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# SEVA-ROHI: Instant Help, Immediate Hope

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***Abstract :*** Speed is one of the basic reasons for vehicle accident. Many lives could have been saved if emergency services could get accident information and reach in time. This project deals with accident detection system when the accident occurs it uses various components and alerts the Rescue team for help. An efficient automatic accident detection with an automatic notification to the emergency service with the accident location is a prime need to save the precious human life. The proposed system deals with accident alerting and detection. It reads the exact latitude and longitude of the vehicle involved in the accident and sends this information to nearest emergency service provider. The goal of the project is to detect accidents and alert the rescue team in time. The "Seva-Rohi" project aims to tackle critical challenges in emergency healthcare by introducing a dedicated mobile application. This app's primary objectives are to facilitate ambulance dispatch and cooperate with traffic authorities to guarantee unimpeded ambulance passage. In doing so, it aims to bridge the current gaps in emergency medical services, recognizing that swift access to healthcare can be a matter of life and death in medical emergencies.

***IndexTerms*** **– Emergency, Accident detection, Ambulance, longitude, latitude.**

## I. INTRODUCTION

### INTRODUCTION

The Seva-Rohi project is a technologically advanced initiative aimed at transforming the approach to managing medical emergencies, specifically targeting enhancements in ambulance services. In many regions around the world, these critical components of emergency response often face significant challenges, including insufficient resources, lack of coordination, and inadequate infrastructure. As a result, precious time is lost in the process of dispatching and navigating ambulances, which can have dire consequences for patients in need of immediate medical attention. The review on "Seva-Rohi" mobile application serves as a central platform to address these challenges and streamline the coordination and dispatch of ambulances. By connecting with local healthcare facilities, emergency services, and trained medical personnel, the application ensures a swift and efficient response to emergency calls. This centralized system allows for better communication, resource allocation, and real-time tracking of ambulances, ensuring that the nearest available ambulance is dispatched to the emergency site in the shortest possible time. One of the most innovative aspects of the research is its collaboration with traffic authorities. By diminishing travel duration and mitigating hold-ups, the app substantially boosts the chances of delivering prompt medical aid, a critical factor in emergency scenarios where it could mean the disparity between life and death. Beyond a mere technological fix, the application serves as a testament to the potency of innovation, cooperation, and a collective dedication to enhancing healthcare and emergency response provisions. By leveraging cutting-edge technology and forging strong partnerships with traffic authorities, the initiative aims to create a safer, more responsive environment for those in need of urgent medical attention. The "Seva-Rohi" project is not just about saving time; it's about saving lives.

## II. REVIEW OF LITERATURE SURVEY

### 2.1 Literature Survey

The following chapter is a literature survey of the previous research papers and research which gives detailed information about the previous system along with its advantages and technology used.

Dr. C. K. Gomathy, K Rohan, Bandi Mani Kiran Reddy and Dr. V Geetha [1], The proposed system aims to enhance road safety by promptly alerting nearby medical centers and contacts about accidents involving two-wheel vehicles. It utilizes an accelerometer attached to the vehicle to detect tilting and a heartbeat sensor to assess the severity of the accident. An Android application sends notifications to nearby medical centers and contacts while saving real-time incident locations. For car collisions,

accelerometers are used, and GPS and GSM modules report location and other details to emergency services. Upon accident detection, the system uses GPS to pinpoint the location and GSM to inform ambulance and police. Implemented on an Arduino board, the system reduces accident casualties effectively.

Mohammad A. R. Abdeen, Mohamed Hossam Ahmed, Hafez Seliem, Tarek Rahil Sheltami, Turki M. Alghamdi, and Mustafa El-Nainay [2], The document introduces a smart ambulance system using IoT and real-time data for efficient emergency medical services. It prioritizes minimal response, travel, and waiting times, employing an algorithm considering road traffic and hospital conditions. It discusses the growing demand for advanced technologies in emergencies and reviews literature supporting smart ambulance systems' benefits. Objectives focus on improving patient care. Algorithm design, modeling, and performance analysis demonstrate effectiveness in optimizing response times. Comparative analysis confirms superiority over previous algorithms. The conclusion emphasizes the transformative potential of smart ambulance systems and suggests future directions, including considering urgency levels, specialist availability, and smart diagnostics for continuous innovation in emergency care.

Sanketh B Prabhu, U R Ravithejaswi, Suraksha Shetty, Spoorthi S Hegde, Prasad S M [3], The paper introduces the use of NavIC, India's indigenous navigation technology, for ambulance allocation. NavIC tracking units constantly send ambulance location data to a server and database. Using distance matrix API, the system assigns the closest ambulance with the fastest response time to the user. The ambulance driver receives an SMS with the user's location, while the user is informed of the estimated arrival time and nearest hospital using the Haversine formula. Real-time databases log driver and hospital details, alongside modified coordinate values. Geolocation API captures and stores user locations during ambulance booking. Ambulance allocation is based on response time comparison, with the selected ambulance driver notified via SMS using API-based service. Navi-track 258 enables precise ambulance tracking by providing location coordinates.

Abhishek Jamadar, Sunil Jadhav, Rashmi Gurav, Prof. Sachin Desai [4], The project aims to develop a mobile application facilitating communication between hospitals during emergencies in Maharashtra, India. With mass casualties and limited resources during disasters, efficient hospital communication is crucial. The app enables patients or their relatives to locate nearby hospitals and available resources, improving access to healthcare services during emergencies. The research focuses on addressing the lack of communication and resources in hospitals, particularly in areas with inadequate infrastructure. By highlighting hospital availability and doctor specialties, the app enhances accessibility to appropriate medical care. The widespread use of mobile phones, especially during the pandemic, underscores the relevance and potential impact of such a solution.

Vishnu Sai Bhonsle, Vamsi Krishna Panchagnula, Sailaja Thota,Venkata Siva Varun Kumar Perumalla, Prudhvi Venkata Tarun Sanka [5], The document talks about a new system for booking ambulances when there's an emergency. It's tricky because there are lots of different ambulance companies with different phone numbers, making it hard to get help quickly. So, the authors came up with a plan to use GPS (like what's in your phone) to find the closest hospital and send an ambulance there fast. They made apps for phones andsmartwatches that people can use to call for help. Hospitals also have a website where they can see who needs help and send ambulances. The ambulance drivers have their own app too. The document explains step-by-step how everything works, from the apps people use to the technical stuff behind the scenes. They also tested everything to make sure it works well. In the end, they found that their system works smoothly and could really help in emergencies. They even talk about what they could do next to make it even better, like making versions for different kinds of phones and adding more features to smartwatches.

Aayush Doshi, Bhavya Shah, Jubin Kamdar [6], The project aims to address increasing road accidents and inadequate emergency response by utilizing accelerometer and vibration sensors to detect vehicle accidents. In case of a serious accident, the system sends an alert message containing GPS coordinates to the police or rescue team via GSM Module. This system can be crucial in remote areas where accidents occur but go unreported. It prioritizes passenger safety and aims to save lives by ensuring swift emergency response. The focus is particularly significant in countries like India, where road safety is a pressing social issue. The proposed system automatically detects accidents and alerts the nearest medical facilities using GPS and GSM modules.

Kumar.P, Priya.L, A.Sathya [7], The proposed framework ensures rapid emergency vehicle dispatch by assessing nearby ambulances using a route recommendation algorithm based on distance, Google traffic data, and Raspberry Pi-controlled traffic lights. Upon user request, the system selects the nearest available ambulance, establishes the shortest route using GPS tracking, and dynamically adjusts traffic lights to create a green corridor. Raspberry Pi modules attached to traffic lights regulate signal timing based on traffic density, facilitating smoothambulance passage. CCTV cameras capture traffic images for signal adjustment, ensuring efficient ambulance routing.

Prof. Shyamsundar Magar, Vinayak Jadhav , Omkar Raut [8], The proposed application aims to provide timely emergency medical response in India, where a person dies every second. It focuses on reducing the time gap between patient request and ambulance arrival by allowing patients to book hospital rides through the app. Mumbai, a bustling city facing transportation challenges, especially in emergencies, underscores the need for an efficient response system. The project seeks to address this by facilitating communication between hospitals, ambulances, and patients, leveraging internet connectivity and the success of mobile cab booking services. The goal is to ensure swift and effective medical care, minimizing health complications and fatalities resulting from delayed response.

Tugay Akca, Ozgur Koray Sahingoz, Emre Kocyigit and Mucahid Tozal [9], This project suggests a sophisticated ambulance management system tailored for smart cities, harnessing modern technologies such as the Internet of Things. It aims to improve emergency medical response by locating the closest ambulance and directing it to the patient when needed. The system

maintains hospital density information in a database for routine operation and tracks ambulance locations on the network. By prioritizing the fastest possible response time and providing precise initial care, the system significantly contributes to the medical field in smart cities. Its primary objectives include ensuring quick emergency response and efficiently transferring patients to the most suitable hospital.

Shivam Kumar Kashyap, Sainandini Mishra, Nagaraj M. Lutimath [10], The study introduces an Android smartphone application called Jeevan Jyoti to address the need for efficient ambulance services during medical emergencies. This app aims to streamline ambulance booking and medical assistance from hospitals by providing a user-friendly interface and push notifications for updates. When an ambulance is requested through the app, details are sent to nearby hospitals, including the type of ambulance needed, number of victims, symptoms, and medical reports. This system improves communication between patients and hospitals compared to traditional hotline methods, reducing errors like mispronunciation and inaccurate address representation. The app facilitates successful ambulance scheduling and ensures necessary medical care both inside and outside the vehicle.

Helmy Faisal Muttaqina, Ari Purno Wahyu Wibowo [11], The paper outlines the creation of a smart ambulance platform based on IoT, incorporating IoT devices, a service-centric architecture, and an interface on the Android platform to improve the performance of ambulance services. In 2018, the City Government of Cimahi allocated one official car unit to each village for public medical transportation, known as the Standby Vehicle or Alert Service Vehicle. Citizens needing this service contact the Alert Service Team via SMS or phone call, who then dispatch the vehicle to the patient's location. To improve efficiency, an IoT-based Smart Ambulance Platform will be implemented, allowing citizens to request service via an Android app. The driver receives service notifications through the app, and the platform locates nearby available vehicles for quick response. Real-time monitoring enables frequent evaluations of service activities.

Nicky Kattukkaran, Mithun Haridas T P, Arun George [12], The proposed technology aims to address the rising fatalities from traffic accidents, particularly involving two-wheelers, by promptly alerting nearby medical facilities of the severity of the incident. Using sensors, it detects accidents and assesses injuries, then notifies the nearest medical center for immediate response. Additionally, it alerts friends and relatives of the incident. The system includes two main modules: one to detect if the vehicle has fallen, and another consisting of an MSP430 microcontroller, buzzer, and Bluetooth module to facilitate communication. This technology is a result of extensive research on accident detection and alert systems, prioritizing swift medical assistance to reduce fatalities on the road.

Bassey Isong, Nosipho Dladlu and Tsholofelo Magogodi [13], This essay highlights challenges faced by rural communities in Mafikeng, South Africa, particularly regarding access to basic healthcare services like medical ambulance transportation during emergencies. Issues include inadequate communication, poor road infrastructure, disorganized addresses, and delayed ambulance responses leading to avoidable deaths. While information and communication technologies (ICTs) have revolutionized various sectors globally, their full potential has not been realized in rural healthcare. Despite widespread availability of mobile phones, rural areas still lack adequate healthcare access due to transportation constraints. With 46% of South Africans residing in rural areas but only 12% of specialists and 19% of nurses serving them, there's a pressing need to balance healthcare supply with population needs.

Monica Chhabria, Latika Wadhwa, Shruti Dhumale, Omkar Patinge, Gresha Bhatia [14], This document discusses a novel system aimed at improving and expediting ambulance services. The goal is to use technology to help ambulances get to emergencies quicker. The system has different parts like registering users, booking ambulances, and managing requests. It uses things like GPS and maps to find the fastest route for ambulances and works with traffic control to avoid jams. The document explains the problems with the current ambulance system, like delays and managing lots of calls. It compares this new system with others that do similar things. Each part of the system, like registering users and booking ambulances, is explained in detail. Overall, this system aims to make ambulance services faster and more efficient by using technology and coordinating with traffic control. They'll also track how well the system works by looking at things like how many requests it handles and how quickly ambulances get to emergencies.

Matthew J Booker, Ali R G Shaw, Sarah Purdy [15], The document presents a systematic mapping review of literature examining the factors driving patients with 'primary care sensitive' issues to seek assistance from ambulance services. The review aims to categorize and summarize the evidence on this topic to inform future urgent care service design. The study methodology involves conducting searches across multiple databases, including MEDLINE, EMBASE, PsychINFO, CINAHL, among others. Additionally, it includes manual searches through prominent journals and reaching out to colleagues for pertinent unpublished reports and 'grey literature'. The review identified 1424 documents in the initial searching process, resulting in 31 papers relevant to the review. The document also delves into the creation of a framework, data extraction process, quality evaluation, and identifies future steps required to accurately define 'primary care sensitive' issues within the unique realm of ambulance services. The review emphasizes that comprehending the root causes of ambulance utilization for primary care concerns is essential for delivering sustainable, safe, and pertinent care.

**2.2 Analysis Table**

Table 1 Analysis Table

| Title | Summary | Advantages | Tech stack |
|---|---|---|---|
| 1.Accident Detection And Alert System.[1] | The proposed system aims to alert nearby medical center about the accident and provide the needed medical help. The accelerometer that is attached to the vehicle will sense the tilt of the vehicle and and heartbeat sensor on the user's body senses the abnormality of the heartbeat and understand the seriousness of the accident. | The benefits of this system are low cost, secure and simple to use. | GPS, Accelerometer, GSM. |
| 2. A Novel Smart Ambulance System Algorithm Design, Modeling, and Performance Analysis.[2] | The document outlines a smart ambulance system utilizing IoT for rapid emergency response, optimizing patient outcomes through efficient algorithms that consider traffic conditions. | smart ambulance is a very promising technology that can revolutionize the emergency service by sending real-time images and videos data between ambulance and emer-gency department before patient arrival. | IOT devices. |
| 3. NavIC Driven Dynamic Ambulance Allocation and Tracking.[3] | The paper discusses the use of NavIC the Indian navigation technology. To allocate ambulances, NavIC tracking units are employed to monitor their movements. These units continuously transmit location data to both the server and the database. | The realtime database developed using Firebase was effectively able to store and update the ambulance and user details with minimal delay. | NavIC, Firebase Database, NGINX Web Server |
| 4. HealthMe: An Android App for Interlinking of nearby Hospitals for Resource Sharing in Emergency.[4] | Our application aims at building a communication bridge between Hospitals for Resource sharing in Emergency situations where a patient/relative of the patient can find nearby hospitals and resources available in that specific hospital. Our goal is to provide appropriate health care services during emergencies to the patients. | Hospitals can share information about their available resources, such as beds, medical supplies, and staff, ensuring that resources are allocated where they are needed most efficiently. | ASP.NET, My SQL, SQL Server |
| 5. Ambulance booking system using GPS[5] | The document outlines a GPS-based emergency ambulance booking system using smartphone and smartwatch apps for users and a website for hospitals to coordinate dispatch. Thoroughly tested, the system proves effective in emergencies with plans for future enhancements. | The system aims to address the challenges associated with booking ambulances, such as the difficulty in finding nearby ambulances manually, especially during emergencies. By utilizing technologies like Global Positioning System (GPS) and the handiness of mobile devices, the system offers several advantages. | GPS technology, |
| 6. Accilert – Accident Detection And Alert System.[6] | A serious accident can be identified by monitoring the data from the accelerometer and the vibration sensor. The alert message, containing latitude and longitude data from the GPS module, is subsequently transmitted to either the police control room or a rescue team through the GSM Module. | It is highly economic and less expensive. | Accelerometer, GSM, GPS, Arduino UNO |

| | | | |
|---|---|---|---|
| 7. Smart traffic light system for emergency ambulance using IOT.[7] | The proposed framework aims to ensure that the client receives an ambulance as swiftly as possible, irrespective of traffic congestion or delays indicated on the map. | Traffic signal system for smart ambulance causes the client to get an emergency vehicle as quickly as time permits regardless of how clogged or postponed the google map shows | Raspberry PI, CCTV cameras. |
| 8. Ambulance Booking Application for Emergency Health Response, Blood Inventory.[8] | The central objective of this project is to reduce the time between a patient's emergency and the arrival of an ambulance. It's designed to be an efficient, straightforward, and user-friendly emergency response system equipped with essential features. | Patients or healthcare providers can easily request an ambulance with just a few clicks or taps, thereby decreasing the response time for assistance. | Firebase, Google maps API |
| 9. Intelligent Ambulance Management System in Smart Cities.[9] | This project suggests an intelligent ambulance management system tailored for implementation in a smart city environment. The operator locates the closest ambulance and directs it to the patient if the patient requires an ambulance. | The system dynamically tracks the ambulances' coordinates, and it utilizes Google Maps, a third-party service, to compute the shortest route to the location of the emergency. | Google Maps, firebase, No SQL |
| 10. Jeevan Jyoti Mobile Application for Ambulance Service.[10] | In this study an Android smartphone application called Jeevan Jyoti is designed to meet the demand for appropriate ambulance services during medical emergencies. created with the intention of successfully facilitating essential ambulance booking medical assistance from the hospital and the ambulance. | enables to overcome the disadvantages in the existing system by providing the exact location of the patient through google maps along with patient's vital information | Android studio, Google map API, Blynk cloud. |
| 11. Designing an IoT-Based Smart Ambulance Platform in Cimahi City.[11] | This paper introduces an IoT-driven smart ambulance platform integrating IoT devices, service-centric architecture, and an Android-based interface to optimize ambulance service performance. | The proposed platform is intelligent integration of several systems, including IoT-based controller systems installed inside ambulance vehicle, data processing systems on servers (provided an API connected to IoT and Android devices), and an Android-based system installed on a user's smartphone. | GPS, QR code, |
| 12. Intelligent Accident Detection and Alert System for Emergency Medical Assistance.[12] | The technology will determine whether an accident has occurred and the severity of the driver or passenger's injuries. The system will look for the closest medical facility and alert them of the occurrence once the decision to declare the accident severe has been made. | Accident detection and alert systems are particularly pertinent nowadays, and this project strives to create an affordable solution for the benefit of society. | Heartbeat sensor, accelerometer, Bluetooth |
| 13. Mobile-Based Medical Emergency Ambulance Scheduling System.[13] | It is aim at improving ambulance transportation availability and other services when requests are made without having to call or wait for long time. | Online booking systems often include two-way communication between the patient or healthcare provider and the ambulance crew. | Google maps, GPS, Cloud based server, Dijkstra's algorithm, Internet of Things(IOT) technologies. |
| 14. Intelligent Ambulance Fleet | The document "Intelligent Ambulance Fleet Management System" addresses the challenges | It aims to reduce the reaction time in emergency situations by leveraging | GIS, GPS, Google Maps API |

| | | | |
|---|---|---|---|
| Management System[14] | faced by ambulance service providers in responding to medical emergencies and proposes a comprehensive system to improve emergency response. | pre-registered information and real-time location data, thus improving the effectiveness of ambulance services. | |
| 15. Why do patients with 'primary care sensitive' problems access ambulance services? A systematic mapping review of the literature[15] | The document presents a systematic mapping review of literature investigating the factors that lead patients with "primary care sensitive" issues to seek assistance from ambulance services. It encompasses a broad range of qualitative, quantitative, and mixed methods studies and reviews with an interpretive element. The review identifies and categorizes key factors influencing ambulance use for primary care sensitive problems, providing valuable insights for future urgent care service design. | The advantages of this document include its comprehensive and systematic approach to analyzing the factors influencing the use of emergency ambulance services for primary care sensitive problems | Reference Management Software, Search Databases such as MEDLINE, EMBASE, PsychINFO, CINAHL |

## III. RESEARCH METHODOLOGY

The system's methodology starts with data collection, where images and videos are gathered and labeled for training an accident detection model. This model, based on YOLO technology, is then trained and tested using machine learning algorithms. Once trained, it's integrated into an Android application as a tflite file, enabling live accident detection through the device's camera.When an accident is detected, notifications are promptly sent to nearby hospitals for ambulance booking and to police stations for necessary action. The system utilizes Google Maps to pinpoint nearby hospitals and police stations based on the user's real-time location, which is tracked using GPS technology. Additionally, notifications can be sent to toll plazas to inform them about incoming ambulances, helping to clear traffic swiftly. This streamlined approach aims to expedite emergency response and improve overall road safety.

### 3.1 Block diagram

A block diagram is a diagram of a system in which the principal parts or functions are represented by blocks connected by lines that show the relationships of the blocks.

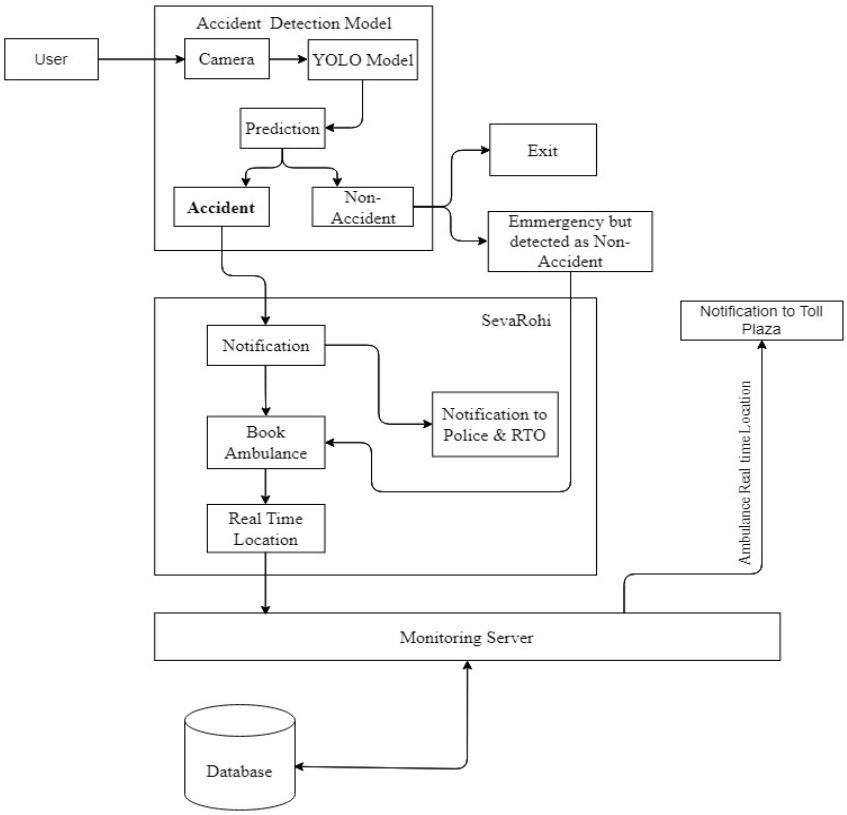


Fig 3.1 Seva-Rohi Block Diagram

In Figure 3.1, an Accident Detection system uses CCTV and Video Processing for real-time monitoring. It employs the YOLO Seva-Rohi model to detect accidents in video feeds, triggering notifications to Toll and Police, booking ambulances, and providing real-time location details. The system integrates with a hospital database, manages registrations and uploads, all overseen by a Monitoring Server for real-time updates.

## IV. RESULTS AND DISCUSSION

### 4.1 Results of Accident Detection Model Training


Fig No. 4.1


Fig No.4.2

Fig 4.1 depicts a damaged car with a crumpled hood in a parking lot, indicating a car crash and suggesting that an accident has been detected., while Fig 4.2 represents the detection of a non-accident scenario.


Fig No. 4.3


Fig No. 4.4

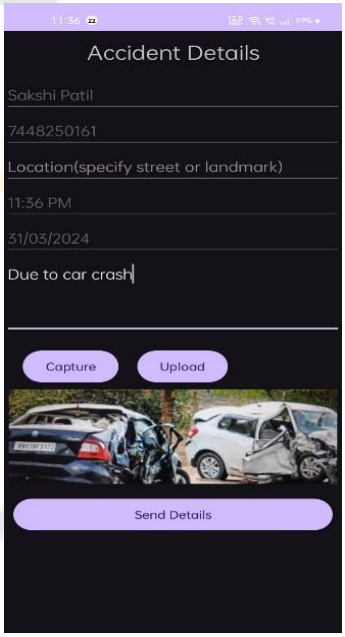


Fig No. 4.5

Fig 4.2 displays a sign-up page featuring fields for users to input their name, email, phone number, username, and password. Fig 4.3 showcases a login page where users enter their username and password, with an additional "Sign Up" button for new registrations. Fig 4.4 presents an accident report form with fields for the user's name, phone number, location, and accident details, along with a "Send Details" button for submitting the report.


Fig No. 4.6


Fig No. 4.7


Fig No. 4.8

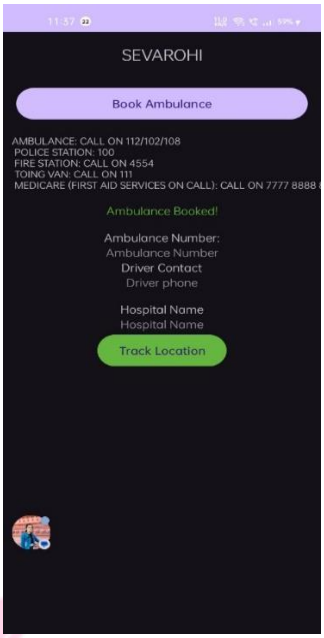


Fig No. 4.9

Fig 4.6 shows a list of locations, likely for emergency services such as hospitals. Fig 4.7 displays a list of hospitals or medical facilities. Fig 4.8 reveals a list of nearby Police Stations. Fig 4.9 includes emergency contact numbers for services like ambulance, police, fire station, toing van, and first aid. It confirms ambulance booking with details like the ambulance number, driver contact, and hospital name, along with a prompt to track the ambulance's location.

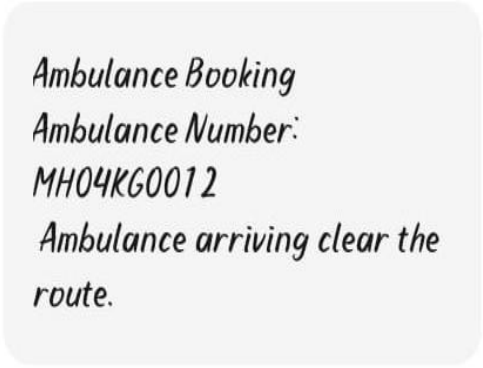


Fig No. 4.10

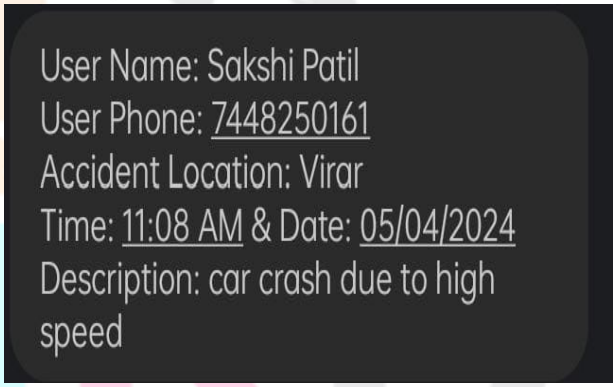


Fig No. 4.11

Fig 4.10 represents a whiteboard message "Ambulance Booking Ambulance Number: MH04KG0012 Ambulance arriving clear the route," likely indicating booked ambulance MH04KG0012 en route, reminding people to clear the route for smooth arrival, typically in a hospital. Fig 4.11 depicts a report message about an accident. Sakshi Patil reported a car crash in Virar on 05/04/2024 at 11:08 AM, attributing high speed as the cause. The user's phone number is 7448250161.

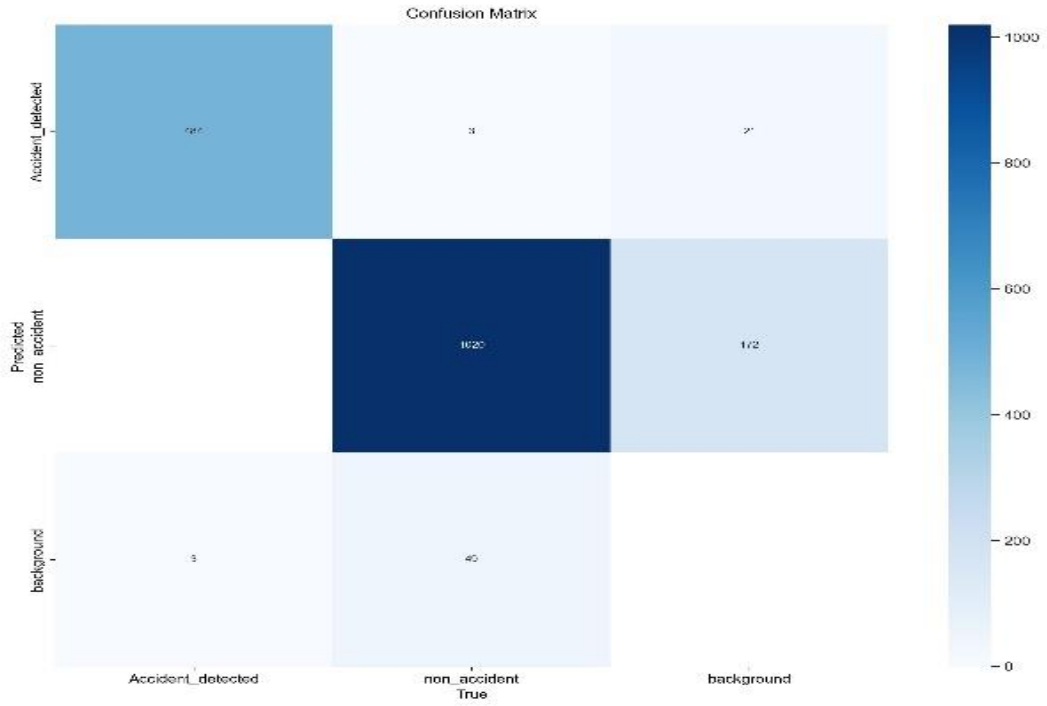


Fig No. 4.12

Fig No. 4.12 "The provided context appears to be a confusion matrix for a binary classification problem, where the model is predicting whether an accident has occurred (Accident_detected) or not (non-accident). The matrix shows the number of true positives (3), true negatives (800), false positives (1/2 or 0.5), and false negatives (1020). A true positive is when the model correctly predicts an accident, a true negative is when the model correctly predicts no accident, a false positive is when the model incorrectly predicts an accident, and a false negative is when the model incorrectly predicts no accident. The performance of the model can be evaluated using various metrics calculated from this confusion matrix, such as accuracy, precision, recall, and F1 score. "

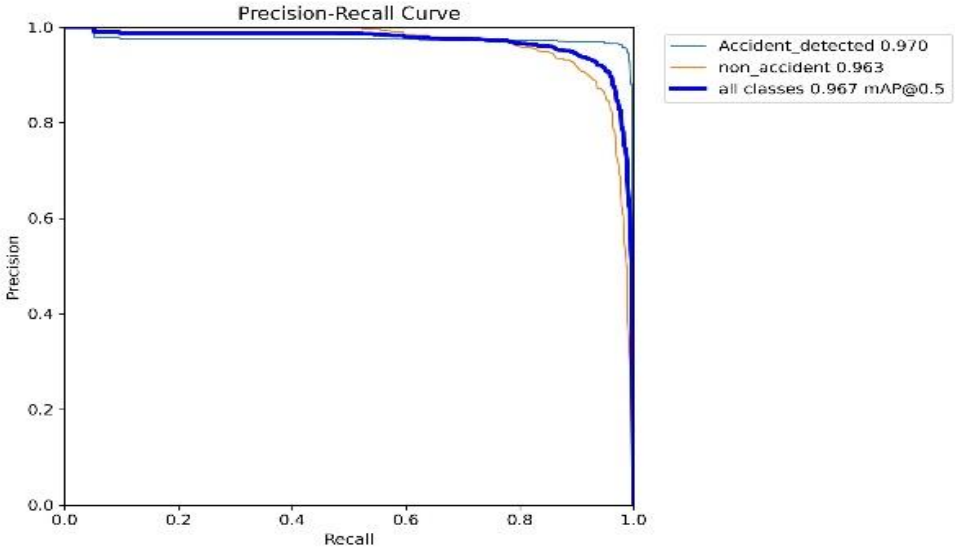


Fig No. 4.13

Fig No. 4.13 "The given context shows the Precision-Recall curve for a binary classification problem, where the classes are "Accident detected" and "non-accident". The curve plots the precision (y-axis) against recall (x-axis) for different classification thresholds. The precision for "Accident detected" is 0.97 and for "non-accident" is 0.963, while the recall for "Accident detected" is 0.8 and for "non-accident" is 1.0. The average precision (MAP@0.5) for all classes is 0.967."

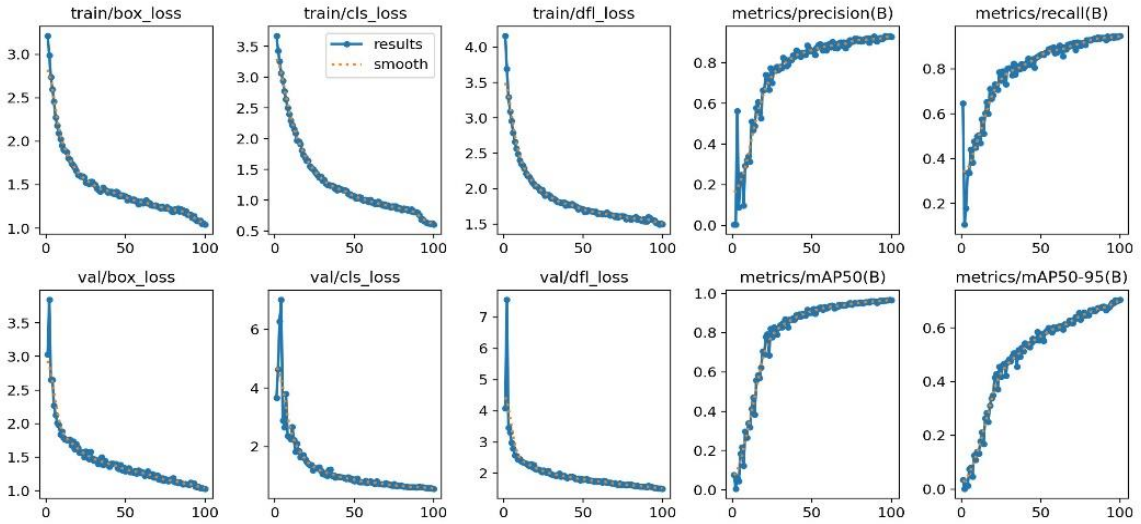


Fig No. 4.14

Fig 4.14 presents a machine learning training log for an object detection model. It details the training and validation losses for bounding box regression (box_loss), classification (cls_loss), and directional fitting (dfl_loss) components. It also includes precision and recall metrics for class "B." The log covers 100 training iterations with a learning rate of 0.0005 and a batch size of 32. The losses generally decrease during training with some fluctuations, while precision and recall for class "B" remain relatively stable. The model seems to be learning to detect objects accurately and efficiently.

## V. CONCLUSION

The "Seva-Rohi" project emerges as a ray of hope in the time of emergency healthcare. It recognizes the critical importance of timely access to medical assistance in life-threatening situations and acknowledges the shortcomings in our current systems. "Seva-Rohi" is a vital application that plays a crucial role in enhancing road safety by detecting accidents and immediately alerting emergency services. Its innovative technology has the potential to save lives and reduce the severity of accidents, making it an invaluable tool for modern road users.

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