

The Paw Story: An AI-Powered Dog Health Monitoring and Adoption Platform

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Abstract - The rapid growth of pet ownership alongside the persistent issue of stray dog populations has created significant challenges in ensuring proper animal welfare. While pet dogs receive structured care, stray dogs often lack access to food, medical treatment, and safe shelter, leading to increased risks of disease transmission, accidents, and poor living conditions. This research presents “The Paw Story,” a unified web-based platform designed to support both pet and street dogs through integrated services such as an online pet store, adoption support, health awareness, and emergency reporting. The platform also introduces an AI-Based Dog Health Checker that helps users identify potential diseases using images and symptom inputs and provides basic first-aid suggestions. The system aims to improve accessibility, promote responsible pet care, and enhance community involvement in animal welfare.

Key Words: animal welfare, dog adoption, stray dogs, artificial intelligence, web application, pet care system

In addition to supporting pet owners, “The Paw Story” focuses significantly on the welfare of street dogs, which are often neglected and face serious challenges such as injuries, diseases, and accidents. The platform includes a reporting feature that allows users to notify authorities or volunteers about injured or sick dogs, ensuring timely assistance and medical care. It also provides an option to request reflective safety belts for street dogs, which helps reduce road accidents by increasing their visibility at night. A key innovation of the platform is the AI-Based Dog Health Checker, which allows users to upload images of dogs or select symptoms to identify potential health issues. The system analyzes the input and provides information about possible diseases, severity levels, and basic first-aid suggestions, while also guiding users to nearby veterinarians or animal welfare organizations in critical situations. By combining technology with community participation, “The Paw Story” aims to create a reliable, accessible, and impactful ecosystem that improves the lives of both pet and stray dogs.

1. INTRODUCTION

“The Paw Story” is a web-based platform developed to provide a comprehensive solution for dog welfare by integrating multiple services into a single system. The platform is designed to function as a digital support center where users can access various features related to pet care and street dog welfare. It includes an online marketplace where users can purchase essential products such as dog food, toys, and accessories, ensuring convenience for pet owners. Additionally, the platform provides verified information about adoption centers and shelters, particularly in Nagpur, enabling users to adopt dogs safely and responsibly. The website also offers detailed and easy-to-understand information about dog breeds, vaccination schedules, and general healthcare practices, helping users improve their knowledge and provide better care for their pets.

2. LITERATURE REVIEW

The development of digital platforms for pet care and animal welfare has been widely explored in recent research, with a focus on improving adoption processes, healthcare accessibility, and user engagement. These studies emphasize the importance of leveraging technology to address the growing challenges associated with pet ownership and stray animal management. While several systems have been proposed to enhance specific aspects such as adoption or veterinary services, there is a clear need for integrated solutions that combine multiple functionalities into a single platform. This section reviews key research papers that contribute to the understanding of current trends and limitations in this domain.

The study titled “The Evolution of Pet Care Services: Meeting the Demands of Modern Pet Owners” highlights the rapid expansion of the pet care industry, driven by increasing pet ownership and changing lifestyles. The research explains that

modern pet owners require convenient and personalized services such as grooming, healthcare, and pet sitting, as they often struggle to manage these responsibilities alongside their professional commitments. It also discusses the role of digital platforms in providing these services efficiently and improving user experience. However, the study identifies challenges such as limited integration of services and lack of comprehensive solutions. This research supports the need for a platform like “The Paw Story,” which combines multiple services into a single system to address these challenges effectively.

The research paper “Shelter Soul: Bridging Shelters and Adopters Through Technology” focuses on improving the adoption process through the use of digital platforms. It highlights the inefficiencies of traditional adoption systems, including lack of transparency, limited accessibility, and poor communication between shelters and adopters. The study proposes a system that includes features such as intelligent matching, shelter management, and secure donation handling to improve adoption rates and user satisfaction. It also emphasizes the importance of real-time updates and user-friendly interfaces in enhancing the adoption experience. This paper provides valuable insights into designing effective adoption systems, which are incorporated into “The Paw Story” to ensure safe and reliable adoption processes.

The paper “Overview of the Stray Animals in India and Their Regulation” provides an in-depth analysis of the challenges associated with stray animal populations in India. It highlights issues such as uncontrolled population growth, spread of diseases, and increased risk of road accidents involving stray dogs. The study also discusses the lack of proper management systems and the need for community participation in addressing these challenges. It emphasizes the importance of awareness programs and preventive measures to improve the welfare of stray animals. This research strongly supports the inclusion of features such as accident reporting and safety measures in “The Paw Story,” which aim to address these issues effectively.

The study “Web Application for Stray Animal Adoption and Care Website” presents a platform designed to facilitate the adoption and care of stray animals. It explains how users can upload information about animals, apply for adoption, and connect with veterinary doctors for treatment. The system also promotes awareness and encourages users to contribute to animal welfare activities. While the platform successfully integrates adoption and basic care features, it lacks advanced functionalities such as AI-based health analysis and e-commerce integration. This limitation highlights the need for a more comprehensive system, which is addressed by “The Paw Story” through the inclusion of additional features such as AI-based disease detection and an online pet product marketplace.

3. PROBLEM STATEMENT

The current animal welfare ecosystem is fragmented and inefficient, resulting in limited accessibility to essential services for both pet owners and stray animals. Pet owners often face difficulties in obtaining reliable information regarding dog health, vaccination schedules, and proper care, while potential adopters struggle to find trustworthy shelters and verified adoption centers. At the same time, stray dogs frequently suffer from injuries, infections, and accidents without receiving timely medical attention due to the absence of a centralized reporting system. The lack of awareness and

accessible tools for identifying health issues further complicates the situation, as many individuals are unable to recognize symptoms or take appropriate action without professional guidance.

Moreover, existing platforms do not effectively utilize modern technologies such as artificial intelligence to provide real-time health analysis or predictive insights. This results in delayed diagnosis and treatment, which can significantly affect the survival and well-being of animals. Additionally, preventive measures such as safety solutions for street dogs are rarely implemented, leading to avoidable accidents and injuries. The absence of a unified platform that integrates pet care services, adoption systems, health monitoring, and community participation creates a significant gap in the current system. Therefore, there is a need for a comprehensive and technology-driven solution that addresses these challenges by providing a centralized, efficient, and user-friendly platform for dog welfare.

4. OBJECTIVES

The primary objective of this research is to develop a comprehensive web-based platform that integrates multiple services to support both pet and stray dog welfare. The system aims to provide accurate and accessible information related to dog health, breeds, vaccination schedules, and general care practices, enabling users to make informed decisions. Another important objective is to simplify and improve the adoption process by connecting users with verified shelters and adoption centers, ensuring transparency and reliability. The platform also aims to enhance convenience for pet owners by offering an online marketplace for essential products such as food, toys, and accessories.

In addition to these features, the system focuses on improving the welfare of street dogs by enabling users to report injured or sick animals and request safety measures such as reflective belts. A key objective is the implementation of an AI-Based Dog Health Checker that allows users to identify potential diseases and receive first-aid guidance. The platform also aims to encourage community participation through donation features and awareness initiatives, ultimately contributing to the overall improvement of animal welfare.

5. METHODOLOGY

The methodology adopted for this research involves a structured approach that includes literature analysis, requirement gathering, system design, and conceptual implementation. Initially, relevant data is collected from research papers and existing platforms to identify current challenges and limitations in animal welfare systems. Based on this analysis, the system requirements are defined, focusing on usability, scalability, and integration of multiple features. The platform is designed as a modular web-based system consisting of various components such as adoption services, e-commerce functionality, health information systems, and reporting mechanisms.

The AI-Based Dog Health Checker is developed using machine learning techniques that analyze user inputs, including images and symptoms, to predict possible health conditions and provide recommendations. The system architecture ensures secure data handling, efficient performance, and seamless integration of different modules. A user-centered design

approach is followed to ensure that the platform is easy to use and accessible to a wide range of users. Testing and evaluation are conducted to ensure the reliability and effectiveness of the system, with a focus on improving user experience and system performance.

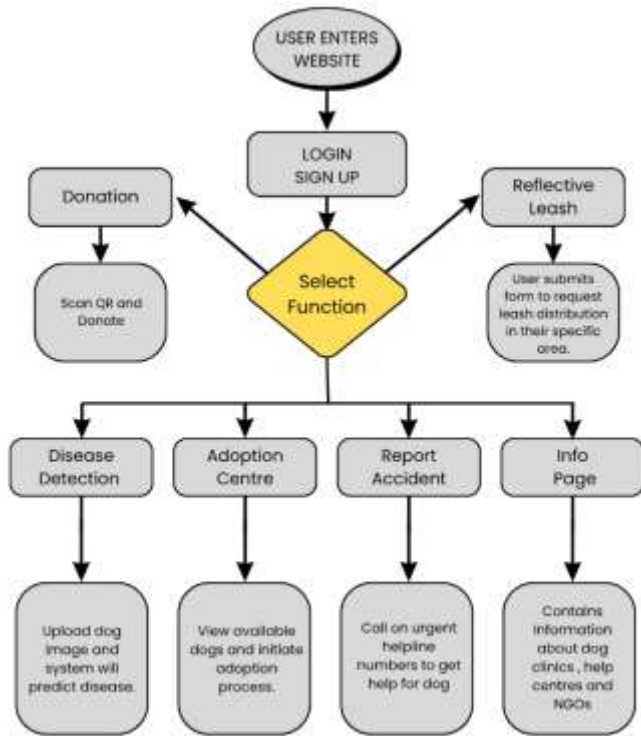


Fig -1: System Flow of The Paw Story Platform

The system is designed using a user-centric and modular architecture that integrates multiple dog welfare services into a single platform. The process begins when a user enters the website and is directed to a secure login or sign-up page. This authentication step ensures that user data is safely managed and allows personalized interaction with the system. Once logged in, the user is taken to a central interface where they can select the desired function, making navigation simple and efficient. After authentication, the system presents a “Select Function” layer that acts as the core of the architecture. From this point, users can access various modules depending on their needs. This design ensures that all services are well-organized and easily accessible without overwhelming the user. Each module is connected through this central hub, allowing smooth transitions between different functionalities while maintaining a consistent user experience.

The platform includes several key modules that serve different purposes. The donation module allows users to support dog welfare initiatives through a simple QR-based payment system, making the contribution process quick and convenient. The reflective leash module enables users to submit a request form for leash distribution in their area, helping improve the safety and visibility of stray dogs. The disease detection module uses image-based analysis, where users upload a dog’s image and the system predicts potential diseases, supporting early diagnosis and treatment.

Additionally, the adoption centre module provides users with the ability to view available dogs and initiate the adoption process, encouraging responsible pet ownership. The report accident module is designed for emergency situations, allowing users to quickly contact helpline numbers to ensure immediate assistance for injured dogs. The information page module serves as a resource hub, offering details about nearby clinics, help centers, and NGOs, thereby guiding users toward appropriate support services.

Overall, the system follows a modular approach where each component functions independently while remaining integrated within a unified interface. This architecture enhances scalability, allowing new features to be added easily, and improves maintainability by enabling updates to individual modules without affecting the entire system. The design ensures a seamless, efficient, and user-friendly experience while addressing multiple aspects of dog welfare through a single digital platform.

6. RESULT

The implementation of “The Paw Story” has led to noticeable improvements in accessibility, efficiency, and overall user engagement in activities related to dog welfare. By bringing multiple services under a single, centralized platform, the system eliminates the need for users to rely on scattered sources of information or disconnected applications. This unified interface simplifies the process of managing pet care, reporting issues, and participating in welfare initiatives, making the entire experience more convenient and user-friendly. As a result, users are more likely to actively engage with the platform and contribute to its services.

One of the most impactful features of the system is the AI-Based Dog Health Checker, which enhances early detection of potential health issues in dogs. By allowing users to upload images and receive predictions, the system provides quick preliminary insights that can guide further medical attention. This not only increases the chances of timely treatment but also helps in reducing the severity and spread of diseases among stray and domestic dogs. In addition, the reporting system plays a crucial role in emergency management by enabling users to quickly access helpline services, thereby ensuring faster response times and improving the chances of rescuing injured animals.

The adoption module further contributes to the system’s effectiveness by providing a transparent and structured process for adopting dogs. Users can view available animals, understand their details, and initiate the adoption process with ease. This transparency builds trust among users and encourages more people to consider adoption as a viable and responsible option. Overall, the system enhances operational efficiency while making dog welfare services more accessible and reliable.

“The Paw Story” significantly contributes to community involvement by empowering users with tools and resources to actively participate in animal welfare activities. The platform bridges the gap between individuals, volunteers, and organizations by creating a digital space where users can report issues, request services, donate, and adopt animals. This increased accessibility encourages more people to take part in welfare initiatives, thereby strengthening community engagement.

Furthermore, the platform plays an important role in spreading awareness about responsible pet ownership and the importance

of caring for stray animals. Through its informational resources and practical features, users become more informed about animal health, safety measures, and ethical responsibilities. This awareness leads to more compassionate behavior toward animals and promotes a culture of care and responsibility within society.

By integrating modern technology with social responsibility, “The Paw Story” creates a meaningful and lasting impact on both animal welfare and community development. It not only improves the quality of life for dogs by ensuring better health care, safety, and adoption opportunities but also fosters a sense of collective responsibility among people. In the long run, such a platform contributes to building a more humane and supportive environment for animals while encouraging sustainable community-driven welfare practices.

7. CONCLUSIONS

This research presents “The Paw Story” as a comprehensive and innovative platform aimed at improving dog welfare by integrating multiple essential services into a single, unified system. Unlike traditional approaches where users depend on separate platforms for adoption, healthcare guidance, donations, and emergency reporting, this system brings all functionalities together, creating a seamless and efficient user experience. By addressing the limitations of fragmented systems, the platform successfully establishes a well-structured ecosystem that supports both pet owners and individuals concerned about stray animals.

A key highlight of the system is the integration of AI-based health analysis, which enhances the capability of early disease detection in dogs. This feature allows users to identify potential health issues at an early stage, enabling quicker medical intervention and reducing the risk of severe conditions. In addition to improving healthcare accessibility, the platform also strengthens other aspects of dog welfare, such as simplifying the adoption process, enabling quick emergency reporting, and facilitating easy contributions through donations. These combined functionalities significantly improve the efficiency and effectiveness of welfare activities.

Looking ahead, the platform has strong potential for further enhancement and expansion. Future developments may include the integration of more advanced AI models for improved accuracy in disease prediction, the introduction of a dedicated mobile application for better accessibility, and stronger collaboration with veterinary professionals, NGOs, and animal welfare organizations. These improvements can further increase the platform’s reach, reliability, and overall impact, making it a more powerful tool in advancing animal welfare and community engagement.

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