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Smart Animal Rescue and Welfare Platform Using Ai and Community Integration

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Abstract- ***The increasing number of stray and injured animals in urban and semi-urban areas has created a critical need for efficient rescue and welfare management systems. Existing animal rescue processes often depend on unstructured communication methods such as social media and personal networks, resulting in delayed responses and lack of coordination among stakeholders. Furthermore, individuals who encounter injured animals often lack awareness regarding immediate first aid and access to nearby support services. This research proposes a Smart Animal Rescue and Welfare Platform using Artificial Intelligence (AI) and community integration to address these challenges. The system integrates rescue reporting, location-based service discovery, AI-driven first aid assistance, fundraising mechanisms, and community participation into a unified platform. Users can report cases, identify nearby NGOs and veterinary doctors, receive AI-based guidance for emergency care, and contribute to rescue operations. The platform enables NGOs to manage rescue cases, organize events, and recruit volunteers, while veterinary professionals can provide accessible healthcare services. The integration of AI enhances decision-making and emergency response, while community participation improves reach and effectiveness. The proposed system improves coordination, reduces response time, and enhances transparency in rescue operations.***

I. INTRODUCTION

Animal welfare has become an important issue due to the increasing number of stray animals and frequent cases of injury, disease, and abandonment. Although NGOs and veterinary professionals actively work in this domain, the lack of a centralized system creates challenges in accessing timely assistance.

Most rescue activities rely on informal communication channels, leading to inefficiencies and delays. Additionally, individuals often lack knowledge about providing immediate first aid before professional help arrives.

This research introduces a Smart Animal Rescue and Welfare Platform that leverages AI and community integration to provide a centralized solution. The platform connects users, NGOs, veterinary doctors, and volunteers, enabling efficient coordination and improved animal welfare management.

II. PROCESS

The system operates through a structured workflow involving user interaction, AI assistance, and coordinated rescue operations.

Initially, users register and report rescue cases by providing details such as location, images, and description. The system uses location-based services to identify nearby NGOs and veterinary doctors.

An AI-based chat bot analyzes the symptoms provided by the user and suggests basic first aid measures. NGOs can view and accept cases, update their status, and initiate rescue operations.

If financial support is required, fundraising campaigns are generated, allowing community members to contribute. The system continuously updates case status, ensuring transparency and enabling users to track progress.

III. LITERATURESURVEY

Kolandaisamyetal.(2016) proposed a mobile application for stray animal adoption and reporting, but it lacks real- time rescue coordination and healthcare support [1].

IoT-based animal welfare systems (2021) introduced monitoring and feeding mechanisms; however, they

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do not support rescue coordination or user interaction [2].

AI-based monitoring systems (2023) improve animal healthcare tracking but lack integration with rescue management and community participation [3].

EFE et al. (2024) developed a mobile application for adoption and shelter management but did not include AI- driven assistance or emergency response features [4].

Zhang (2024) highlighted the role of AI in improving animal welfare systems but did not focus on rescue operations and community integration [5].

Rajwani (2025) proposed an AI-based system for improving rescue efficiency, but it lacks structured fundraising and community engagement features [6].

Jean et al. (2025) introduced an AI-based animal locator system but did not provide a complete rescue work flow or case management [7].

Hossein-Zadeh (2025) focused on AI in veterinary science, emphasizing healthcare improvements but not rescue coordination [8].

IV. RESEARCHGAP

Existing systems are fragmented and focus on individual functionalities such as adoption, monitoring, or reporting. There is no comprehensive platform that integrates AI- based first aid, rescue coordination, healthcare services, fundraising, and community participation into a single system.

The proposed system addresses this gap by combining intelligent automation with community-driven participation to create a unified and scalable solution.

V. FLOWCHART

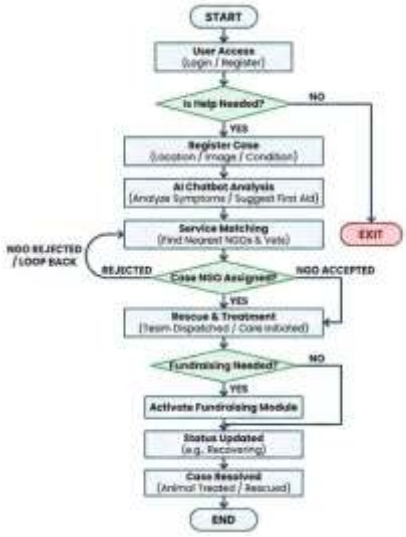

Fig.1.SmartAnimalRescueandWelfarePlatform– System Flowchart

VI. FEATURES

- AI-based first aid chat bot
- Location-based NGO and doctor discovery
- Case tracking and status updates
- Community-driven fundraising system
- Event and volunteer management
- NGO and doctor integration

VII. APPLICATIONS

a. Urban Animal Rescue Systems
Efficient handling of rescue cases in urban areas with high stray populations.

b.NGO and Welfare Organizations
Helps NGOs manage operations and increase visibility.
Supports vaccination drives and population control programs.

c. Veterinary Services
Improves accessibility to health care services.

d. Community Participation Platforms
Encourages users to contribute through donations and volunteering.

e. Government Collaboration

VIII. ADVANTAGES

- Faster rescue response time
- Improved coordination among stakeholders
- Transparency through case tracking
- Reduced manual effort
- Increased community participation
- Better decision-making through AI

IX. FUTURESCOPE

a. Advanced AI Diagnosis
Integration of advanced AI models for accurate medical assistance.

b. Government Integration
Collaboration with municipal systems for better management.

c. Mobile Application Development
Improved accessibility through mobile platforms.

d. Data Analytics
Use of data for disease tracking and welfare planning.

X. RESULTS

The proposed system improves rescue efficiency by reducing delays and enhancing coordination. The integration of AI assistance and community participation leads to better outcomes and increased involvement in animal welfare activities.

CONCLUSION

The Smart Animal Rescue and Welfare Platform using AI and community integration provides a comprehensive solution for animal welfare management. By combining AI-driven assistance with community participation, the system enhances efficiency, reduces response time, and improves coordination among stakeholders.

The platform represents a scalable and impact full approach to addressing modern challenges in animal rescue and welfare systems.

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