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CSR Fund Allocation for NGO-Corporate Matching

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Abstract: *This paper will present a landscape where corporations are increasingly expected to go beyond mere profitability and embrace social, environmental and stakeholder-centred responsibilities, this project presents the design and implementation of a CSR Management System. The system integrates modules for activity planning, fund allocation, monitoring of deliverables, and impact assessment in a unified workflow, thereby enhancing transparency, accountability and strategic alignment of CSR initiatives. Leveraging web-based architecture and a centralised data store, the system enables organisations to log proposals, route approvals, track progress in real time and generate analytics for decision-making. Pilot implementation demonstrates how the system bridges gaps in programme execution, stakeholder engagement and regulatory compliance, ultimately fostering more effective and measurable CSR outcomes. The proposed approach contributes to both academic and practical discourses on how technology can underpin structured CSR governance and deliver value across social, environmental and economic dimensions.*

Keywords: Corporate Social Responsibility, CSR Management System, Workflow Automation, Impact Analytics, Transparency, Sustainable Development

I. INTRODUCTION

Corporate Social Responsibility (CSR) has become a vital component of business strategy, demonstrating an organization's commitment to ethical conduct, community well-being, and environmental protection. In today's competitive and socially aware environment, companies are expected to extend their responsibilities beyond profit generation and actively participate in sustainable development. Despite this growing awareness, many organizations still struggle with managing CSR programs effectively due to manual tracking, limited transparency, and inadequate impact evaluation methods.

To overcome these limitations, this study introduces a CSR Management System that digitalizes and automates all major CSR operations — including project proposal submission, approval workflows, fund disbursement, progress monitoring, and report generation. The system utilizes a centralized web-based platform to connect all stakeholders, ensuring smooth coordination, accountability, and regulatory compliance.

Additionally, built-in data analytics tools assist organizations in measuring outcomes and improving the strategic value of their CSR activities. By implementing this system, enterprises can enhance efficiency, foster social engagement, and contribute more effectively toward national and global sustainability goals.

By incorporating analytics, the system facilitates data-driven decision-making and impact assessment, allowing organizations to evaluate how effectively their contributions align with Sustainable Development Goals (SDGs). Ultimately, the system empowers companies to strengthen their brand reputation, enhance trust among stakeholders, and build a sustainable ecosystem that benefits both businesses and society.

II. LITERATURE SURVEY

The literature survey conducted for this study is summarized in a tabular format, providing a comprehensive overview of relevant research works. The table encompasses crucial details such as the name of the study, author(s), publication year, research objectives, and key advantages and disadvantages identified in each work.

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Paper Title	Year	Authors	Description
Forging Effective Corporate/Nonpro fit Partnerships for CSR Programs [1]	2019	Kumar & Rao	"Forging Effective Corporate/Nonprofit Partnerships for CSR Programs" explores how collaboration between corporations and nonprofit organizations can enhance the effectiveness, sustainability, and social impact of Corporate Social Responsibility (CSR) initiatives. It emphasizes that while corporations often possess financial resources and strategic planning capabilities, nonprofits bring local expertise, community trust, and on-ground implementation experience. These include mutual trust, clear objectives, capacity building, and continuous monitoring and evaluation.
Corporate Social Responsibility and Employee Donation Matching Programs [2]	2024	Johnson	The research paper "Corporate Social Responsibility and Employee Donation Matching Programs" examines how organizations integrate employee giving into their broader Corporate Social Responsibility (CSR) strategies to strengthen social impact and employee engagement. It focuses on the concept of donation matching, where companies match the charitable contributions made by their employees to eligible nonprofit organizations. This approach not only amplifies the total funds directed toward social causes but also fosters a culture of empathy, shared purpose, and community involvement within the workplace.
CSR2 Life Platform [3]	2020	Indian Institute of Corporate Affairs	This paper investigates the design, adoption, and impact of the CSR2 Life platform — a digital ecosystem aimed at facilitating Corporate Social Responsibility (CSR) initiatives by corporations, NGOs, and implementation agencies. The platform serves as a common interface where corporations can identify eligible community projects, allocate funds, monitor progress, and generate impact reports; meanwhile NGOs and implementation partners can submit project proposals, provide real-time updates, and collect stakeholder feedback. By centralizing the CSR lifecycle, the platform aims to enhance transparency, traceability, and effectiveness of CSR programmes.
CNN Based Aerial Image processing model for Security and Smart Surveillance [4]	2020	Aadesh Guru Bhakt Dandamudi, Gorrepati Vasumithra, Gangisetti Praveen, GirirajaC.V	The research paper "CNN-Based Aerial Image Processing Model for Security and Smart Surveillance" presents a deep learning approach that leverages Convolutional Neural Networks (CNNs) to analyze aerial imagery for enhanced security and surveillance applications. With the rapid increase in the availability of drone and satellite images, the need for automated and intelligent image analysis has become crucial in defense, disaster management, and urban monitoring systems. The proposed model employs CNN architecture to automatically detect, classify, and track objects such as vehicles, humans, and suspicious activities from aerial footage.
Corporate social responsibility and			and Sustainable Development Goals for a Developed India 2047" explores the critical role of Corporate Social

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sustainable development goals for a developed India 2047 [5]	2025	Swapnil Gupta	Responsibility (CSR) in achieving the Sustainable Development Goals (SDGs) envisioned under India's roadmap toward becoming a developed nation by the year 2047. The study emphasizes how CSR initiatives, when strategically aligned with the SDGs, can accelerate progress in key areas such as poverty eradication, quality education, healthcare, environmental sustainability, gender equality, and economic growth.
CSR Initiatives and Practices: Empirical Evidence From Indian Metal and Mining Companies [6]	2021	Ajay K. Singal	The research paper "CSR Initiatives and Practices: Empirical Evidence from Indian Metal and Mining Companies" investigates the scope, implementation, and effectiveness of Corporate Social Responsibility (CSR) initiatives within India's metal and mining sector—an industry often associated with significant environmental and social challenges. The study aims to understand how these companies balance industrial growth with their social and environmental responsibilities, as mandated under the Companies Act, 2013.
Corporate Benevolence and Societal Impact: Evidence from India's CSR Reform [7]	2025	Vidhi Chhaochharia, Rik Sen, Jing Xu	The research paper "Corporate Benevolence and Societal Impact: Evidence from India's CSR Reform" examines how India's landmark Corporate Social Responsibility (CSR) reform, introduced under the Companies Act, 2013, has transformed corporate philanthropy into a structured instrument for social development. The study explores how mandatory CSR provisions have influenced corporate behavior, the nature of social investments, and their measurable impact on communities across India.
An overview on corporate Social Responsibility and Sustainable Development in India [8]	2014	Dr. R. Uma Devi	The research paper "An Overview on Corporate Social Responsibility and Sustainable Development in India" provides a comprehensive analysis of how Corporate Social Responsibility (CSR) practices contribute to the nation's long-term sustainable growth. It examines the evolution, implementation, and impact of CSR policies in India, particularly after the Companies Act, 2013, which made CSR spending mandatory for eligible firms.

III. EXISTING SYSTEM

In the present CSR framework, most organizations still depend on manual and traditional approaches to identify NGOs and allocate funds for social initiatives. The selection process typically involves reviewing reports, referrals, or limited online directories, which often leads to biased and inefficient decision-making. These outdated methods make it difficult to ensure that CSR funds reach the most deserving and impactful organizations.

The absence of an automated or data-driven matching mechanism means that companies struggle to align their CSR objectives with NGOs' project goals and the Sustainable Development Goals (SDGs). Consequently, many CSR activities lack strategic focus and measurable impact. Smaller NGOs, especially those in rural or underrepresented areas, often remain unnoticed due to the limitations of the existing system.

Furthermore, there is no unified digital platform to maintain real-time information on NGO performance, project outcomes, or fund utilization. Reporting is mostly done in static formats, making it difficult to track progress or

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evaluate social returns. This fragmented approach results in unequal fund distribution, redundant projects, and poor accountability.

Overall, the current CSR system suffers from lack of automation, transparency, and scalability, creating an urgent need for an AI-enabled CSR management solution that can automate NGO–corporate matching, ensure fair fund allocation, and enhance the overall social impact.

IV. PROPOSED SYSTEM

The proposed system introduces an AI-based CSR Fund Allocation Platform that intelligently matches corporate CSR goals with NGO project proposals using Sentence-BERT (SBERT), a Natural Language Processing (NLP) model for semantic understanding. The system aims to automate the entire CSR funding process, ensuring transparency, fairness, and alignment with the Sustainable Development Goals (SDGs).

In this system, NGOs upload their project proposals describing objectives, target beneficiaries, and focus areas such as education, healthcare, environment, or rural development. Simultaneously, companies define their CSR goals, funding priorities, and SDG targets. The Sentence-BERT model converts both NGO proposals and CSR objectives into semantic embeddings—numerical representations of meaning. These embeddings are then compared using cosine similarity to identify how closely an NGO's project aligns with a company's CSR goals.

The system automatically ranks all available NGOs for each company based on the similarity score and recommends the most relevant matches for funding consideration. This process eliminates human bias and reduces the time required for manual proposal review. A centralized database stores all CSR and NGO information, enabling real-time data access, monitoring, and report generation.

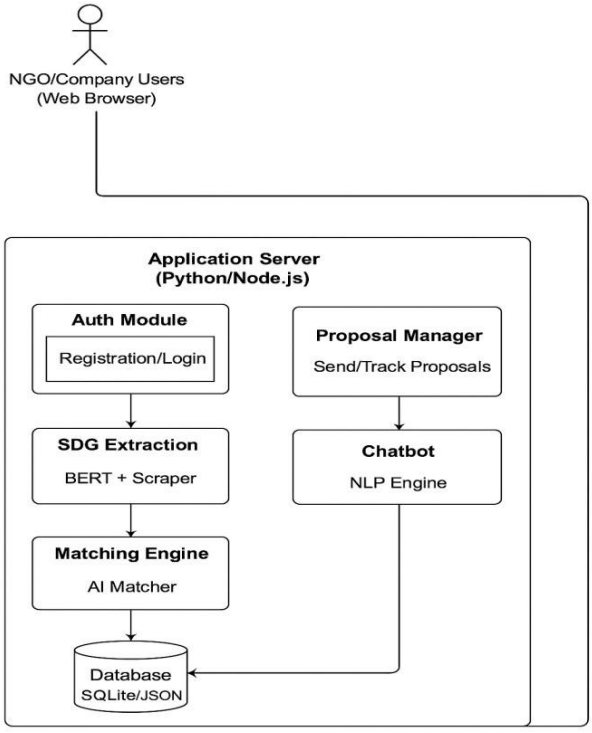

Fig 1. System Architecture

By integrating AI, data analytics, and automation, the proposed model ensures that CSR funds are allocated to the most impactful projects, maximizing social benefits. It also empowers smaller or lesser-known NGOs to gain visibility and access to funding opportunities. Additionally, the platform enhances accountability and transparency, as every match, recommendation, and fund utilization record is stored and traceable for audit and evaluation purposes.

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Overall, the proposed system transforms CSR from a compliance activity into a data-driven, intelligent, and strategic process, contributing directly to India's sustainable development vision and equitable growth.

The proposed system transforms CSR management into a smart, automated, and measurable process. It bridges the gap between corporations and NGOs, ensuring that CSR funds are directed to projects with maximum social relevance and potential.

• Auth Module (Registration/Login):

This module manages the authentication process for both NGOs and company users. It ensures secure access to the system, allowing registered users to log in, manage their profiles, and interact with the CSR platform.

• Proposal Manager:

The Proposal Manager allows NGOs to upload project proposals and enables companies to send or track funding requests. It serves as a communication hub between NGOs and corporates, ensuring all proposals are systematically stored and retrievable for evaluation.

• SDG Extraction Module (BERT + Scraper):

This component uses BERT-based text analysis to automatically identify the relevant Sustainable Development Goals (SDGs) associated with each project or CSR objective. A built-in scraper collects additional contextual data from project documents or online sources to enhance accuracy.

• Matching Engine (AI Matcher):

The Matching Engine is the core intelligence of the system. It uses Sentence-BERT embeddings to compute semantic similarity between NGO proposals and company CSR goals. The AI model ranks the proposals based on relevance and alignment with the company's CSR priorities, providing the top recommendations for fund allocation.

• Chatbot (NLP Engine):

The integrated NLP-based chatbot assists users in navigating the platform, answering queries, and guiding them through proposal submission, CSR goal definition, or tracking updates. This enhances user experience and accessibility, even for non-technical users.

• Database (SQLite/JSON):

The database stores all CSR profiles, NGO details, proposals, similarity scores, and allocation history. It ensures data consistency, quick retrieval, and secure storage for audit and reporting purposes.

V. CONCLUSION

The proposed AI-based CSR Fund Allocation System successfully addresses the limitations of the existing manual and fragmented CSR framework by introducing an intelligent, automated, and transparent platform for NGO– corporate collaboration. By leveraging Sentence-BERT and Natural Language Processing (NLP), the system can understand the semantic meaning of CSR goals and NGO proposals, enabling precise and unbiased fund allocation aligned with the Sustainable Development Goals (SDGs).

The integration of modules such as authentication, proposal management, SDG extraction, AI-based matching, and chatbot assistance ensures a smooth end-to-end workflow—from registration and proposal submission to matching, tracking, and reporting. This enhances efficiency, reduces human intervention, and promotes fairness in CSR fund distribution.

Furthermore, the system empowers smaller NGOs by providing them equal visibility and access to corporate funding opportunities. It also helps organizations maintain accountability through real-time data tracking and impact analysis, ensuring that CSR funds are utilized effectively for genuine social causes.

In conclusion, this project demonstrates how Artificial Intelligence and NLP technologies can revolutionize CSR management by transforming it from a compliance obligation into a strategic, data-driven tool for sustainable development. The proposed system not only improves transparency and scalability but also contributes significantly toward achieving a Developed and Sustainable India by 2047.

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