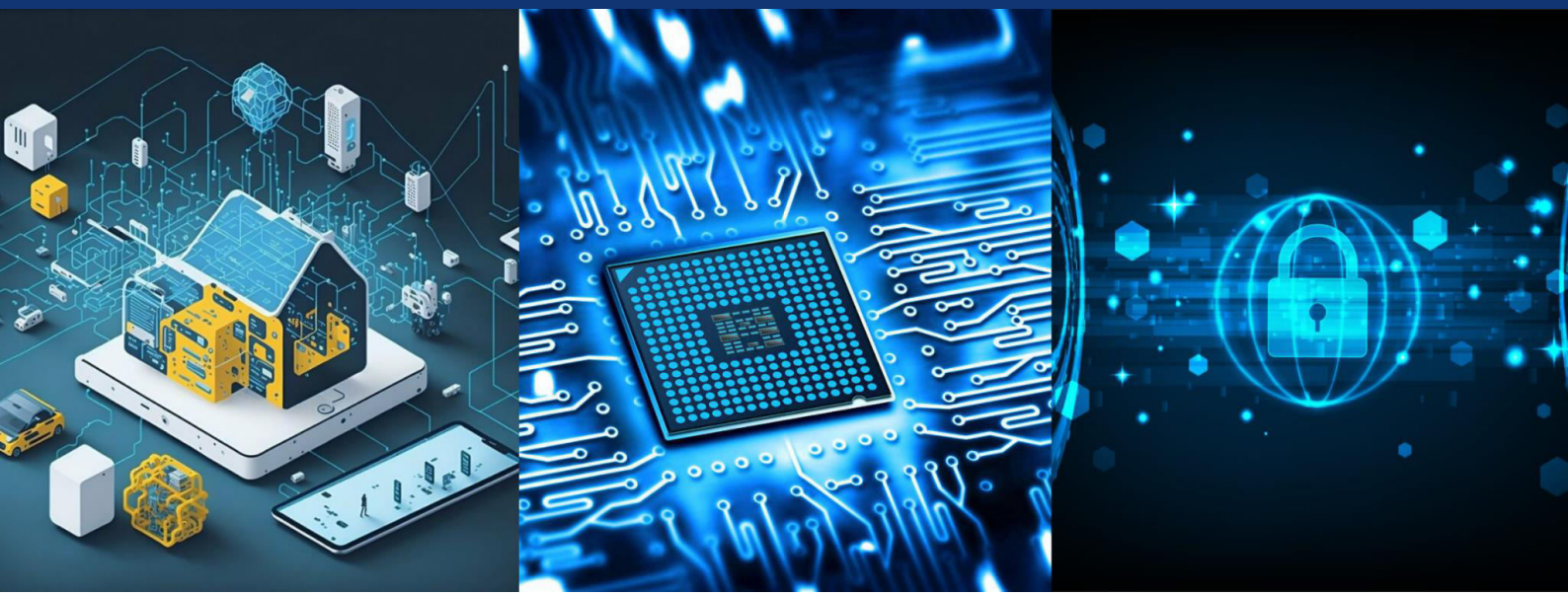
ISSN(O): 2320-9801
ISSN(P): 2320-9798



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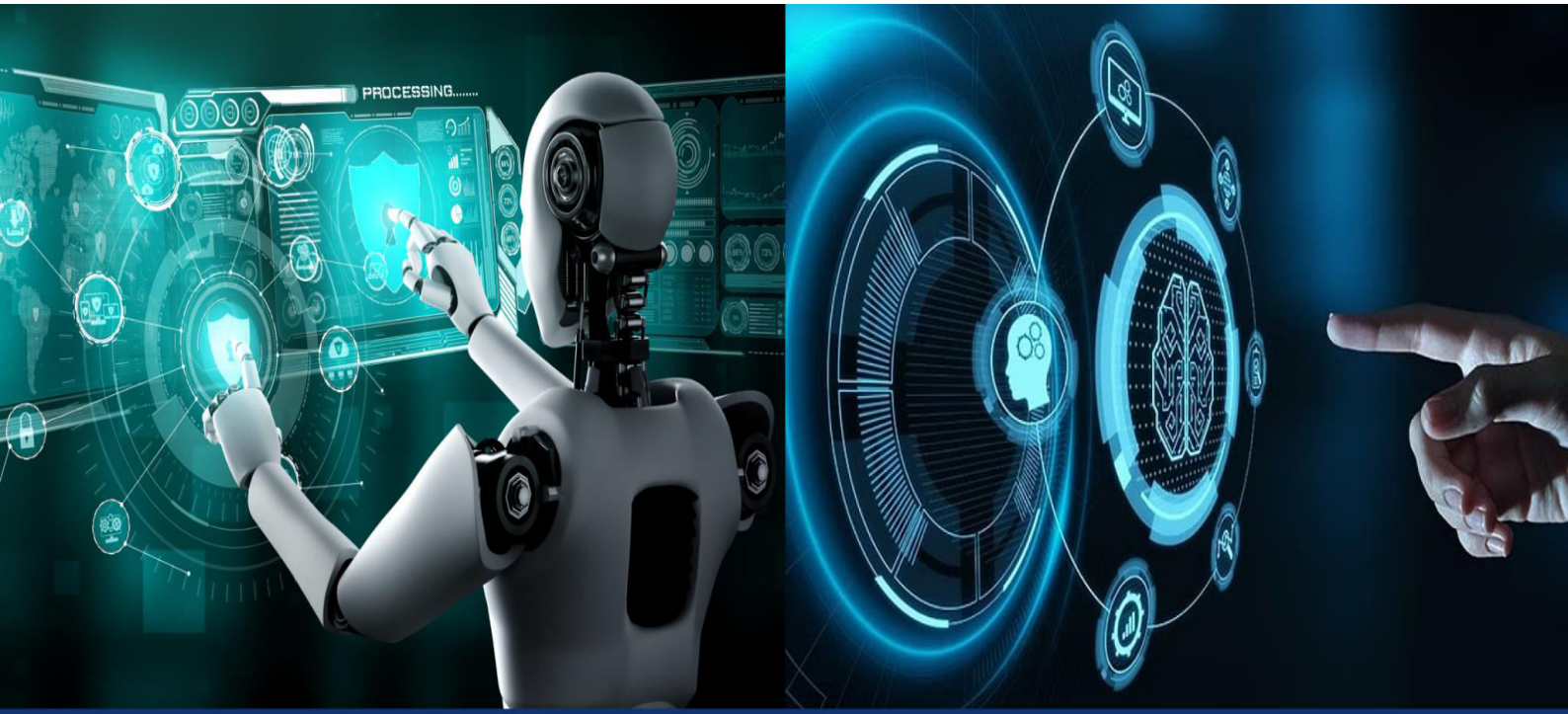

Impact Factor: 8.771 **Volume 14, Issue 4, April 2026**

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www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)

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BetterFund: A Crowdfunding Platform Powered by Blockchain

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ABSTRACT: BetterFund is a blockchain-powered crowdfunding platform that addresses the limitations of both traditional and existing blockchain-based funding systems. It is built using Ethereum smart contracts written in Solidity, combined with a user-friendly frontend developed in React/Next.js and styled with Chakra UI, making it accessible to users with varying levels of technical expertise. Currently, the platform operates on the Rinkeby test network to minimize transaction costs during development and testing, but it is fully scalable to more cost-efficient blockchain networks for production deployment. A standout feature of BetterFund is its democratic withdrawal approval system, where only contributors who meet a specific contribution threshold can vote on fund withdrawals. Funds are released only when more than 50% of voters approve, reducing the risk of fund misuse. Every contribution, vote, and transaction is permanently recorded on the blockchain, ensuring security, transparency, and accountability, while enabling global participation for charitable, creative, and entrepreneurial projects.

KEYWORDS: Blockchain crowdfunding; Ethereum smart contracts; Solidity; React; Next.js; Chakra UI; decentralized voting; transparency; security; scalability

I. INTRODUCTION

BetterFund is a blockchain-based crowdfunding platform designed to ensure transparency, security, and trust in fundraising. It leverages blockchain technology and smart contracts to record all transactions immutably and manage funds efficiently. Users can contribute to campaigns and track how their money is utilized in real time, creating a reliable and trustworthy ecosystem.

1.1Problem Definition

Traditional crowdfunding platforms often lack transparency and accountability, making it difficult for donors to verify how their contributions are used. This can lead to fraud, misuse of funds, and reduced trust among users. Additionally, centralized systems are vulnerable to data manipulation and security breaches, highlighting the need for a more secure and transparent solution.

1.2 Existing Applications

Popular platforms like GoFundMe and Kickstarter provide easy access to fundraising but operate on centralized models. They offer limited visibility into fund usage and rely heavily on user trust, which can sometimes result in fraudulent or misleading campaigns.

1.3 Proposed Application

BetterFund addresses these challenges by using blockchain technology to create a decentralized and transparent crowdfunding system. Smart contracts ensure that funds are released only when predefined conditions are met, reducing the risk of misuse. The platform allows real-time tracking of transactions, enhances security, and builds trust between donors and fundraisers, making it suitable for individuals, students, and organizations.

II. LITERATURE SURVEY

The adoption of blockchain technology in crowdfunding has gained significant attention due to its ability to enhance transparency, trust, and decentralization in financial systems. Li et al. [1] proposed a blockchain-based decentralized

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crowdfunding platform that eliminates intermediaries and ensures secure transactions through distributed ledger mechanisms. Similarly, Al-Jarrah and Al-Shayea [2] introduced a conceptual framework aimed at supporting small and medium-sized enterprises (SMEs), highlighting how blockchain can reduce fraud and improve investor confidence. Arru et al. [3] explored the integration of smart contracts and decentralized autonomous organizations (DAOs) in crowdfunding, enabling automated fund management and governance without centralized control.

Chen and Lee [4] emphasized the role of blockchain combined with IPFS in improving security and trust in decentralized crowdfunding systems, ensuring data integrity and transparency. Perera et al. [5] focused on fraud mitigation using immutable blockchain records, demonstrating how tamper-proof ledgers can prevent malicious activities. Sun et al. [6] designed and implemented a reward-based crowdfunding system leveraging blockchain technology, showcasing improved efficiency and reduced operational costs. Furthermore, Khan and Gani [7] discussed tokenization as a key advancement in equity crowdfunding, enabling fractional ownership and broader investor participation. Wang and Zhang [8] analyzed the adoption of Initial Coin Offerings (ICOs) as a novel crowdfunding mechanism, highlighting both opportunities and regulatory challenges associated with blockchain-based fundraising models.

III. DESIGN AND METHODOLOGY

3.1 Process flow Diagram:

The BetterFund system begins when a creator creates and submits a campaign, which is then verified and published. Contributors can discover and fund the campaign, with funds securely stored in a smart contract. The creator submits proposals for fund usage, which are reviewed and voted on by the community. If approved, the smart contract releases the funds; otherwise, they remain locked until revised. All transactions are recorded on the blockchain, ensuring transparency and trust.

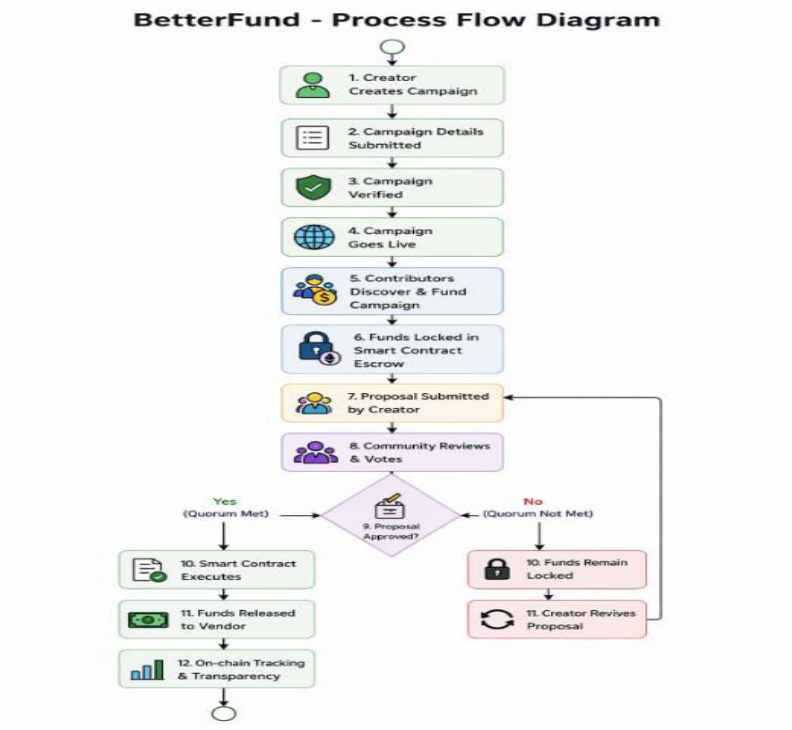

Figure :1 Process flow diagram of BetterFund System

Figure 3.1 above illustrates the layered architecture of the BetterFund system and the flow of data across these functional components.

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3.2 Class Diagram:

The BetterFund system is structured around four main classes: **Campaign**, **CampaignFactory**, **Requests**, and **ConnectWallet**. The Campaign class serves as the core component, managing campaign details such as the manager's address, minimum contribution, description, target amount, and list of contributors, along with tracking approvals. The CampaignFactory class is responsible for creating and maintaining multiple campaigns by storing deployed campaign addresses and providing a method to create new ones. Each Campaign can generate multiple Requests, which represent fund usage proposals containing information like description, value, recipient, and approval status, and these requests must be approved by contributors before funds are released. The ConnectWallet class enables user interaction with the system by handling wallet connection, disconnection, and account status. Overall, the relationships ensure that one factory manages many campaigns, each campaign handles multiple requests, and users securely interact through wallet integration, providing a modular and transparent crowdfunding system.

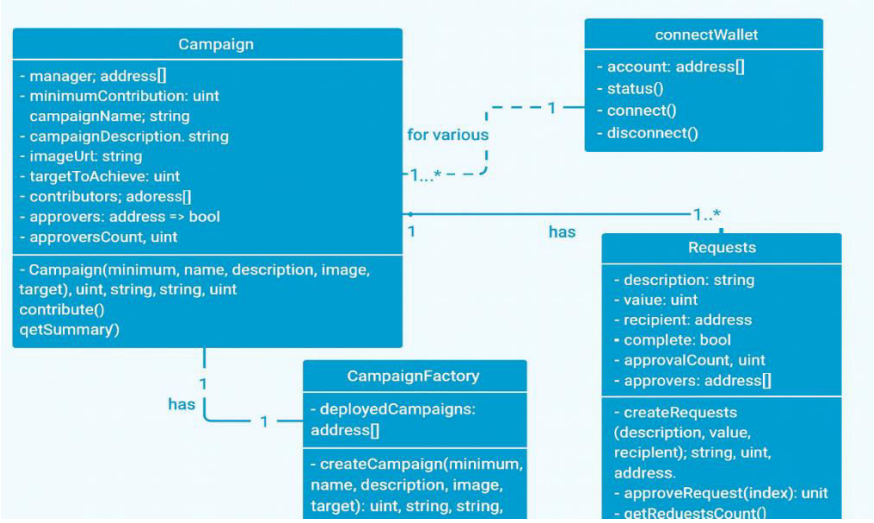

Figure 2: Class Diagram of BetterFund System

IV. IMPLEMENTATION

4.1 User Interface:

BetterFund is a simple web platform that lets users create campaigns, contribute funds, and tracktransactions securely using blockchain, ensuring transparency and trust.

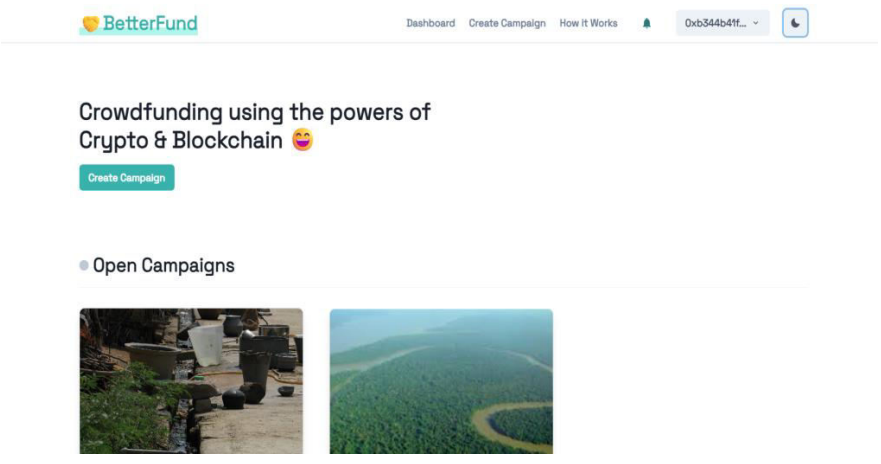

Figure:3User Interface of BetterFund system

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4.2Campaign creation page with input form fields:

The screen allows users to create a new campaign by entering details such as contribution amount, campaign name, description, image and target amount.

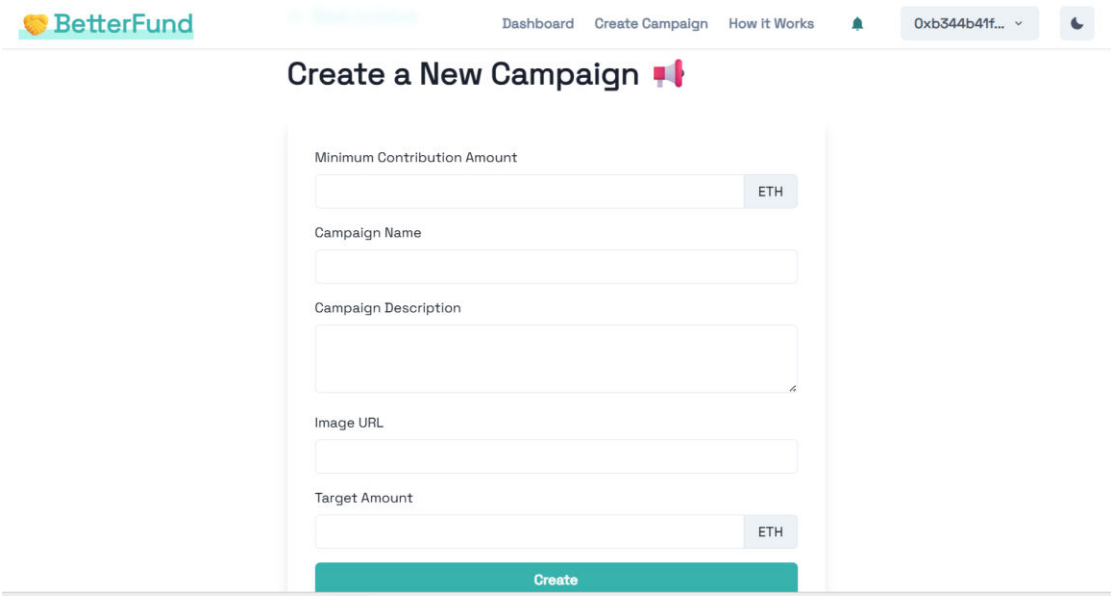

Figure 4:Campaign creation page with input form fields

4.3Campaign details page:

The screen shows detailed campaign information including balance, target amount, creator details, and allows users to contribute and view withdrawal requests.

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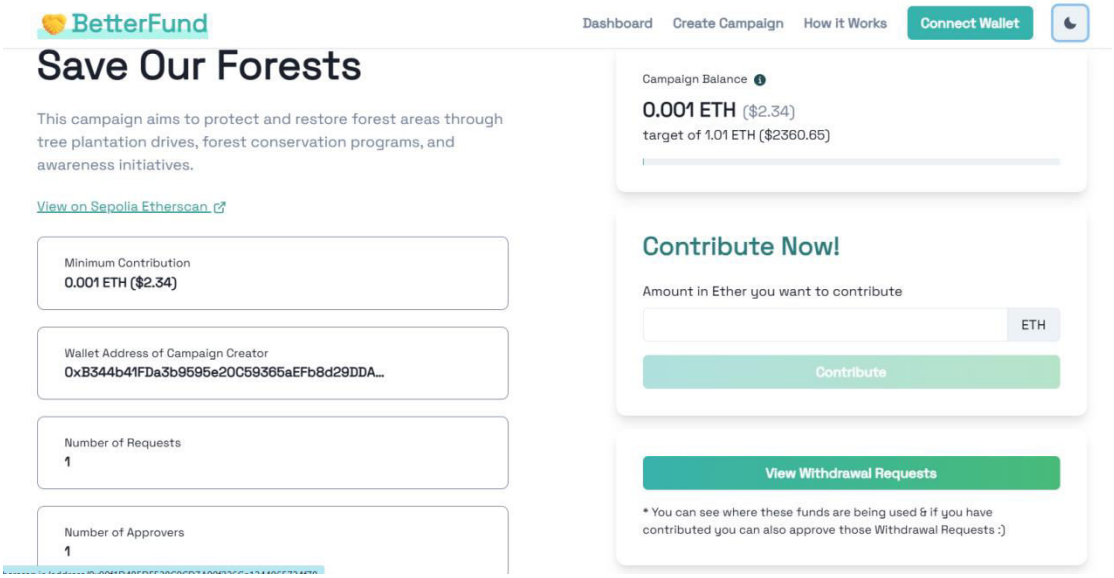

Figure 5: Campaign details page displaying contribution and campaign information

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VII. CONCLUSION AND FUTURE SCOPE

The BetterFund system provides a modern and secure approach to crowdfunding by integrating blockchain technology and smart contracts. It enables users to create campaigns, contribute funds, and track transactions in a transparent and tamper-proof manner. The system ensures that funds are managed automatically based on predefined conditions, reducing the risk of fraud and misuse.

By eliminating the need for intermediaries, BetterFund reduces costs and increases efficiency while improving trust among users. Contributors can monitor campaign progress and fund usage in real time, ensuring accountability. All transactions are securely stored on the blockchain, making them verifiable and reliable.

Overall, BetterFund enhances the effectiveness of crowdfunding platforms by combining transparency, security, and automation. It can be widely used for startups, social causes, and fundraising activities. Future improvements may include advanced governance features, better scalability, and integration with more blockchain networks.

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