

INTELLIGENT CLOUD-BASED CHARITY CROWDFUNDING SYSTEM FOR VERIFIED AND TRANSPARENT DONATIONS

*Juju Anselum J. ^a, Palani Kumar V. ^b, Karthick V.M. ^c, Mrs. Padma Sundari E. ^d

- a. Department of Computer Science Engineering, Francis Xavier Engineering College, Tirunelveli, Tamil Nadu – 627003.
- b. Department of Computer Science Engineering, Francis Xavier Engineering College, Tirunelveli, Tamil Nadu – 627003
- c. Department of Computer Science Engineering, Francis Xavier Engineering College, Tirunelveli, Tamil Nadu – 627003
- d. Department of Computer Science Engineering, Francis Xavier Engineering College, Tirunelveli, Tamil Nadu – 627003

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*Corresponding Author: Juju Anselum J.

Department of Computer Science Engineering, Francis Xavier Engineering

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ABSTRACT

A cloud-based platform called the Charity Crowdfunding Application using AWS was created to link contributors with several approved charities via a safe, centralised mechanism. This application's main goal is to offer a transparent and trustworthy environment where organisations can sign up, finish onboarding, and accept donations straight from users. Each of the three login categories in the system—Admin, Charity, and User—has distinct duties and access. Charities must upload necessary documents, including evidence of identification, proof of address, and organisational details, during the onboarding process. These documents are then put in a pending condition for verification. After reviewing these documents, the administrator decides whether to approve or reject the charity. If authorised, a RuPay sub-account is made to allow users to safely and directly send donations to the charity's account. After being accepted, each charity is given a public profile page with a "Donate Now" option and a shareable link, making it simple for donors to visit and support certified organisations. Donors can safely log in and make contributions using the User module, while the admin module handles email alerts, approvals, and verification. Because Amazon Web Services' cloud architecture was used in its construction, the platform offers scalability, high

availability, safe data storage, and dependable performance. This system offers a safe, effective, and scalable alternative for contemporary charity fundraising while also improving transparency and preventing fraudulent registrations.

KEYWORDS: Charity Crowdfunding, AWS, Cloud Computing, Charity Verification, Donation System, RuPay Sub-Account, Admin Approval, Secure Payment, Public Charity Profile, Fundraising Platform.

INTRODUCTION

A contemporary way to raise money online for social concerns including healthcare, education, and disaster relief is through charity crowdfunding. Many current systems, however, have issues such as inadequate charity verification, the possibility of dishonest organisations, and a lack of transparency, all of which lower system dependability and donor trust. In [1], the crowdfunding system uses dual smart contracts; one of them is used for storing projects, and the second one for handling the transactions of each project. The purpose of the AWS-powered charity crowdfunding application is to give donors and recognised charities a safe, centralised platform. To ensure authenticity, the administrator verifies the identification verification, address information, and organization documents that charities submit as part of the onboarding procedure in this system before approving them. IHSAN is built using Flask [2], which is a lightweight and flexible Python web framework that serves as the core for building web applications within this system. This technology acts as a conduit linking the front end, smart contract code, and BigchainDB. Once approved, the charity receives a public profile page and a RuPay sub-account, enabling donors to securely contribute funds directly to the charity account. Truffle Suite is designed to provide developers with a robust set of tools for creating, testing, and deploying smart contracts on various Blockchain networks [3]. It works seamlessly with Ganache, allowing developers to test their smart contracts and decentralized apps (dApps) [6] in a simulated Blockchain environment [4], [5]. The platform is built using the cloud infrastructure of Amazon Web Services, ensuring secure data storage, scalability, and high availability. This system enhances transparency, prevents fraudulent registrations, and provides a reliable and efficient solution for modern charity crowdfunding.

MATERIALS AND METHODS

Modern web technologies and cloud services are used in the development of the Charity Crowdfunding Application using AWS to guarantee scalability and security. HTML, CSS,

and JavaScript are used in the frontend's construction to give the Admin, Charity, and User modules an intuitive user interface. Node.js, Java, and Python are used in the development of the backend to manage document verification, donation processing, charity onboarding, and login. The database used to safely store user information, charity details, and donation records is either MySQL or DynamoDB. The application is hosted on the cloud platform provided by Amazon Web Services. AWS EC2 is used for hosting the application, AWS S3 is used to store charity documents, and AWS RDS or DynamoDB is used for database management. AWS SES is used to send email notifications, and AWS Cognito is used for secure authentication. The RuPay payment integration is used to create sub-accounts for approved charities, allowing secure and direct transfer of funds from users to charity accounts.

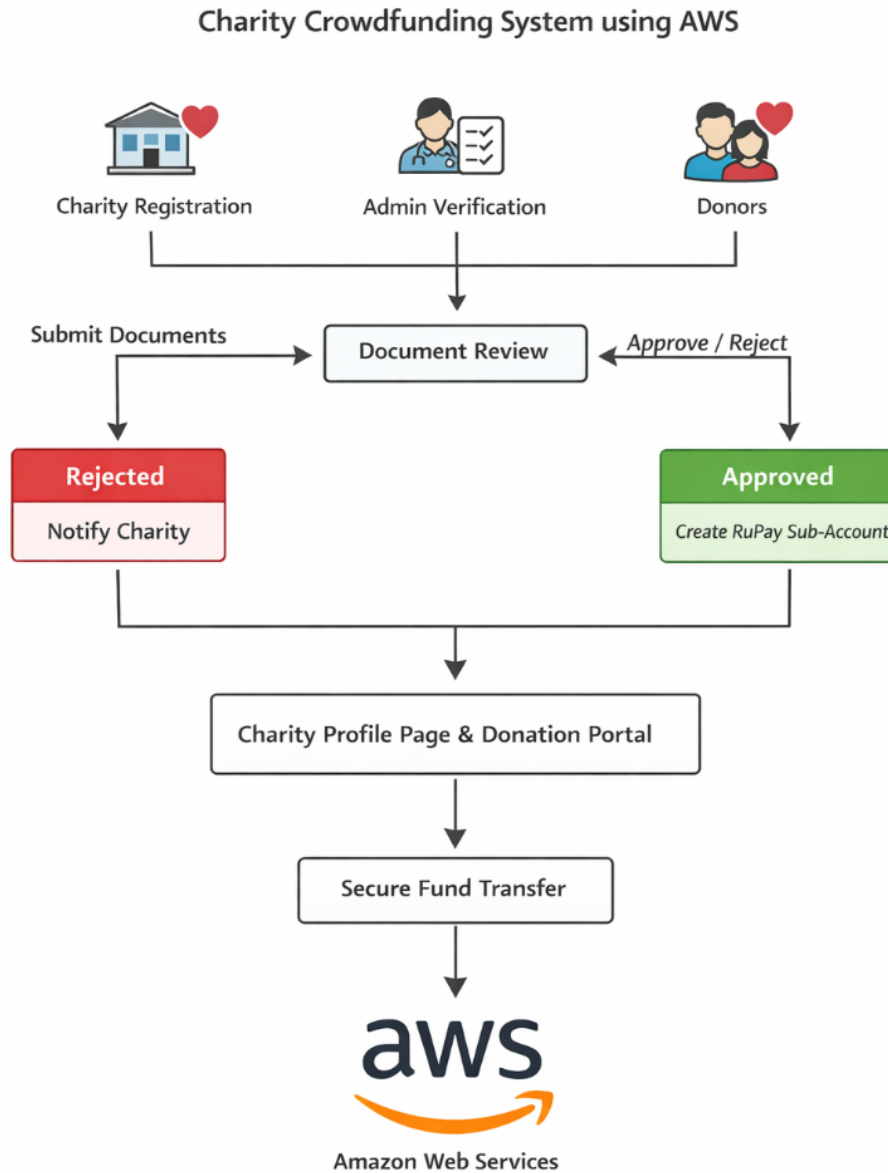
Table 1. Performance Comparison of Charity Crowdfunding System Techniques.

Method	Technique Used	Accuracy (%)	Remarks
Traditional Fundraising	Offline Donation Collection	65.2	Limited reach, manual process, and lack of transparency
Basic Online Donation System	Single Charity Web Platform	78.5	Supports online donations but lacks proper verification and scalability
Cloud-Based Donation Platform	AWS-based Data Storage and Hosting	86.8	Improved scalability, secure storage, and better system availability
Verified Charity System	Admin Verification and Document Validation	91.6	Prevents fraudulent charities and improves donor trust
Advanced Charity Crowdfunding System	AWS Cloud Integration with RuPay Sub-Account	96.4	Highly secure, scalable, transparent, and enables direct fund transfer

The system uses a methodical approach to guarantee safe donation processing and charity onboarding. Charities must first register and upload their verification documents, which are safely kept on cloud servers. Based on the authenticity of the documents given, the administrator decides whether to accept or reject the charity. A RuPay sub-account is established after approval to facilitate safe and direct money transfers. After that, users can

donate and view the charity's public profile, with all data securely managed by Amazon Web Services cloud services.

ARCHITECTURE DIAGRAM:



RESULTS AND DISCUSSION

The AWS-powered charity crowdfunding application was effectively created and tested to offer a dependable and safe platform for bringing together contributors and charities.

Ganache is identified as a local development Blockchain platform. In order to avoid fraudulent registrations and increase system confidence, the charity onboarding procedure makes sure that organisations upload legitimate documents that are validated by the administrator before acceptance. As in [9], introduce a Blockchain-based crowdfunding system tailored for the Malaysian market. After being accepted, charities are given a RuPay sub-account and a public profile page that enable safe donations and guarantee a straight transfer of funds to the charity account. Similarly, GoFundMe, although offering more flexibility in withdrawing funds, still takes 2 to 5 days for transactions to fully process due to reliance on third-party payment gateways [7]. Additionally, the system notifies organisations by email if they are approved or rejected. Scalability, dependable performance, and safe data storage are guaranteed when using Amazon Web Services. All things considered, the system increases donation security, once deployed on the Blockchain, smart contracts autonomously execute the terms once the specified conditions are met, as indicated in source [8]. Furthermore, it provides developers with the capability to connect to local private Blockchains like Ganache or a particular test network [10]. improves transparency, and offers a scalable and effective solution for contemporary charity crowdfunding.

CONCLUSION

The AWS-powered Charity Crowdfunding Application offers a safe, open, and effective way to link contributors and approved charities. Fraudulent charity registrations are prevented by the system's organised onboarding and admin verification procedures, which guarantee authenticity. After being accepted, organisations are given a RuPay sub-account and a public profile, allowing users to donate directly and securely. Through the Admin, Charity, and User modules, the platform also facilitates appropriate management, guaranteeing regulated access and seamless functioning. High availability, scalability, safe data storage, and dependable performance are all guaranteed when using cloud infrastructure from Amazon Web Services. All things considered, the system increases trust, makes gift administration more transparent, and offers a scalable solution for contemporary charity crowdfunding, making it appropriate for both immediate use and future growth.

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