**The DisasterAid Navigator**

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## ABSTRACT

The Disaster Aid Navigator is a web application designed to assist individuals in disaster-prone areas by providing real-time geolocation services to locate nearby hospitals, shelters, and other critical resources. Utilizing either OpenStreetMap data or Google Map API and disaster mapping, the platform offers optimized and safe routes, ensuring users can quickly access essential facilities during emergencies. The tool aims to address the gap in disaster management systems by offering timely and accurate information for emergency response.

**Keywords:** Disaster management, geolocation, OpenStreetMap, emergency response, safe routes, hospitals, shelters, disaster-prone areas.

## List of Abbreviations/Acronyms

OSM: Open Street Map

API: Application Programming Interface

GPS: Global Positioning System

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## CHAPTER 1

## INTRODUCTION

Natural disasters like earthquakes, floods, hurricanes, and wildfires usually occur without warning, thereby leaving the members of the community in shock and distress. The most vital issue to be encountered during such disasters is a lack of proper and timely information regarding medical facilities. Many people have to search for nearby hospitals, clinics, first-aid stations, and rescue teams, which may lead to late treatment and increase causalities.

This project, therefore, tries to solve these challenges by developing an app that informs about nearby medical services in real-time during such calamities. The app would be an important resource for individuals needing urgent medical care.

## 1.1 Background

In recent times, Nepal has been experiencing many natural disasters like flood and landslides where numerous people have had to lose their lives due to the unavailability of immediate medical attention. The presence of a robust platform where people could have access to the information of nearby medical services would have been proven to be very beneficial.

### 1.2 Statement of the Problem

In emergencies, the biggest problem is usually brought forth by people's unawareness of where other health facilities are located. This lack of knowledge leads to serious delays before getting to the appropriate care; sometimes this may worsen the health complications and even cause unnecessary loss of life in extreme conditions. While digital tools and information systems are increasingly used, little, if any, accessible platforms are available to provide accurate and current information on the location of the nearest health post, hospital, or emergency services. The need to address this issue is critical to reducing risks from delay in medical interventions, especially in the most underserved and rural areas that have limited healthcare infrastructure. This need to bridge the information gap is all the more urgent because of its potential to save lives and improve health in an emergency.

### 1.3 Project objective

To develop an efficient and accessible system that provides real-time information about nearby healthcare facilities and emergency services, ensuring timely medical assistance during emergencies.

1. To identify the key challenges individuals face in locating nearby healthcare facilities during emergencies.
2. To design and implement a user-friendly platform that provides accurate and real-time location-based information about health posts, hospitals, and emergency services.

## CHAPTER 2

## SYSTEM DESIGN AND ARCHITECTURE

The system architecture of the project is designed to ensure user accessibility and reliability, even during high-demand situations such as natural disasters. The following components will be part of the system:

* Geolocation Services: The system will use GPS or IP-based geolocation to identify the user's location and show the closest hospitals and safe zones.
* Database: A central database will store information about healthcare facilities, safe zones, and evacuation routes. This will be updated regularly to ensure accuracy.
* Web Interface: A responsive web interface will allow users to quickly access the system and view the required information in an easy-to-understand format.

**Methodology:**  
We will adopt an agile development methodology, which allows for iterative testing and refinement of the system. This will ensure that the final product is well-suited to the needs of disaster-affected individuals. The development process will follow these phases:

1. Requirement Gathering
2. System Design
3. Prototype Development
4. Testing and Evaluation

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## CHAPTER 3

## EXPECTED OUTPUT

3.1 System Features

* Real-time location tracking and display of nearby hospitals and safe zones.

3.2 Data and Information

* A comprehensive database of hospitals, medical centers, health posts, and emergency shelters across disaster-prone areas in Nepal.

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## CHAPTER 4

## CONCLUSION

In conclusion, the Disaster Aid Navigator aims to fill a critical gap in disaster management by offering a web-based platform that empowers individuals with real-time, reliable information during emergencies. By leveraging geolocation technology, OpenStreetMap data , and optimized routing algorithms, this system provides users with the fastest and safest routes to nearby hospitals, shelters, and emergency services. The project is designed to be user-friendly, ensuring accessibility even in high-stress situations.