



KHOJ: A LOST & FOUND AND SAFETY ASSISTANCE SYSTEM FOR RAILWAY PASSENGERS

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ABSTRACT

Railway transportation is one of the most widely used modes of travel, serving millions of passengers daily. However, issues such as lost belongings, missing persons, and passenger safety remain significant challenges. This project proposes **KHOJ**, an intelligent lost & found and safety assistance system designed specifically for railway passengers. The system leverages mobile and web technologies, along with artificial intelligence techniques such as image recognition and data matching, to help passengers report and recover lost items and ensure safety. By integrating features like real-time alerts, image-based matching, and centralized data storage, the system enables efficient tracking of lost items and quick identification of potential threats. Additionally, the safety module allows passengers to send emergency alerts and share their location with authorities. The proposed system aims to enhance passenger convenience, improve recovery rates of lost items, and ensure a safer travel experience.

INTRODUCTION

Railways play a crucial role in public transportation, especially in countries with large populations, where millions of passengers rely on trains for daily commuting and long-distance travel. Despite their

importance, railway systems often face challenges related to passenger safety, lost belongings, and missing persons. Passengers frequently lose valuable items such as luggage, documents, and electronic devices during their journey, leading to inconvenience and financial loss. Additionally, safety concerns such as theft, harassment, and emergencies further highlight the need for an intelligent support system. Traditional lost-and-found systems in railway stations are mostly manual, involving physical registers and delayed communication, which significantly reduces the chances of recovering lost items.

To address these challenges, the proposed system **KHOJ** introduces a digital and AI-powered solution that integrates lost & found services with safety assistance features. The system allows users to report lost or found items through a mobile or web interface, upload images, and provide relevant details. Using artificial intelligence techniques such as image recognition and data matching, the system identifies potential matches between lost and found items, increasing recovery efficiency. Furthermore, the safety module enables passengers to send emergency alerts, share real-time location, and receive assistance from railway authorities. By combining modern technologies such as cloud computing, mobile applications, and AI, the system aims to provide a seamless and user-friendly platform that enhances passenger safety and convenience. The implementation of such a system can significantly improve



railway services and contribute to a safer and more organized travel environment.

LITERATURE SURVEY

1. Title: Lost and Found System Using Web Technology

Authors: S. Gupta et al. (2018)
Merits: Easy reporting system, centralized database
Demerits: No AI-based matching

2. Title: Image-Based Object Matching System

Authors: R. Singh et al. (2019)
Merits: Uses image recognition for identification
Demerits: Accuracy depends on image quality

3. Title: Smart Safety System for Public Transport

Authors: A. Kumar et al. (2020)
Merits: Emergency alert feature
Demerits: Limited integration with other services

4. Title: Mobile Application for Lost Item Tracking

Authors: P. Sharma et al. (2021)
Merits: User-friendly interface
Demerits: Limited scalability

5. Title: AI-Based Object Detection System

Authors: J. Redmon et al. (2016)
Merits: Real-time detection using deep learning
Demerits: Requires high computational resources

6. Title: IoT-Based Safety Monitoring System

Authors: K. Patel et al. (2022)
Merits: Real-time monitoring
Demerits: Requires hardware setup

7. Title: Cloud-Based Lost and Found Platform

Authors: S. Verma et al. (2020)
Merits: Scalable and accessible
Demerits: Data security concerns

8. Title: Facial Recognition for Missing Persons

Authors: L. Wang et al. (2019)
Merits: High identification accuracy
Demerits: Privacy concerns

9. Title: Smart Railway Safety System

Authors: M. Reddy et al. (2021)
Merits: Enhances passenger safety
Demerits: Limited features

10. Title: AI-Based Surveillance System

Authors: A. Jain et al. (2023)
Merits: Automated monitoring
Demerits: High cost

SYSTEM ANALYSIS

EXISTING SYSTEM

The existing lost and found systems in railway environments are primarily manual and lack technological integration. Passengers who lose items are required to report the incident at railway counters, where details are recorded in physical registers or basic digital systems. This process is time-consuming, inefficient, and often results in poor coordination between



different railway stations. Additionally, there is no centralized database to track lost and found items across multiple locations, making it difficult to match items effectively. Safety assistance systems are also limited, with passengers relying on emergency helplines or station authorities, which may not provide immediate response during critical situations. The absence of real-time tracking, automated matching, and digital communication reduces the effectiveness of these systems. As a result, the recovery rate of lost items is low, and passenger safety remains a concern, highlighting the need for a more advanced and integrated solution.

DISADVANTAGES

- Manual and inefficient process
- No centralized database
- Low recovery rate of lost items
- Lack of real-time alerts
- Limited safety features
- Poor coordination between stations

PROPOSED SYSTEM

The proposed system, **KHOJ**, introduces an intelligent and integrated platform for lost & found management and passenger safety assistance in railway systems. The system allows users to report lost or found items through a mobile or web application, where they can upload images and provide detailed descriptions. Using artificial intelligence techniques such as image recognition and data matching, the system automatically compares lost and found items to identify potential matches, significantly improving recovery rates. The platform is supported by a centralized cloud database, ensuring seamless data access across multiple railway stations.

In addition to lost and found services, the system includes a safety module that enables passengers to send emergency alerts, share their real-time location, and request immediate assistance from authorities. The system can also notify nearby security personnel and provide quick response mechanisms. The integration of modern technologies such as cloud computing, AI, and mobile applications ensures scalability, efficiency, and user convenience. Overall, the proposed system enhances passenger experience by providing a reliable, fast, and secure solution for both lost item recovery and safety assistance.

ADVANTAGES

- Real-time lost item tracking
- AI-based matching system
- Centralized database
- Emergency alert system
- Improves passenger safety
- User-friendly interface

IMPLEMENTATION

Data Collection

- User-submitted lost/found item data
- Images and descriptions

Preprocessing

- Image cleaning and resizing
- Data validation

Model Development

- Image recognition models
- Matching algorithms

Database

- Cloud-based storage



Application Development

- Mobile/Web app

Evaluation

- Matching accuracy
- Response time

METHODOLOGY

Step 1: User Input

Report lost/found item

Step 2: Data Processing

Store and preprocess data

Step 3: Matching

Apply AI-based matching

Step 4: Alert System

Notify users and authorities

Step 5: Safety Module

Send emergency alerts

Results:

Home Screen:

Admin Login:



This image shows the homepage of **KHOJ: A Lost & Found and Safety Assistance System for Railway Passengers**, designed to help passengers report lost items and access safety-related services. It provides login options for Railway Admin, Volunteers, and Users, enabling efficient

management of lost-and-found complaints and passenger assistance.

Login Screen:



This image displays the Railway Admin Employee Login Screen of the KHOJ system, where railway administrators can securely log in using their username and password. It allows authorized staff to manage lost-and-found reports, monitor passenger complaints, and coordinate assistance services efficiently.



This image shows the **Railway Admin Dashboard** of the KHOJ system, where the administrator can manage passengers, volunteers, and complaints through dedicated menu options. It serves as the central control panel for monitoring and coordinating lost-and-found and passenger assistance activities.



Passenger screen:



This image displays the Add Passenger Screen in the KHOJ system, which allows the Railway Administrator to register and manage passenger information within the platform. The screen provides options to add new passenger records, enabling efficient tracking, communication, and support for lost-and-found and safety assistance services.



This image shows the **Passenger Registration Confirmation Screen** of the KHOJ system after a new passenger has been successfully added by the Railway Administrator. The message "**Your ticket confirmed**" and "**Your ticket Id = 1**" indicates that the passenger's registration has been completed and a unique ticket ID has been generated for tracking lost-and-found requests and assistance services.

New volunteer Screen:



This image shows the Add New Volunteer Screen in the KHOJ system, where the Railway Administrator can register a volunteer by entering details such as username, password, contact number, email ID, address, and user type. After submitting the form, the volunteer is added to the system and can assist passengers with lost-and-found services and safety-related support.

View volunteer Screen:



This image shows the **Volunteer Registration Confirmation Screen** of the KHOJ system after a new volunteer has been successfully added by the Railway Administrator. The message "**New volunteer details added**" confirms that the volunteer's information has been stored in the database and the volunteer is now available to assist passengers with lost-and-found and safety support services.



View complaints:



This image shows the View Volunteers Screen in the KHOJ system, where the Railway Administrator can view the details of all registered volunteers. The table displays volunteer information such as username, password, phone number, email ID, address, and user type, allowing administrators to manage and monitor volunteer records efficiently.

CONCLUSION

The KHOJ system for lost and found management and safety assistance in railway environments provides an innovative and effective solution to address the challenges faced by passengers. By integrating artificial intelligence, cloud computing, and mobile technologies, the system offers a comprehensive platform that enhances both convenience and safety. The AI-based matching mechanism significantly improves the chances of recovering lost items, while the centralized database ensures efficient coordination across multiple railway stations. Additionally, the safety assistance module enables passengers to send real-time alerts and receive immediate support during emergencies, thereby improving response time and overall security.

Despite certain challenges such as data privacy, system maintenance, and the need for reliable internet connectivity, the benefits of the proposed system outweigh its limitations. Future enhancements may include advanced facial recognition for missing persons, integration with railway surveillance systems, and the use of IoT devices for better tracking. Overall, the KHOJ system demonstrates the potential of technology-driven solutions in improving public transportation services and ensuring a safer and more efficient travel experience for railway passengers.

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