

# **SafeGuard : A Safe Route Recommendation System**

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**Abstract:** *The proposed system aims to provide users with the safest possible route from the source to the destination by analyzing potential risks and vulnerabilities along different paths. The system collects and processes real-time data such as crime reports, traffic conditions, and user-reported incidents to evaluate the safety level of available routes. Based on this analysis, it recommends the most secure route while avoiding high-risk areas. If new threats or incidents are detected during navigation, the system dynamically reassesses the situation and reroutes the user to ensure safe travel. Additionally, the system visualizes incident data through live heatmaps to help users make informed travel decisions. In recent years, ensuring personal safety during travel has become an important concern, especially in urban environments where crime incidents, traffic congestion, and unexpected emergencies can occur frequently. Traditional navigation systems mainly focus on identifying the shortest or fastest routes without considering safety-related factors. This limitation may expose users to unsafe areas or potential risks while traveling. To address this issue, the proposed system, SafeGuard, introduces an intelligent safety-aware navigation approach that prioritizes user security while recommending travel routes. The SafeGuard system gathers and analyzes real-time data from multiple sources, including crime reports, traffic conditions, and user-reported incidents. By processing this information, the system evaluates the risk levels associated with different routes between the source and destination. Based on the analyzed data, the system suggests the safest possible route rather than simply the shortest path. In addition, the system continuously monitors real-time updates, allowing it to dynamically reroute users if new threats or incidents occur during the journey..*

**Keywords:** Safe route, Google Maps, Crime-rate, Hot-spot, Recommendation

