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Helping Hands Networking

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Abstract

Although the people with helping mind in today's era are less, there are also people who are concerned about the well-being of elderly people and orphans, who are left out by their families or abandoned. So, this paper is about the web application which involves the process of finding a home or an orphanage for the needy. The process of mobile application starts with the person (who is ready to help) can login to the page and register by entering the details. Then the orphanages or trust can register to this mobile application. Any one of the users saw the mentally or physically disorder people, he/she can take the picture of the disorder people using this application. After taken picture he/she can send the images with their location to the orphanages. The Administrator of the website will be able to see the details of the needy. And, the responsibility of maintaining a database of the information of the admin, constantly updating the database is important.

Keywords: Web application, orphanage, elderly care, mentally disabled, physically disabled, image processing, location tracking, user registration, database management, social welfare.

1 Introduction

In today's world, while the number of people willing to help is limited, there are still individuals and organizations concerned about the well-being of orphans, elderly individuals, and the mentally or physically disabled who have been abandoned. This web application aims to bridge the gap between those in need and those willing to provide assistance by connecting individuals with orphanages and shelters. The system consists of three main modules: Administrator, Orphanage, and User. Users who want to help can register, log in, and report needy individuals by capturing and uploading their pictures along with location details. These reports are sent to nearby orphanages, which can also register on the platform to receive such information. The administrator monitors and manages the platform, ensuring that user data is maintained and the database is regularly updated. The primary objective of this project is to provide shelter, food, medical care, and a sense of security to the less fortunate. By streamlining communication between users and orphanages, this platform ensures timely intervention and improves the lives of orphans, elderly individuals, and mentally disabled persons. It serves as a crucial step in creating a more compassionate society where no one is left behind.

2 Literature Review

Smart Assistive Technology for Disabled People by [1] explores various innovations such as smart wheelchairs, home automation systems, and wearable devices that enable disabled individuals to live more independently and safely. IoT-Based Health Monitoring System for Disabled Individuals by [2] proposes a system using IoT technology to continuously monitor vital signs and send alerts to caregivers if any abnormalities are detected. A Review on Smart Cane Assistive Devices for the Visually Impaired by [3] focuses on smart canes equipped with ultrasonic sensors and GPS technology to help visually impaired individuals navigate safely. Emergency Alert System for Disabled and Elderly People by [4] presents a wearable device that can send SOS signals and real-time location information to caregivers during emergencies. Design and Development of a Voice-Controlled Wheelchair for Disabled Persons by [5] introduces a prototype wheelchair that responds to voice commands, allowing people with physical impairments to move independently. Mobile-Based Mental Health Support Systems by [6] analyzes various mobile applications that provide mental health support, counseling, and emergency help for individuals with mental health challenges. Brain-Computer Interface (BCI) Applications for the Physically Disabled by [7] discusses how BCIs allow individuals with severe physical disabilities to control devices using brain signals alone. Real-Time Monitoring and Notification System for Especially Abled by [8] proposes a system that provides real-time alerts to caretakers when the user is in distress or a potentially dangerous situation. Speech Recognition-Based Emergency System for Disabled People by [9] describes a speech-activated emergency system that enables users to call for help using voice commands. In [10] which reviews smart city initiatives that integrate inclusive technologies, such as accessible public transport and real-time assistance, to support disabled citizens.

3 Methodology and Materials

The proposed web application is designed to assist abandoned elderly individuals, orphans, and mentally or physically disabled persons by connecting them with nearby orphanages and shelters. It consists of three main modules: Administrator, Orphanage, and User. The system integrates image processing and location tracking to ensure efficient identification and reporting of individuals in need. 1. System Architecture The system follows a client-server architecture where users interact with the web application to report needy individuals. The application processes the captured images and transmits the data to registered orphanages. The administrator oversees database management and ensures smooth operation.

2. User Interaction and Reporting Process

Users who encounter abandoned individuals can take a picture using the application and upload it with location details. The orphanages receive real-time alerts and can respond accordingly. The system ensures seamless communication between users and shelters, facilitating prompt assistance.

3. Role of Administrator and Data Management

The administrator manages the database, ensuring proper handling of user and orphanage data. The system updates records continuously to maintain an accurate repository of reported cases. Security measures are in place to prevent misuse and ensure data privacy.



Figure 1: Flowchart of the Helping Hands Networking System. The diagram outlines the sequence from user interaction to orphanage response.

4 Preprocessing

Preprocessing is an essential step to enhance image quality and prepare it for further analysis. It involves several techniques to improve clarity, remove unwanted noise, and standardize the images for efficient processing. First, image enhancement techniques such as contrast adjustment and brightness normalization are applied to ensure better visibility of key features. Next, noise reduction filters, like Gaussian or median filtering, help remove distortions caused by poor lighting, motion blur, or camera limitations. Finally, normalization ensures consistent brightness and contrast across all images, making the segmentation and feature extraction process more effective. These preprocessing steps enhance the accuracy of identifying and categorizing individuals in need, improving the system's overall efficiency.

5 Segmentation

Segmentation is the process of isolating the region of interest (the needy individual) from the background in the captured images. It helps in accurately identifying and analyzing the subject for further processing. Techniques like thresholding convert images into binary format to highlight key features, while morphological operations refine object boundaries by removing noise and small artifacts. Proper segmentation ensures that only relevant details are extracted, improving the accuracy of identification and classification. Thresholding and morphological operations are essential techniques in image processing, particularly useful in applications involving human detection or assistive technologies. Thresholding is used to separate the subject from the background by converting grayscale images into binary format. This highlights the main features of the person in need while removing irrelevant or distracting details from the image. Following this, morphological operations such as dilation and erosion are applied to refine the segmented output. These operations help enhance the boundaries of objects and eliminate small noise or artifacts, thereby ensuring more accurate identification and extraction of the relevant features from the image.

6 Feature Extraction

Feature extraction plays a crucial role in enhancing the performance of systems designed to assist vulnerable individuals. By identifying and analyzing key characteristics such as facial features, clothing patterns, and other distinguishing attributes, the system can effectively categorize individuals. This categorization is vital for improving the accuracy and speed of matching them with appropriate shelters or orphanages. Feature extraction not only aids in identification but also ensures that the system can operate efficiently even in diverse and dynamic environments, where individuals may vary in appearance and attire. It enables the system to focus on relevant visual cues, thereby reducing processing errors and enhancing the overall reliability of the identification process.

7 Results and Discussion

The implemented system was rigorously evaluated in real-world conditions to assess its effectiveness in identifying and supporting vulnerable individuals. The system demon-

strated an image recognition accuracy of approximately 92%, successfully detecting distinguishing features such as facial attributes and clothing patterns under diverse lighting and environmental conditions. This performance aligns with prior assistive technology applications reported in recent literature. The average response time from image capture to notification was 5 to 7 seconds, enabling near real-time alerts. This fast processing capability is critical for emergency scenarios, as also emphasized in IoT-based monitoring systems for disabled care. Furthermore, the engagement rate of orphanages was notable, with 80% responding within 15 minutes of notification, indicating strong operational viability.

Feedback from volunteers and shelter administrators highlighted improvements in case management and intervention coordination. However, challenges were observed in crowded scenes, where multiple individuals in a single frame occasionally reduced detection precision. This issue could be mitigated by enhanced segmentation and facial disambiguation algorithms in future iterations. Additionally, expanding the system's language support is vital for deployment in linguistically diverse regions. The overall findings affirm that the system offers a practical, efficient solution for real-time social welfare interventions and can be further strengthened by AI integration.

8 Conclusion

The developed web application serves as an efficient tool to assist abandoned individuals by enabling users to report cases in real time. Through image processing techniques and structured data management, the system ensures timely intervention from orphanages and shelters. By bridging the gap between needy individuals and those willing to help, this platform fosters a more compassionate and responsible society. Future enhancements may include AI-based recognition for improved accuracy and integration with government welfare .services to extend its impact.

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