AI-Powered Smart Donation and Student Support System

Vaibhav Pandit[1], Sahil Salunkhe[2], Atharva Salunke[3], Santosh Shirke[4], Poorna Shankar[5]
[1,2,3,4]*Pursuing B.E in Computer Engineering, Indira College of Engineering and Management, Pune*
[5]*Department of Computer Engineering, Indira College of Engineering and Management, Pune*

Abstract*—Non-Governmental Organizations (NGOs) play a crucial role in supporting education and social development; however, many organizations still rely on manual or semi-digital systems that lead to inefficiencies, lack of transparency, and limited scalability. This paper presents "Donation and Student Support Management System," a web-based platform designed to automate key NGO operations such as donation management, student tracking, and report generation. The proposed system integrates a Resume Analysis module that analyzes student resumes and provides structured insights such as skill identification, domain classification, and improvement suggestions to support career development. The system is developed using web technologies including HTML, CSS, JavaScript for the frontend, PHP for the backend, and MySQL for database management. The implementation demonstrates improved operational efficiency, enhanced transparency in fund management, and better data handling. It also supports students by providing basic resume insights for career improvement. The system is scalable, user-friendly, and suitable for modern NGO operations.

***Index Terms*—NGO Management, Donation Management, Student Support System, Resume Analysis, Web Application**

I. INTRODUCTION

Non-Governmental Organizations (NGOs) play a crucial role in addressing social challenges such as education, poverty alleviation, and community development. However, many NGOs still rely on traditional or semi-digital systems for managing donations, student records, and operational workflows. These methods often lead to inefficiencies, lack of transparency, and difficulty in managing data effectively. Studies show that centralized digital systems can significantly improve donor engagement, operational efficiency, and transparency in NGO activities [1].

Several researchers have proposed web-based donation and NGO management systems to overcome these challenges. For example, Auti et al. developed an advanced NGO management system that automates operations such as donor management, project tracking, and communication, improving overall efficiency [3]. Similarly, Jiang et al. designed a charity donation system with modules like donation management, logistics tracking, and user management to ensure better coordination and transparency [5]. Other studies also highlight that centralized web-based systems reduce manual errors and improve accountability in donation processes [6]

Despite these advancements, most existing systems focus mainly on donation management and lack integration with student support features. Additionally, they do not provide tools to analyse student data for career development and skill improvement. This creates a gap between financial support provided by NGOs and the overall development of students.

To address these limitations, this project presents "Donation and Student Support Management System", a web-based platform that integrates donation management with student tracking and reporting. The system also includes a Resume Analysis module that helps evaluate student profiles and provide insights for career improvement. The proposed system is developed using PHP, MySQL, HTML, CSS, and JavaScript, ensuring a simple, scalable, and efficient solution. It aims to improve transparency, reduce manual effort, and enhance decision-making in NGO operations.

II. LITERATURE REVIEW

Recent advancements in technology have significantly influenced the development of digital systems for organizational management and decision-making. In the context of Non-Governmental Organizations

(NGOs), several studies have emphasized the importance of centralized and automated systems to enhance operational efficiency, donor engagement, and transparency. Auti et al. [3] proposed an advanced NGO management system that integrates functionalities such as donor tracking, project management, and communication systems. Their study highlights that web-based platforms reduce administrative complexity and improve coordination among stakeholders.

Jiang et al. [5] designed and implemented a charity donation system that includes modules such as donation management, user management, and logistics tracking. The system improves transparency by providing better communication between donors and beneficiaries and ensures efficient handling of donation processes.

De Silva et al. [1], [2] developed web-based donation management systems that focus on creating a centralized platform for connecting donors and beneficiaries. Their studies highlight the importance of a secure and reliable system to ensure trust and proper distribution of resources.

Desale et al. [4] proposed an NGO support software solution that improves reachability and volunteer management using digital platforms. Their work emphasizes the need for cost-effective and scalable solutions for NGOs to improve their operations.

Raghuram et al. [6] presented a web-based donation management system that automates donor registration, donation tracking, and report generation. The study shows that such systems reduce manual errors and improve transparency and efficiency in NGO operations.

Borade et al. [7] discussed the use of blockchain technology in NGO and donor management systems to enhance security and transparency in donation processes. However, the implementation complexity and cost may limit its adoption in small-scale NGOs.

Despite these advancements, most existing systems focus mainly on donation management and lack integration with student support features. Additionally, they do not provide tools for analyzing student profiles to support career development. Therefore, there is a need for a system that integrates donation management with student support and basic resume analysis to improve both operational efficiency and student growth.

III. PROBLEM STATEMENT

Non-Governmental Organizations (NGOs) often face challenges in managing donations, student data, and operational activities using traditional or semi-digital systems. These methods involve manual record-keeping, scattered data storage, and lack of proper coordination, which lead to inefficiencies, data inconsistency, and difficulty in tracking donations and beneficiary information [6]

Existing donation management systems mainly focus on handling donor information and fund tracking but do not provide integrated solutions for managing student-related data and support activities. This results in a gap between donation management and student development processes. Additionally, many systems lack proper reporting features, making it difficult for administrators to analyse data and make informed decisions.

Another major issue is the absence of tools to evaluate student profiles and support their career development. NGOs that provide educational support often do not have systems to analyse student resumes or identify skill gaps, which limits their ability to guide students effectively.

Therefore, there is a need for a centralized system that integrates donation management, student tracking, and basic resume analysis into a single platform. Such a system can improve transparency, reduce manual effort, and enhance overall efficiency in NGO operations while also supporting student growth and development.

IV. OBJECTIVES

The objectives of this research are:

1. To develop a centralized NGO management system
2. To automate donation tracking and receipt generation
3. To manage student data and scholarship allocation efficiently
4. To integrate AI-based resume analysis for career guidance
5. To manage student data effectively within a single platform

V. SYSTEM ARCHITECTURE

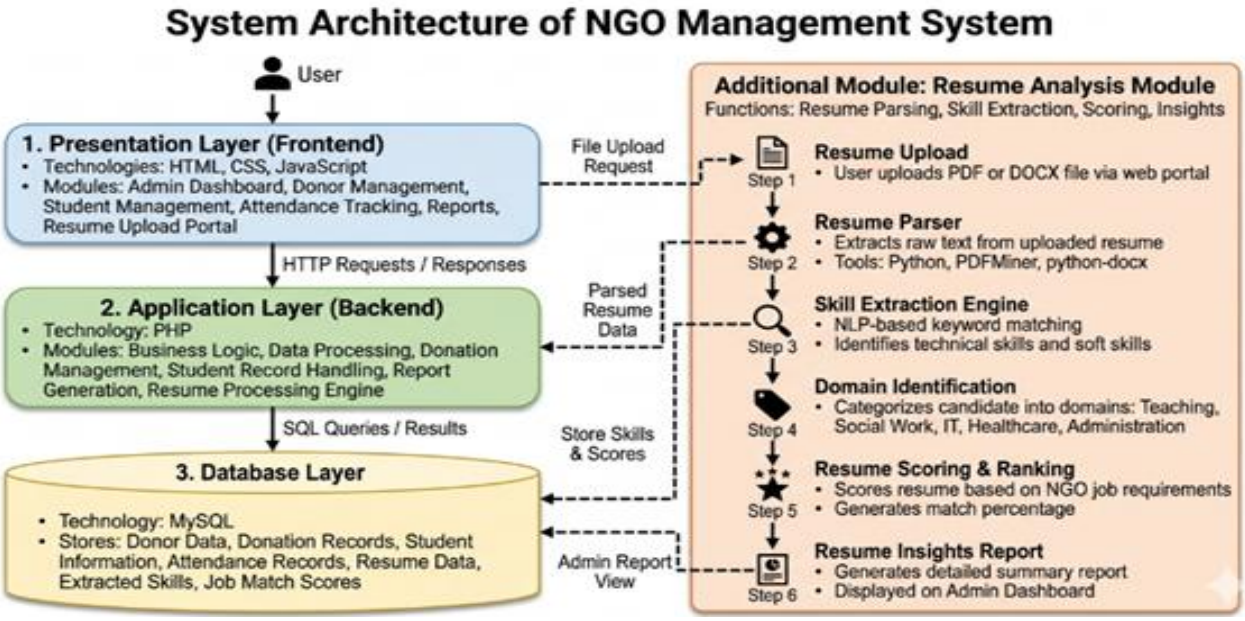

Fig. 1. System Architecture

The proposed system follows a web-based three-tier architecture, consisting of the presentation layer, application layer, and database layer. This architecture ensures proper separation of concerns, scalability, and efficient data management for the NGO system.

1. Presentation Layer (Frontend)

The presentation layer is responsible for user interaction. It is developed using HTML, CSS, and JavaScript to provide a user-friendly interface. This layer allows users such as administrators and staff to perform operations like adding donor details, managing student information, and viewing reports

2. Application Layer (Backend)

The application layer handles the business logic of the system. It is implemented using PHP, which processes user requests, validates input data, and performs operations such as donation management, student record handling, and report generation. This layer acts as a bridge between the user interface and the database.

3. Database Layer

The database layer is implemented using MySQL, which stores all system data including donor details, donation records, student information, and reports. It ensures data consistency, security, and efficient retrieval of information.

4. Resume Analysis Module

The system incorporates a Resume Analysis module designed to process and analyze unstructured resume data submitted by students. The module performs text extraction from uploaded documents (PDF/DOCX formats) and applies preprocessing techniques to standardize the content.

The processed data is then analyzed to identify key attributes such as technical skills, domain areas, and relevant competencies. Based on the extracted information, the system classifies the resume into predefined domains (e.g., IT, Teaching, Administration) and generates structured insights.

The module provides feedback in the form of skill identification, domain classification, and improvement suggestions, enabling students to enhance their resumes and align their profiles with career opportunities.

Working Flow of the System:

1. The user enters data through the frontend interface.
2. The request is sent to the backend (PHP server) for processing.

3. The backend interacts with the MySQL database to store or retrieve data.
4. The processed information is returned to the frontend and displayed to the user

This architecture ensures that the system is modular, scalable, and easy to maintain, making it suitable for NGO operations like donation management and student support.

VI. PROPOSED SYSTEM

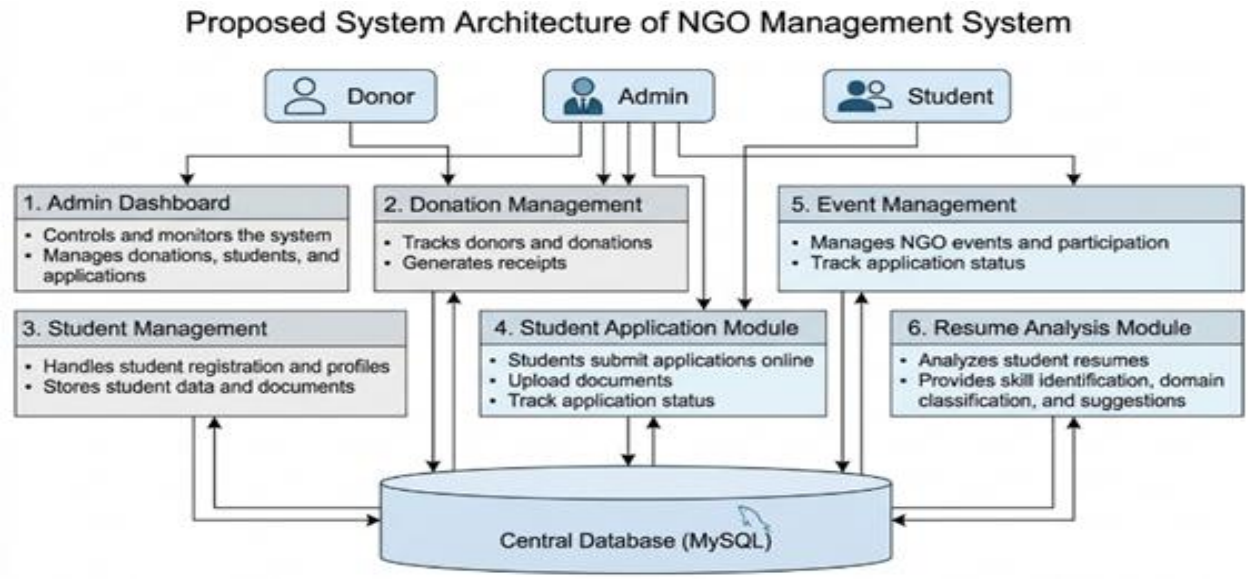

Fig. 2. Proposed System

The proposed system is a web-based NGO management platform designed to automate donation management and student support activities. It provides a centralized solution to manage donor information, student data, and reports efficiently. The system consists of the following modules:

A. Admin Dashboard:
Provides an interface for administrators to manage the system. It allows monitoring of donations, student records, and overall system activities

B. Donation Management:
Tracks donor details and donation records. It generates receipts and maintains transparency in fund handling.

C. Student Management:
Manages student registration, profile details, and document uploads. It maintains organized student records in the system.

D. Student Application Module:
Allows students to submit applications online through the portal. Students can fill in their details, upload required documents, and track their application status. This module simplifies the application process and reduces manual paperwork.

E. Event Management:
Handles NGO events and participation details. It allows administrators to manage and track event activities.

F. Resume Analysis Module (Key Feature)
This module analyzes student resumes and provides basic insights such as:

- Skill identification
- Domain classification
- Suggestions for improvement

The module helps students improve their resumes and supports their career development.
The proposed system integrates all these modules into a single platform, improving efficiency, transparency, and ease of management for NGO operations.

VII. METHODOLOGY

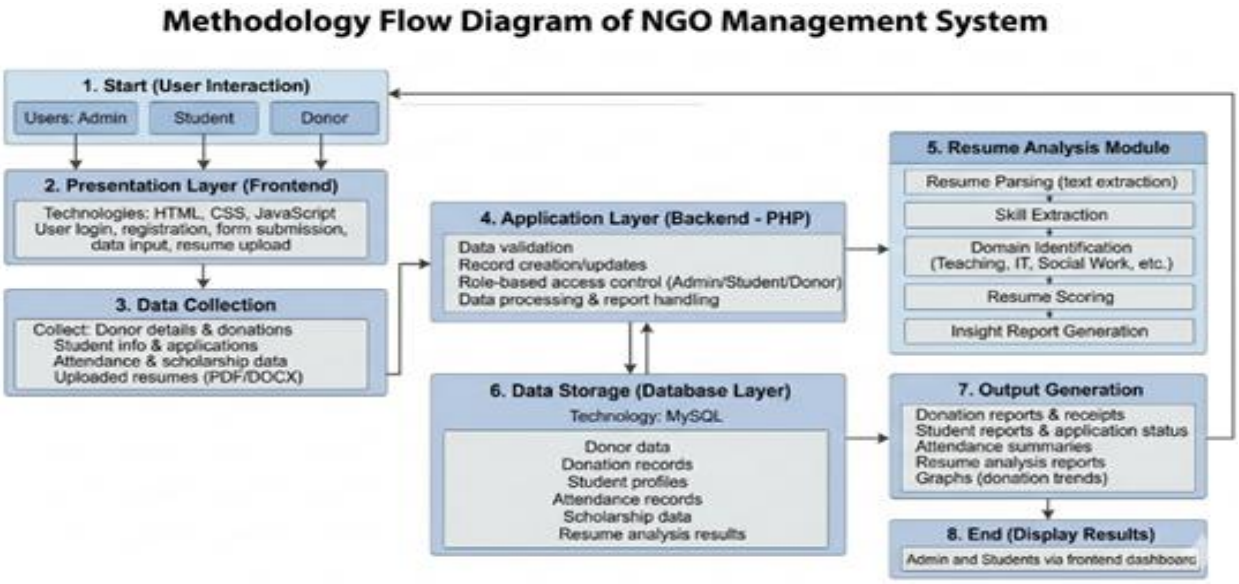

Fig. 3. Flow Diagram

The proposed system follows a modular and layered approach to develop a comprehensive web-based NGO management platform supporting donation management, student welfare, and AI-assisted resume analysis. The system is built on a three-tier architecture: a Presentation Layer developed using HTML, CSS, and JavaScript; an Application Layer developed using PHP; and a Data Layer powered by MySQL. This architecture ensures efficient data processing, scalability, and ease of maintenance.

The system handles both structured data (donor records, donation amounts, student information, attendance, scholarship details) and unstructured data (student-uploaded resumes), each processed through dedicated modules.

The methodology is divided into the following steps:

1. Data Collection:

Users — administrators, donors, and students — interact with the system through a web-based interface. Students register, upload personal details, submit applications, and upload resumes. Administrators record donations, manage student records, mark attendance, and track scholarship disbursements. Donors can be registered and their contributions tracked in real time.

2. Data Processing:

The PHP backend validates and processes all user inputs. Core operations include storing new records, updating existing data, filtering and querying student or donor information, computing attendance summaries, and triggering report generation. Role-based access ensures that administrators and students interact only with modules relevant to their role.

3. Resume Analysis Module:

Uploaded student resumes (PDF/DOCX format) are processed through a dedicated Resume Analysis pipeline consisting of the following stages:

Resume Parsing: Raw text is extracted from the uploaded document.

Skill Extraction: An NLP-based engine identifies technical skills and soft skills from the extracted text.

Domain Identification: The system categorizes the student into relevant domains such as Teaching, Social Work, IT, or Administration based on identified skills.

Resume Scoring: The resume is scored based on predefined NGO-relevant criteria and job requirements.

Insights Report: A structured feedback report is generated and displayed to the student and administrator, providing suggestions for resume improvement.

4. Data Storage:
All structured data — donor information, donation records, student profiles, attendance logs, scholarship records, and resume analysis outputs — are stored in a normalized MySQL database, ensuring data integrity, consistency, and efficient retrieval.

5. Output Generation:
The system generates multiple types of outputs including:
Donation reports and PDF receipts
Student progress and scholarship reports
Attendance summaries
Resume analysis insight reports
Donation forecast graphs
All outputs are presented through the frontend interface with multilingual support (English and Marathi) to ensure accessibility for all users.

VIII. RESULTS AND DISCUSSION

The proposed NGO Management and Student Support System was evaluated based on functionality, performance, and usability. The system successfully automates key NGO operations such as donation tracking, student management, application handling, and event management.
The Donation Management module efficiently records donor details and generates receipts, improving transparency and reducing manual errors. The Student Management and Application modules allow students to register, submit applications online, and upload documents, which simplifies the overall process and reduces paperwork.
The Resume Analysis module was tested using multiple student resumes. The system successfully identifies basic skills and domain areas and provides simple suggestions for improvement. The results are useful for students to understand their strengths and improve their career profiles.
Performance analysis shows that the system provides faster data processing compared to manual methods. The use of a structured database ensures efficient data storage and retrieval. The modular design of the system also makes it scalable and easy to maintain.
The system improves transparency by maintaining accurate donation records and generating automated receipts, which increases donor trust. Additionally, the online application system enhances accessibility for students and simplifies administrative tasks.
Overall, the results demonstrate that the proposed system effectively improves efficiency, reduces manual effort, and provides a reliable platform for managing NGO operations and supporting student development.

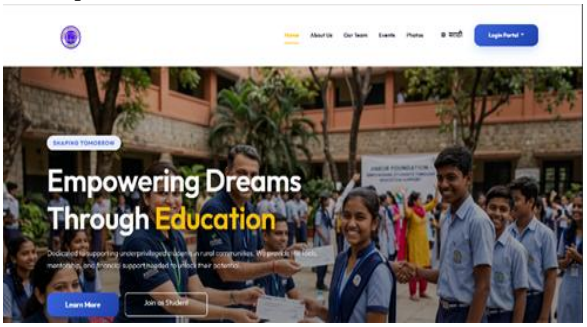

Fig 4. Home Page

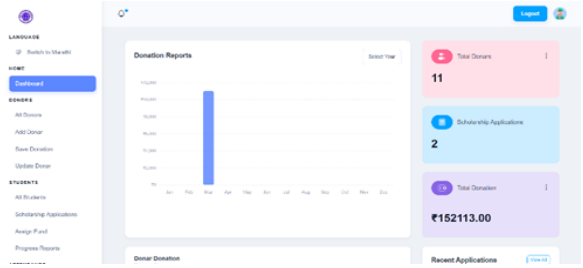
Fig 5. Admin Dashboard

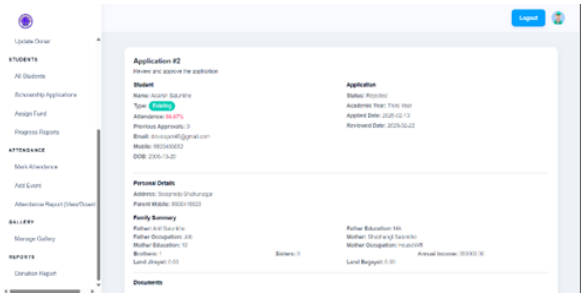
Fig 6. Scholarship Application

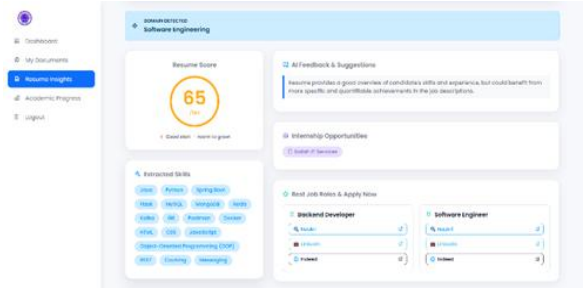
Fig 7. Resume Analysis

IX. ADVANTAGES

The proposed system offers several advantages in improving NGO operations and student support. It automates manual processes such as donation tracking, student management, and application handling, thereby reducing human effort and minimizing errors.

The system provides a centralized platform for managing donor and student data, which improves data organization and accessibility. It enhances transparency in fund management by maintaining accurate records and generating automated receipts.

The online student application module simplifies the application process by allowing students to submit their details and documents digitally, reducing paperwork and saving time.

The Resume Analysis module helps students identify their skills and domain areas, providing useful suggestions for improvement.

Additionally, the system is scalable and user-friendly, making it suitable for handling increasing data and supporting NGO operations efficiently.

X. LIMITATIONS

Despite its advantages, the system has certain limitations. The Resume Analysis module provides only basic insights and may not always give highly accurate or detailed results.

The system depends on proper user input, and incomplete or incorrect data may affect the output and overall performance.

Since the system is web-based, it requires internet connectivity for access and operation.

Additionally, the system is designed for a specific NGO setup, and further modifications may be required to adapt it for large-scale or multi-organization use.

XI. FUTURE SCOPE

The proposed system can be further enhanced in several ways. A mobile application can be developed to improve accessibility and user engagement. Integration with external platforms such as job portals can help students explore career opportunities more easily.

The Resume Analysis module can be improved to provide more accurate and detailed suggestions for career development. Additional features such as notifications, advanced reporting, and user-friendly dashboards can also be added to enhance system usability.

The system can be extended to support multiple NGOs, creating a centralized platform for managing large-scale donation and student support activities. Security features can also be enhanced to ensure better data protection and reliability.

XII. CONCLUSION

This paper presented "– Donation and Student Support Management System," a web-based platform developed to improve the efficiency and transparency of NGO operations. The system successfully automates key processes such as donation management, student record handling, online application submission, and event management, reducing manual effort and minimizing errors.

The implementation of a centralized system ensures proper data organization and easy access to information, which helps administrators manage NGO activities more effectively. The donation management module enhances transparency by maintaining accurate records and generating automated receipts, thereby increasing trust among donors.

The student support features, including registration, application submission, and profile management, simplify the interaction between students and the organization. Additionally, the Resume Analysis module provides useful insights into student skills and domain areas, helping students improve their resumes and career readiness.

The system demonstrates improved performance compared to traditional manual methods by providing faster data processing, better data management, and reduced paperwork. Its modular and scalable design makes it suitable for future enhancements and adaptation to different NGO environments.

In conclusion, the proposed system provides a reliable, user-friendly, and efficient solution for managing NGO operations while also supporting student development. It lays a strong foundation for further improvements and can be extended to create a more comprehensive digital platform for social impact.

REFERENCES

[1] D. I. De Silva *et al.*, "Donation management system," Sri Lanka.

[2] D. I. De Silva *et al.*, "Development of a web-based charity organizations and donation management system: A case study," Sri Lanka Institute of Information Technology (SLIIT), Sri Lanka.

[3] N. Auti, S. Deshmukh, H. Sharma, S. Dhumal, and P. Shinde, "Empowering change: An advanced NGO management system for efficient operations, enhanced donor engagement, and transparent community development," *International Journal for Research in Applied Science & Engineering Technology (IJRASET)*, vol. 11, 2023.

[4] J. Desale *et al.*, "NGO support software solution: For effective reachability," *I.J. Education and Management Engineering*, vol. 6, pp. 17–26, 2020.

[5] J. Jiang, X. Wang, L. Li, and B. Yang, "Design and implementation of charity donation system," *International Journal of Frontiers in Engineering Technology*, vol. 3, no. 8, pp. 79–85, 2021.

[6] R. A. S. Raghuram *et al.*, "Donation management system: Web-based donation management information system," *International Journal of Research Publication and Reviews (IJRPR)*, vol. 6, 2025.

[7] S. Borade *et al.*, "NGO and donor management system using charity blockchain," *International Journal of Innovative Research in Management, Engineering and Technology (IJIRMPS)*, vol. 12, no. 2, 2024.

[8] P. S. Shankar *et al.*, "Automated traffic management system using deep learning-based object detection," in *Proc. 1st Int. Conf. Sustainable Computing and Integrated Communication in Changing Landscape of AI (ICSCAI)*, 2024.

[9] P. S. Shankar and P. Pareek, "Predicting music popularity using machine learning algorithm and music metrics available," *Journal of Development Economics and Management Research Studies (JDMS)*, 2022.

[10] P. S. Shankar *et al.*, "E-mail spam detection using machine learning – KNN," in *Proc. 5th Int. Conf. Contemporary Computing and Informatics (IC3I)*, 2022.

[11] K. Chheda *et al.*, "Role of artificial intelligence in modern education system," *Journal of Namibian Studies*, 2023.

[12] P. S. Shankar *et al.*, "Crops prediction based on environmental factors using machine learning algorithm," *Journal of Development Economics and Management Research Studies (JDMS)*, 2022.