# EYES ON THE STREET: A REAL-TIME REPORTING APP FOR IMPROVED PUBLIC SAFETY

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DOI: https://doi.org/10.5281/zenodo.11545795

**Abstract:** In recent years, there has been a growing demand for innovative solutions to enhance public safety and bridge the gap between citizens and law enforcement agencies. "Eyes on the Street" addresses this need by introducing a real-time reporting app designed to empower citizens to report crimes they witness firsthand, thereby facilitating quicker response times and more efficient crime management. The web-based application provides a user-friendly interface that is accessible to anyone with internet connectivity. Using HTML, CSS, Bootstrap, JavaScript, PHP/Laravel, and MySQL database technologies, the system allows users to submit detailed accounts of the incidents they observed, including descriptions and relevant multimedia evidence. Key features include streamlined reporting processes, secure data transmission, and administrative oversight for verifying and responding to reports. Administrators, typically representing law enforcement or crime control agencies, have access to a dashboard where they can review incoming reports, verify their authenticity, and take appropriate actions. Eyes on the Street aims to create safer environments and enhance public trust in law enforcement efforts by harnessing the collective vigilance of citizens and fostering closer collaboration between communities and crime control agencies. This research contributes to the evolving landscape of civic technology by leveraging digital platforms to empower individuals and strengthen the fabric of public safety.

**Keywords:** Authentication, Crime Reporting, MySQL, PHP, Real-Time Reporting, Validation Mechanisms, Web Application, Web Technologies.

## 1. INTRODUCTION

In urban landscapes worldwide, the concept of the "eyes on the street" has long been recognized as a crucial factor in promoting public safety. When citizens actively observe and report suspicious activities, they become invaluable partners in crime prevention efforts (Jayden, 2024). However, traditional methods of reporting crimes often suffer from inefficiencies and delays, hindering swift response and resolution. Despite the best efforts of law enforcement agencies, gaps in traditional crime reporting systems persist, posing significant challenges to effective crime prevention and response. One of the primary issues plaguing conventional reporting mechanisms

is accessibility. Many citizens find it cumbersome and time-consuming to navigate the complex bureaucratic processes required to file a report (Jayden, 2024). This bureaucracy may it be filling out lengthy forms, waiting in long queues at police stations, or dealing with indifferent or overburdened personnel, the barriers to reporting crimes can discourage individuals from coming forward with vital information.

Furthermore, fear of reprisal or retaliation from criminals often deters witnesses from reporting the crimes they observed. This reluctance to speak out can lead to a culture of silence, allowing criminal activities to persist unchecked and emboldening perpetrators to operate with impunity. In communities where trust in law enforcement is low, residents may hesitate to cooperate with authorities, further impeding efforts to combat crime effectively (Jayden, 2024).

Another significant challenge arises from the sheer volume of potential witnesses in densely populated urban areas (Singh & Mishra, 2024). Traditional reporting channels are overwhelmed by the influx of reports, resulting in delays in response times and investigative efforts. This bottleneck effect hampers law enforcement's ability to promptly address emerging threats and undermines public confidence in the efficacy of reporting systems. Moreover, the limitations of traditional reporting methods extend to the accuracy and completeness of the information provided (Singh & Mishra, 2024). In the heat of the moment, witnesses might struggle to recall critical details and then misinterpret the events they have witnessed, leading to inaccuracies in their reports. Without access to real-time, verifiable information, law enforcement agencies may face challenges in prioritizing and allocating resources effectively (Corpuz, Almero, Mendoza, & Garcia, 2023). The shortcomings of traditional crime reporting systems, including accessibility barriers, fear of reprisal, overwhelming volume, and accuracy, pose significant obstacles to effective crime prevention and response efforts. Addressing these challenges requires innovative solutions that empower communities, enhance transparency, and leverage technology to facilitate real-time reporting and response (Singh & Mishra, 2024).

In response to these pressing issues, "Eyes on the Street" is introduced; a real-time crime reporting app designed to revolutionize the ways communities engage with law enforcement and contribute to public safety. By harnessing the power of crowdsourcing and mobile technology, "Eyes on the Street" seeks to bridge the gap between citizens and authorities, fostering a culture of collaboration and accountability in the fight against crime.

## 2. RELATED WORKS

This study proposes a real-time crime reporting application to enhance public safety. This concept aligns with the Broken Windows Theory, which suggests that addressing minor offenses can deter more serious crimes. By empowering citizens to report incidents in real time, the app could create a more responsive and informed law enforcement presence, potentially deterring criminal activity and improving community safety. However, the effectiveness of such an app hinge on factors like user adoption, data verification methods to minimize false reports, and clear guidelines for responsible use to avoid misuse or vigilantism. The following are some studies in this context.

This study (Jayden, 2024) investigated how crime characteristics and victim demographics influence the likelihood of reporting crimes to law enforcement. The analysis used data from the National Crime Victimization Survey spanning 1994 to 2020. The researchers employed binary logistic regression models to examine the associations between reporting behaviors and factors like weapon presence, offender familiarity, victim gender, crime location, crime type, and overall number of crime incidents experienced by the victim in the past year. These findings revealed that several factors increased the odds of reporting a crime. These included crimes committed

with a weapon, those perpetrated by strangers, incidents occurring closer to the victim's residence, violent crimes in general, and experiencing a lower total number of crime incidents within the past year. Interestingly, the study also found that female victims were more likely to report crimes than males.

Furthermore, this research explored the interaction between the year of victimization and the presence of a weapon. The results indicated that this relationship remained constant regardless of the year in which the crime occurred, suggesting a persistent effect of weapons on reporting behavior across the studied time frame.

(Singh & Mishra, 2024) described "CrimeBook", as a web-based system designed to encourage anonymous crime reporting. This study increases reporting rates, improve community engagement, and reduce law enforcement response times. The system uses a user-friendly website where individuals can anonymously submit reports and receive updates on their submissions. This study acknowledges potential issues with anonymous reporting, such as false reports and privacy concerns. To address these issues, the study employed Blowfish cipher encryption to safeguard user data, ensuring confidentiality and authorized access only.

This approach not only fulfills the need for secure and anonymous reporting but also establishes a transparent communication channel between communities and law enforcement. By empowering citizens to participate in crime prevention without compromising safety. This study contributes to a safer community environment. Beyond technology, this study emphasizes user education through outreach programs. These programs educate the community about the benefits and responsible use of anonymous reporting, fostering trust and collaboration between law enforcement and citizens. This study acknowledges the need for continuous improvement and incorporates user feedback mechanisms to ensure ongoing refinement and responsiveness to emerging challenges. The commitment to accountability and collaboration makes the preferred solution a model for leveraging technology to address societal issues while prioritizing user safety and privacy.

The study (Corpuz, Almero, Mendoza, & Garcia, 2023) shed light on the complex interplay between police cynicism and crime reporting behavior in Angeles City, Philippines. Through a meticulous mixed-methods approach, the research offered valuable insights into the factors influencing crime reporting while highlighting the impact of police cynicism on community engagement with law enforcement. The research employed a comprehensive methodology, combining a descriptive survey and correlation research to explore the attitudes of individuals toward the police, their willingness to report crimes, and their perceptions of the effectiveness of law enforcement in combating crime. The study found significant implications for improving crime reporting behavior, ultimately contributing to enhanced safety in Angeles City.

One notable aspect of the study is its identification of encouraging and discouraging factors that influence crime reporting. While generally positive attitudes toward reporting are driven by factors such as awareness of the seriousness of offenses and shared responsibility for community well-being, discouraging factors, particularly concerning non-traditional crimes, stem from fears and distrust in the justice system.

Moreover, the research underscores the weak correlation between positive perceptions of police and actual reporting behavior, highlighting the need for a holistic approach to policy development. This study emphasizes the importance of community engagement strategies and initiatives aimed at fostering trust and enhancing reporting behavior.

Furthermore, the positive correlation between discouragement and encouragement factors in reporting suggests potential policy implications, warranting further in-depth research to comprehend the intricate dynamics influencing reporting behavior. This nuanced understanding underscores the multifaceted nature of public

perceptions and reporting motivations, calling for comprehensive approaches to foster community trust and enhance reporting behavior.

(Doyle & Gerell, 2024) investigated how accurately past crime data combined with other factors can predict future crime hotspots. Focusing on both violent and property crimes in Malmo, Sweden, the study found that while past crime history is a strong predictor of future hotspots, other factors also play a significant role. The research also revealed that the characteristics of the place, such as lighting or abandoned buildings, the surrounding population size and demographics, and community features like poverty and social cohesion, all contribute to crime incidence. The study found that combining past crime data with these other factors generally led to more accurate predictions of future crime hotspots. The research also notes that even without considering other factors, past crime data alone still provide a valuable starting point for identifying potential hotspots. In summary, the research suggests that for accurate long-term forecasting of crime at a micro-local level, it is crucial to consider various factors, including, but not limited to, past crime history. In addition, the study employed a statistical technique called multilevel negative binomial regression to analyze crime data in 50-m grid cells and serves as a preliminary test of a method called Risk Terrain Modeling for crime prediction.

(Chourasia & Ponnusamy, 2024) introduced a novel approach to crime prevention focusing on women's safety. This study pioneers a gender-centric lens by integrating Geographic Information Systems (GIS) for Crime Mapping and Hotspot Analysis. The authors aim to address the unique safety concerns faced by women through innovative methodologies. The authors adopted a gender-sensitive approach to data collection, ensuring the inclusion of crimes that disproportionately affect women, such as harassment, assault, and domestic violence. This meticulous data curation reflects the unique safety challenges faced by women. The research used GIS technology for mapping and analyzing crime data. By overlaying gender-specific crime information onto geographical locations, the authors identified and visualized hotspots that require targeted intervention. This spatial analysis enhanced the precision of crime prevention strategies.

Moreover, the researchers actively involved communities in the process by incorporating community-based data and feedback. This participatory approach ensured a more holistic understanding of the safety landscape, enabling the development of solutions that resonated with the lived experiences of women in different neighborhoods. The study went beyond data analysis and provided actionable policy recommendations for improving women's safety based on the identified hotspots. These recommendations guided policymakers, urban planners, and law enforcement agencies in implementing targeted measures to create safer environments for women.

(Amal & Abin, 2024) proposed an innovative approach to tackle the rising complexity of crime in modern society. Their concept centers around an Online Crime Reporting and Management System (OCRMS) that leverages data mining techniques. This system aims to revolutionize law enforcement by streamlining the crime reporting process, enhancing data analysis capabilities, and ultimately improving decision-making for law enforcement agencies. The core of the OCRMS is a user-friendly online platform that allows citizens to report crimes easily and efficiently. This would establish a swift and efficient communication channel between the public and law enforcement. However, the true power of the OCRMS lies in its data mining capabilities. By integrating advanced algorithms like clustering, classification, and association rule learning, the system extracts valuable patterns and trends from the accumulated crime data.

Imagine law enforcement agencies that can identify hotspots of criminal activity or predict future crime occurrences. This newfound knowledge, discovered through the power of data mining, would empower them to

allocate resources effectively and proactively address emerging criminal patterns. The OCRMS, as envisioned by the authors, has the potential to be a game changer in the fight against crime. It is important to remember that this is a conceptual framework and that the paper does not present findings from a real-world implementation. However, the potential benefits are undeniable. An OCRMS integrated with data mining could streamline crime reporting, provide valuable insights into criminal activity, and ultimately lead to a safer society.

## 3. METHODOLOGY

The methodology adopted for the development of this study is the waterfall model. Recognized as a well-established and rigorously structured system development framework, the model serves as a dependable foundation for analyzing, designing, and implementing information systems in the education domain. Renowned for its clarity and precision, the waterfall model guides projects through distinct phases—from feasibility assessment to system maintenance—systematically unfolding the development life cycle. This strategic adoption aligns with the project's goal of harnessing the model's proven track record in handling complex information systems, providing a structured and disciplined approach tailored to the intricacies of societal living and crime control.

### Theoretical Foundation

The Broken Windows Theory is a criminological concept that suggests that visible signs of disorder and neglect in a community, such as broken windows, graffiti, or litter, can lead to increased crime rates and antisocial behavior. Proposed by social scientists James Q. Wilson and George L. Kelling in 1982, the theory gained prominence as an explanation for urban decay and crime in cities. At its core, the Broken Windows Theory argues that maintaining order and addressing minor infractions in a community can prevent more serious crimes from occurring. The theory draws an analogy between a broken window left unrepaired and an unchecked disorder in a neighborhood. If no broken window is promptly fixed, it sends a signal that no one cares about the community's appearance or safety. This will lead to a decline in social norms and an increase in criminal activities (Corpuz, Almero, Mendoza, & Garcia, 2023).

Central to this theory is that "disorder breeds more disorder." When visible signs of disorder go unaddressed, they can create an environment where criminal behavior is more likely to occur. Additionally, the theory suggests that criminals are more emboldened to commit crimes in areas where disorder is prevalent, as they perceive a lower risk of being caught or punished (Corpuz, Almero, Mendoza, & Garcia, 2023).

Drawing from this theory, the importance of crime reporting becomes evident as a vital mechanism in maintaining community order and preventing the escalation of criminal activities. Just as the theory posits that visible signs of disorder can contribute to increased crime; timely and accurate crime reporting serves as a means to address such disorder and prevent further criminal behavior (Shiode, Shiode, & Inoue, 2023).

Crime reporting acts as a tool for community members to alert authorities to incidents of disorder, criminal activity, or suspicious behavior (Shiode, Shiode, & Inoue, 2023). Similar to repairing a broken window to prevent the deterioration of a neighborhood, reporting crimes promptly can help address small infractions before they escalate into more serious offenses. By reporting crimes, individuals contribute to the maintenance of social norms and the creation of a safer environment for themselves and their neighbors. Moreover, effective crime reporting aligns with the Broken Windows Theory's emphasis on the role of social control in preventing crime. When community members are actively engaged in reporting crimes, they signal a collective commitment to maintaining order and deterring criminal behavior. This proactive approach to crime reporting reinforces the idea that disorder will not

be tolerated, thereby creating a sense of accountability and deterrence among potential offenders.

**App Functionality**

The functionality of the crime reporting app aligns closely with the principles of the Broken Windows Theory, aiming to empower citizens to promptly report incidents of disorder and criminal activity. Here is a breakdown of the key functionalities:

i.       **User Registration and Authentication**: The app allows users to create accounts securely by providing necessary details such as usernames and passwords. Authentication ensures that only registered users can access reporting features, enhancing the credibility of submitted reports.



**Figure 1:** User Registration page

ii.      **Crime Reporting Interface**: This user-friendly interface enables individuals to submit detailed accounts of criminal incidents they witness firsthand. This includes providing essential information such as the nature of the offense, location details, and any supporting evidence like photos or videos. The interface is designed to streamline the reporting process, making it quick and intuitive for users.
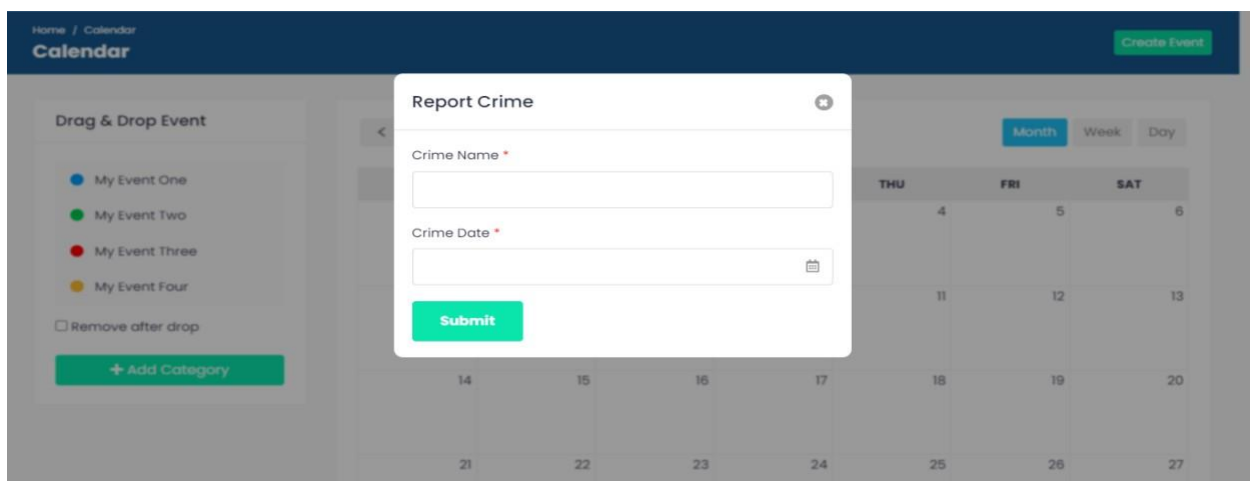


**Figure 2**: Crime reporting interface

iii.     **Real-Time Reporting**: The app facilitates real-time reporting, allowing users to submit incidents as they

occur. This feature aligns with the notion of promptly addressing disorder, enabling law enforcement agencies to respond swiftly and prevent further escalation of criminal activities.

iv. **Administrative Dashboard**: An administrative dashboard provides authorized personnel, such as law enforcement or crime control agencies, with access to incoming reports. Administrators can review submitted incidents, verify their authenticity, and take appropriate actions based on the severity and urgency of each report.

v. **Verification Mechanisms**: The app incorporates validation mechanisms to ensure the accuracy and legitimacy of submitted reports. This may include algorithms or manual review processes to authenticate the details provided by users and prevent false or misleading submissions.

vi. **Communication Channels**: The app may include built-in communication channels, such as messaging or notification systems, to facilitate communication between users and administrators. This allows for updates on the status of reported incidents and enables authorities to request additional information or clarification from users if needed.
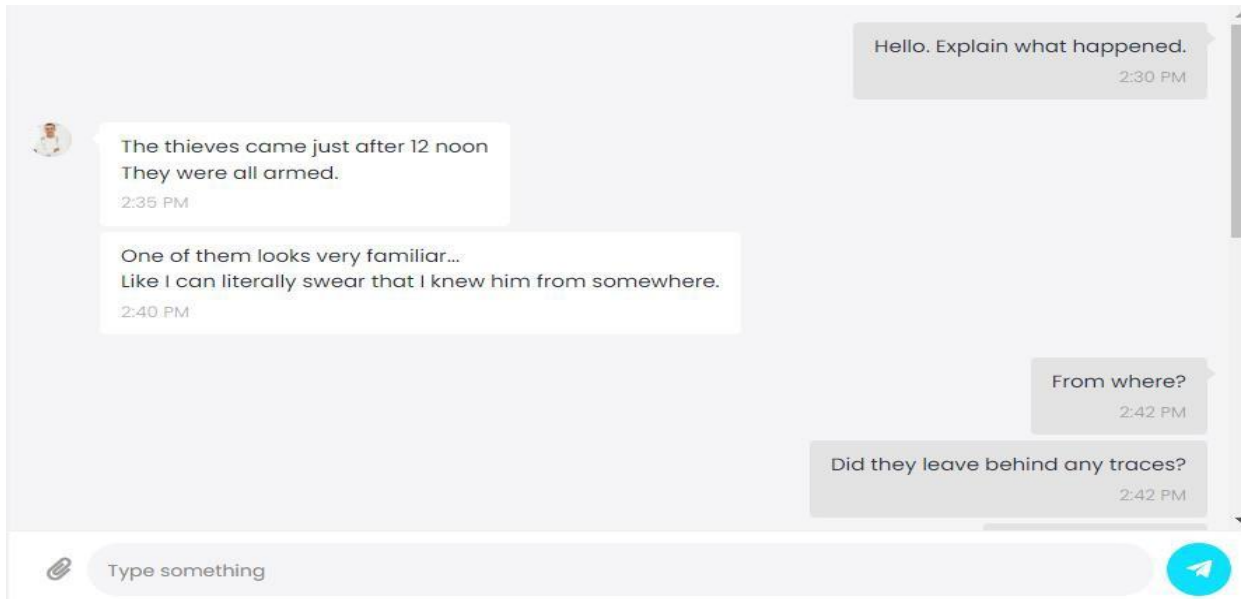


**Figure 3:** Real-time Chat interface

vii. **Data Management**: A robust data management system securely stores and organizes reported incidents, ensuring compliance with data protection regulations. This includes features for data encryption, secure transmission of information, and regular backups to prevent data loss.

## 1.2 Challenges and Considerations

Several challenges and considerations must be addressed to ensure the effectiveness and integrity of the app. These include:

i. **User Adoption Rates**: One of the primary challenges that an app may face is achieving widespread user adoption. Despite the benefits of real-time reporting and community engagement, some individuals may be hesitant to download and use the app because of concerns about privacy, security, or technological barriers. To address this challenge, the app may need to implement outreach and education campaigns to raise awareness of its benefits and reassure users about data protection measures.

ii. **Data Verification Measures**: Ensuring the accuracy and reliability of reported incidents is crucial to

maintaining the credibility of the app and preventing misuse. Implementing robust data verification measures, such as manual review processes or automated algorithms, can help authenticate the details provided by users and identify false or misleading submissions. However, striking a balance between thorough verification and timely response is essential to avoid delays in addressing genuine incidents.

iii.      **Privacy and Security**: Protecting user privacy and maintaining data security are paramount concerns for any crime reporting app. Users must feel confident that their personal information and reported incidents are handled with the utmost care and confidentiality. Implementing robust encryption protocols, access controls, and data anonymization techniques can help mitigate privacy risks and safeguard sensitive information from unauthorized access or breaches.

iv.      **Equity and Inclusivity**: Ensuring that the app is accessible and inclusive to all members of the community is essential for its effectiveness and legitimacy. This includes addressing barriers faced by marginalized groups, such as language barriers, digital literacy gaps, and lack of internet access. Providing multilingual support, user-friendly interfaces, and alternative reporting options (e.g., hotline numbers) can help make the app more accessible and inclusive to a diverse range of users.

v.      **Trust and Collaboration**: Building trust and fostering collaboration between users and law enforcement agencies is critical to app success. Transparency in how reported incidents are handled, clear communication channels, and responsiveness to community feedback are essential for cultivating trust and confidence in the app's effectiveness. Additionally, establishing partnerships with local community organizations and leaders can help strengthen community engagement and promote a sense of ownership over the app's outcomes.

## 4. SUMMARY AND CONCLUSION

In summary, the development of this crime reporting application represents a significant step toward empowering citizens to actively contribute to community safety and crime prevention. By leveraging real-time reporting capabilities and user-friendly interfaces, the app facilitates swift and efficient communication between community members and law enforcement agencies, aligning with the principles of the Broken Windows Theory. However, this work also presents various challenges and considerations that must be investigated to maximize its impact. These include addressing barriers to user adoption, implementing robust data verification measures, safeguarding user privacy and security, ensuring accessibility and inclusivity, and fostering trust and collaboration within the community. Despite these challenges, this crime reporting application holds immense potential to enhance public safety and build stronger, more resilient communities. Through continued refinement and proactive engagement with stakeholders, the app will serve as a valuable tool in promoting social cohesion, deterring criminal behavior, and ultimately creating safer environments for all human.

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