 IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems (SPICES), THIRUVANANTHAPURAM, India, 2022, pp. 302-307, doi: 10.1109/SPICES52834.2022.9774132.
- [2] M. Sarmah, S. Saxena and S. Mukherjee, "A Decentralized Crowdfunding Solution on top of the Ethereum Blockchain," 2022 IEEE Silchar Subsection Conference (SILCON), Silchar, India, 2022, pp. 1-6, doi: 10.1109/SILCON55242.2022.10028843.
- [3] A. Hrga, M. Gržanić, N. Zhang and T. Capuder, "Decentralized Platform for Investments and Operation of Energy Communities," 2019 IEEE Sustainable Power and Energy Conference (iSPEC), Beijing, China, 2019, pp. 1926-1931, doi: 10.1109/iSPEC48194.2019.8975165.
- [4] F. A. Sunny, P. Hajek, M. Munk, M. Z. Abedin, M. S. Satu, M. I. A. Efat, and M. J. Islam, "A systematic review of blockchain applications," IEEE Access, vol. 10, pp. 59155–59177, 2022.
- [5] M. Turkanovic, M. Holbl, K. Kopic, M. Hericko, and A. Kamisalic, "EduCTX: A blockchain-based higher education credit platform," IEEE Access, vol. 6, pp. 5112–5127, 2018.
- [6] H. Li and D. Han, "EduRSS: A blockchain-based educational records secure storage and sharing scheme," IEEE Access, vol. 7, pp. 179273–179289, 2019.
- [7] M. Crosby, P. Pattanayak, S. Verma, and V. Kalyanaraman, "Blockchain Technology: Beyond Bitcoin," Applied Innovation Review, no. 2, pp. 6–19, 2016.
- [8] A. Al-Fuqaha, M. Guizani, M. Mohammadi, M. Aledhari, and M. Ayyash, "Internet of Things: A Survey on Enabling Technologies, Protocols, and Applications," IEEE Communications Surveys & Tutorials, vol. 17, no. 4, pp. 2347–2376, 2015.
- [9] S. Kshetri, "Can Blockchain Strengthen the Internet of Things?" IEEE Computer, vol. 50, no. 9, pp. 68–72, Sept. 2017.
- [10] P. Tasca and C. J. Tessone, "A Taxonomy of Blockchain Technologies: Principles of Identification and Classification," Ledger, vol. 4, pp. 1–39, 2019.



INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  [ijirset@gmail.com](mailto:ijirset@gmail.com)



[www.ijirset.com](http://www.ijirset.com)

Scan to save the contact details