

PetSoLive: A Specialized Platform for Animal Welfare

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Abstract—PetSoLive is a specialized social media platform designed to bridge the communication gap between animal owners and veterinarians. This document outlines the software’s objectives, architecture, functional and non-functional requirements, and various scenarios it addresses. The goal is to enhance animal welfare through improved communication, adoption processes, and timely veterinary care. This paper presents a detailed description of PetSoLive’s structure, models, requirements, and future evolution.

Index Terms—PetSoLive, Animal Welfare, Veterinarian Support, Adoption Platform, Veterinary Communication, Emergency Assistance.

I. PREFACE

This document provides a comprehensive overview of PetSoLive, a specialized social media platform built to facilitate communication between animal owners and veterinarians. By introducing features like emergency assistance, lost pet advertisements, and pet adoption listings, PetSoLive aims to improve animal welfare and streamline communication processes. This paper details the objectives, architecture, requirements, and functionality of the platform.

II. INTRODUCTION

A. Problem Statement

Animal owners often face difficulties in accessing timely and effective veterinary care, particularly during emergencies. Traditional communication methods such as phone calls and in-person visits are slow and sometimes inadequate. Additionally, existing social media platforms do not cater to the unique needs of animal owners and veterinarians. This leads to delays in receiving veterinary advice, difficulty in finding lost pets, and a lack of a centralized platform for adoption services.

PetSoLive aims to bridge these gaps by providing a specialized social media platform that offers timely communication, effective problem-solving, and direct access to veterinary care. The platform is designed to address the unique needs of the pet care community.

B. Objectives

PetSoLive has been developed with the following primary objectives:

- Facilitate immediate communication between animal owners and veterinarians.
- Provide an efficient system for creating and responding to emergency assistance announcements.
- Streamline the pet adoption process by offering detailed listings and contact features.
- Offer vaccine reminders and health-related notifications to ensure pets receive timely care.
- Build a community platform where pet owners can share tips, ask questions, and offer advice.

C. Target Audience

The target users of PetSoLive include:

- **Animal Owners:** Pet owners looking for quick assistance with pet care, health, and lost pet recovery.
- **Veterinarians:** Professionals offering veterinary advice, consultations, and emergency care.
- **Adoption Agencies:** Organizations involved in pet adoption, providing details about available pets and facilitating adoption processes.
- **Pet Lovers:** Individuals who want to engage in discussions, share experiences, and help other pet owners.

D. Software Description

PetSoLive is an interactive platform that integrates several key features, including:

- A dynamic timeline for viewing and interacting with posts about pet adoption, veterinary tips, and lost pet alerts.
- Tools for creating emergency assistance announcements and sharing urgent requests for veterinary help.
- Detailed pet profiles for managing adoption listings, allowing prospective adopters to browse and contact caretakers.
- Vaccine reminders and health notifications, ensuring that pet owners are informed about their pets’ care needs.

III. GLOSSARY

- **Assistance Announcement:** A post created by users seeking urgent veterinary help for their pets, providing details of the pet's condition.
- **Adoption Listing:** A feature on the platform where pets available for adoption are listed, including necessary details about the pet's health, age, and breed.
- **Dynamic Timeline:** A real-time feed that showcases posts related to pets, including advice, success stories, lost pet alerts, and pet adoption.
- **Emergency Tag:** A special marker applied to assistance announcements to prioritize them as urgent and require immediate attention.

IV. USER REQUIREMENTS DEFINITION

A. Functional Requirements

PetSoLive must support the following core functionalities:

- Display a dynamic, real-time social media timeline for users to browse adoption stories, veterinary advice, and lost pet alerts.
- Allow users to create and manage assistance announcements for urgent veterinary help.
- Enable pet owners to post and share advertisements for missing pets.
- Facilitate the pet adoption process with detailed listings and an easy communication system between adopters and caretakers.

B. Non-Functional Requirements

To ensure a smooth and efficient user experience, the following non-functional requirements must be met:

- **Performance:** The platform should handle large volumes of traffic and ensure smooth interaction across all devices, especially during peak times.
- **Reliability:** Ensure the platform remains online 24/7 with appropriate backup systems to prevent any data loss.
- **Security:** Implement encryption and secure login processes to protect user data and privacy.
- **Usability:** The platform should be easy to use, with a clean, intuitive user interface that works across both mobile and desktop devices.

C. Use Cases

The platform supports various use cases, including:

- **Lost Pet Advertisement:** Users can post missing pet advertisements that include the pet's description, picture, and location. The community can respond with potential sightings.

- **Adoption Process:** Prospective adopters browse through pet adoption listings, interact with caretakers, and finalize the adoption.
- **Vaccine Reminder:** Veterinarians can send reminders to pet owners about upcoming vaccinations or health checkups.

V. SYSTEM ARCHITECTURE

A. High-Level Architecture

The PetSoLive platform comprises several key components:

- **Frontend Interface:** Built using ASP.NET Core MVC with CSHTML views, allowing users to interact with the platform through web interfaces.
- **Backend System:** The backend is powered by ASP.NET Core and serves as the main engine for handling user requests, posts, interactions, and notifications.
- **Database:** The platform uses MSSQL for storing user data, posts, pet information, and interactions.
- **Cloud Infrastructure:** The platform is hosted on Azure for scalability, high availability, and reliability.

B. Technology Stack

The platform uses the following technologies:

- **Backend:** ASP.NET Core MVC for building the web application and handling the server-side logic.
- **Frontend:** CSHTML for building dynamic views and pages within the application. This allows for seamless integration with Razor Pages for rendering dynamic content.
- **Database:** Microsoft SQL Server (MSSQL) is used for data storage and management. The backend will interact with the database via Entity Framework Core.
- **Hosting:** The application will be hosted on Microsoft Azure, providing a secure and scalable cloud environment.

C. Deployment Architecture

The platform is deployed on Azure cloud infrastructure. Azure App Services will be used to host the ASP.NET Core web application, while Azure SQL Database is used for the MSSQL database. This architecture ensures that the platform can scale according to traffic needs and provide high availability.

VI. SYSTEM REQUIREMENTS SPECIFICATION

A. System Models

1) Data Model

PetSoLive's database consists of the following tables:

- **Users Table:** Stores information about pet owners, veterinarians, and adoption agencies.
- **Posts Table:** Stores assistance announcements, lost pet ads, and adoption listings.
- **Interaction Table:** Tracks user interactions such as comments, likes, and shares.

2) *Behavioral Model*

PetSoLive will use sequence diagrams to model user interactions such as:

- Browsing the timeline.
- Creating emergency assistance posts.
- Completing the adoption process.

VII. SYSTEM EVOLUTION

A. *Future Enhancements*

The platform may include the following enhancements:

- Integration with IoT devices for real-time pet tracking.
- AI-driven recommendations for pet care and veterinarian advice.
- Support for multiple languages to cater to a broader global audience.

VIII. APPENDICES

A. *Testing Documentation*

PetSoLive will undergo comprehensive testing, including:

- Functional testing of all features.
- Load testing to simulate high traffic scenarios.
- Security audits to ensure that user data is securely handled.

IX. INDEX

The document is organized as follows:

- **Preface:** Introduction to the PetSoLive platform and its objectives.
- **Glossary:** Key terms used throughout the document.
- **System Architecture:** High-level overview of the platform's design.
- **System Evolution:** Future enhancements and improvements.

X. REFERENCES

REFERENCES

- [1] F. Okal et al., "Requirements Analysis Document for PetSoLive," Fall 2023.