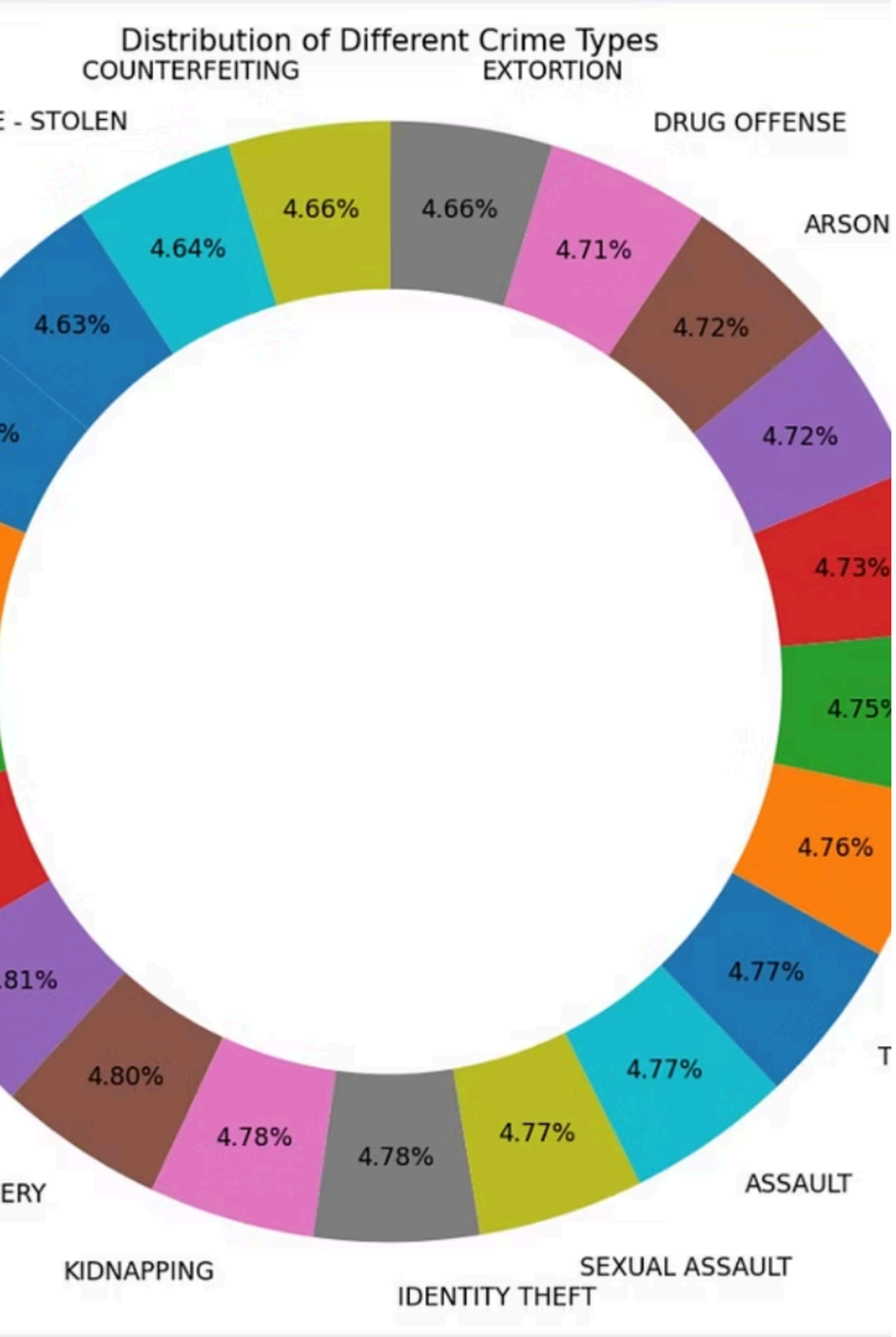

PDEU PANDIT DEENDAYAL ENERGY UNIVERSITY
Formerly Pandit Deendayal Petroleum University

Crime Data Analytics & Response Time Analysis

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Submitted to:
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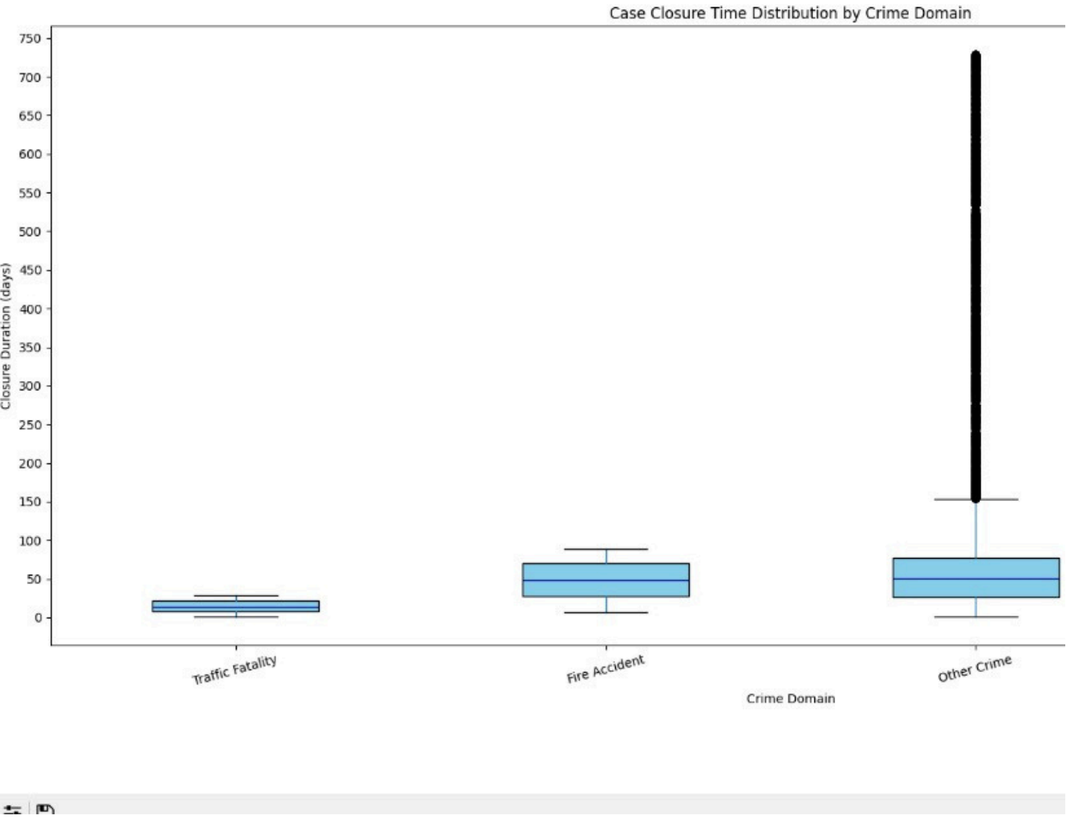


Problem Statement

Rising Urban Crime Rates

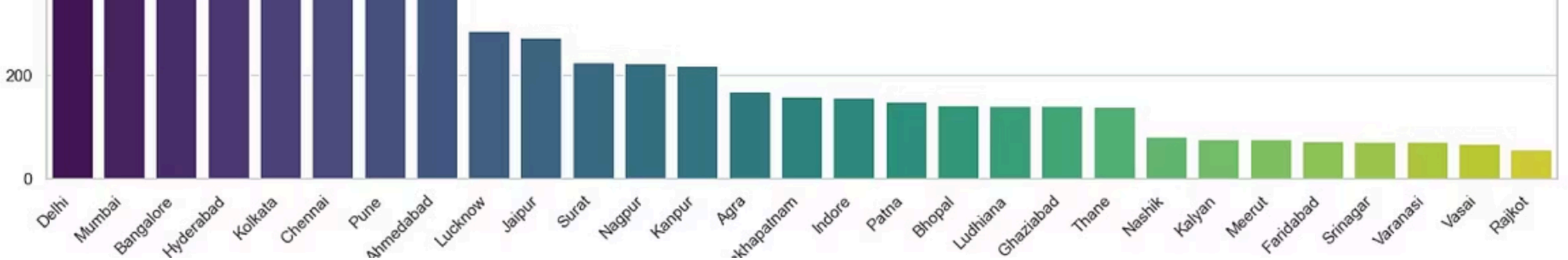
Increasing incidents challenge public safety efforts

Difficulty Identifying Patterns

Complex data overwhelms traditional analysis methods

Lack of Data-Driven Policing

Insufficient tools for targeted and efficient responses



Methodology

Data Ingestion

Store raw data in POSTGRESQL for scalability

Preprocessing

Clean and prepare data using Python scripts

Transformation

Process large datasets efficiently

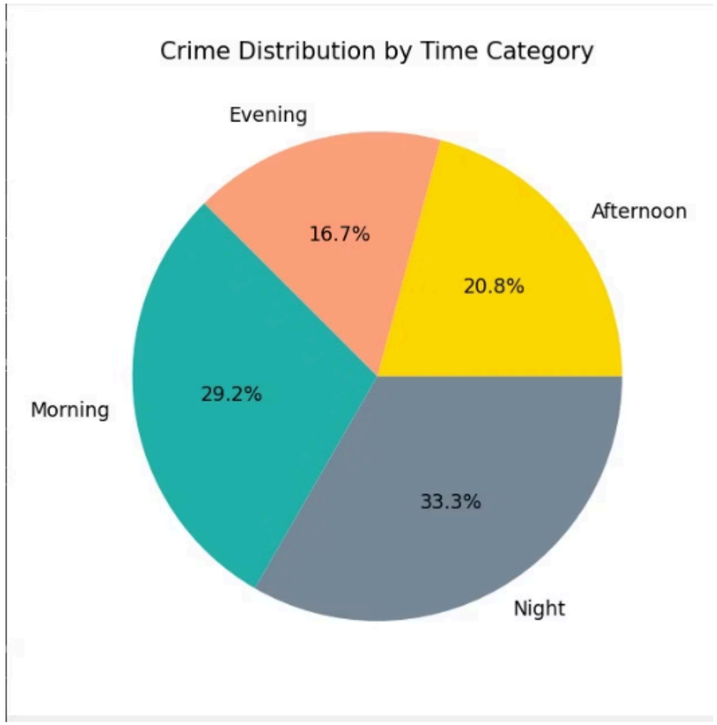
Visualize

Visualize processed data for further analysis

Results – Crime Trends & Types

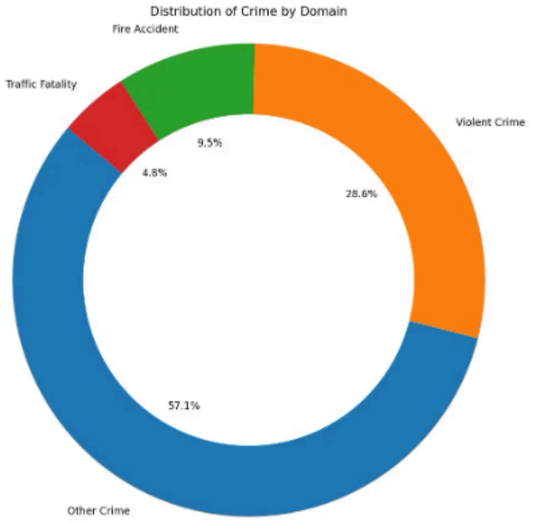
Crime Trends Over Time

Crime Distribution by time category



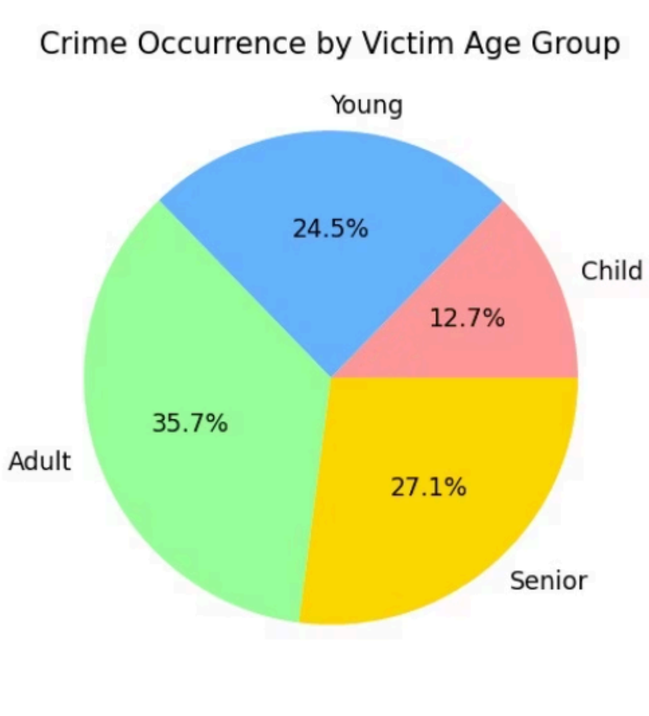
Common Crime Types

- Theft and burglary dominate urban areas.



Crime by Age Group

Crime occurence by victim age group



Results – Crime Hotspots

Hotspot Detection

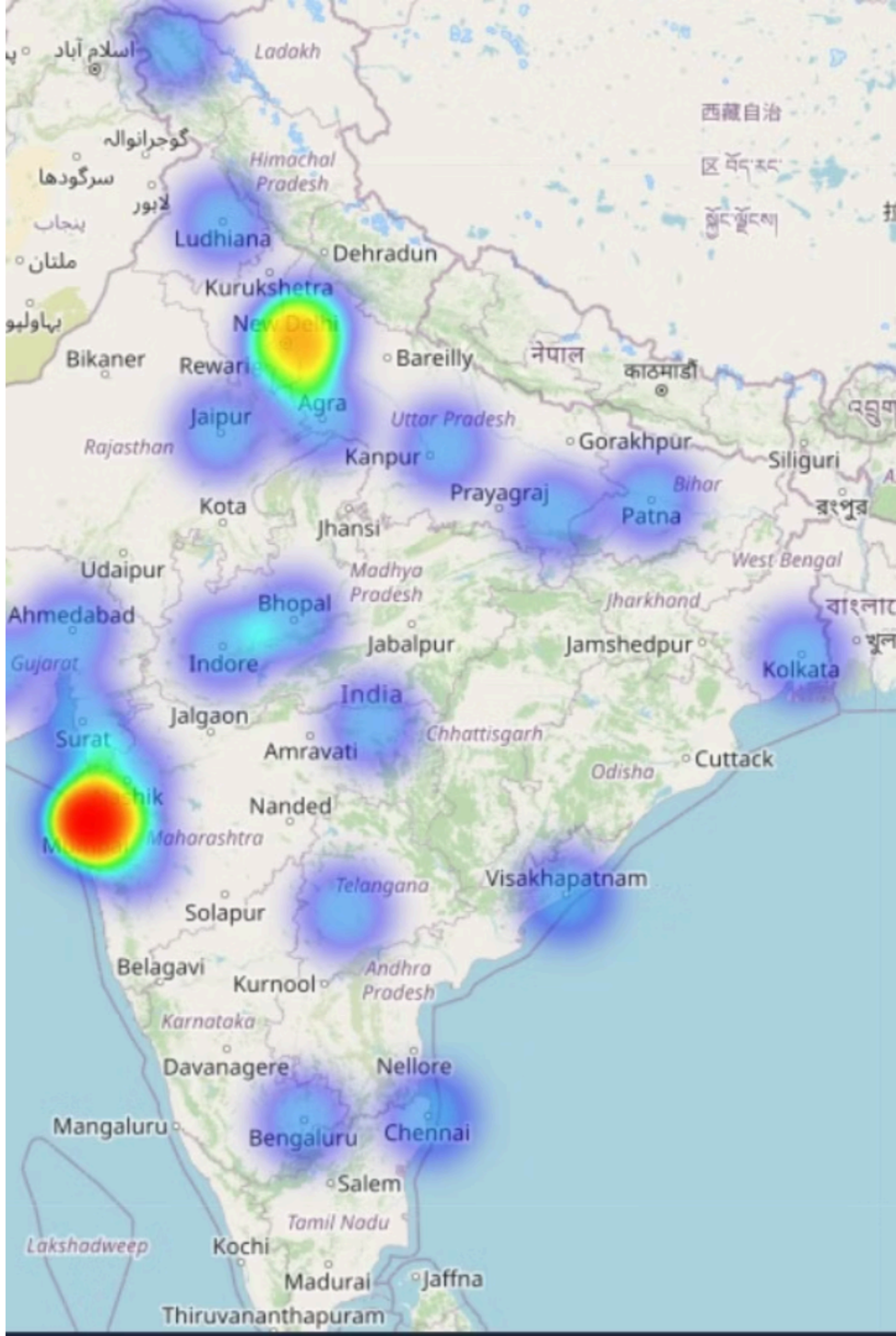
Identified high-risk areas using spatial data analysis.

Key Observations

Clusters correlate with commercial zones and transit hubs.

Police Deployment

Supports strategic allocation of patrol resources.



Results – Response Time

Response Time Analysis

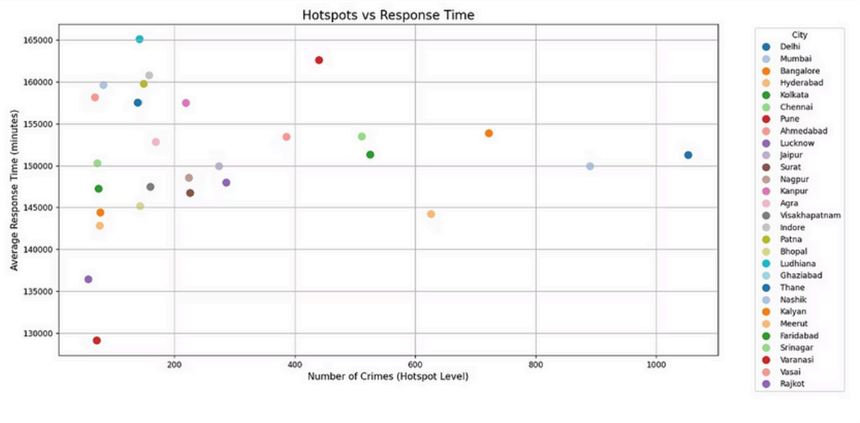
Measured delays impact emergency readiness significantly.

Decision Making

Data aids in optimizing dispatch and resource management.

Real-World Impact

Improved response can save lives and reduce crime severity.



Conclusion

Trend Analysis

Detected crime patterns guiding proactive policing.

Hotspot Identification

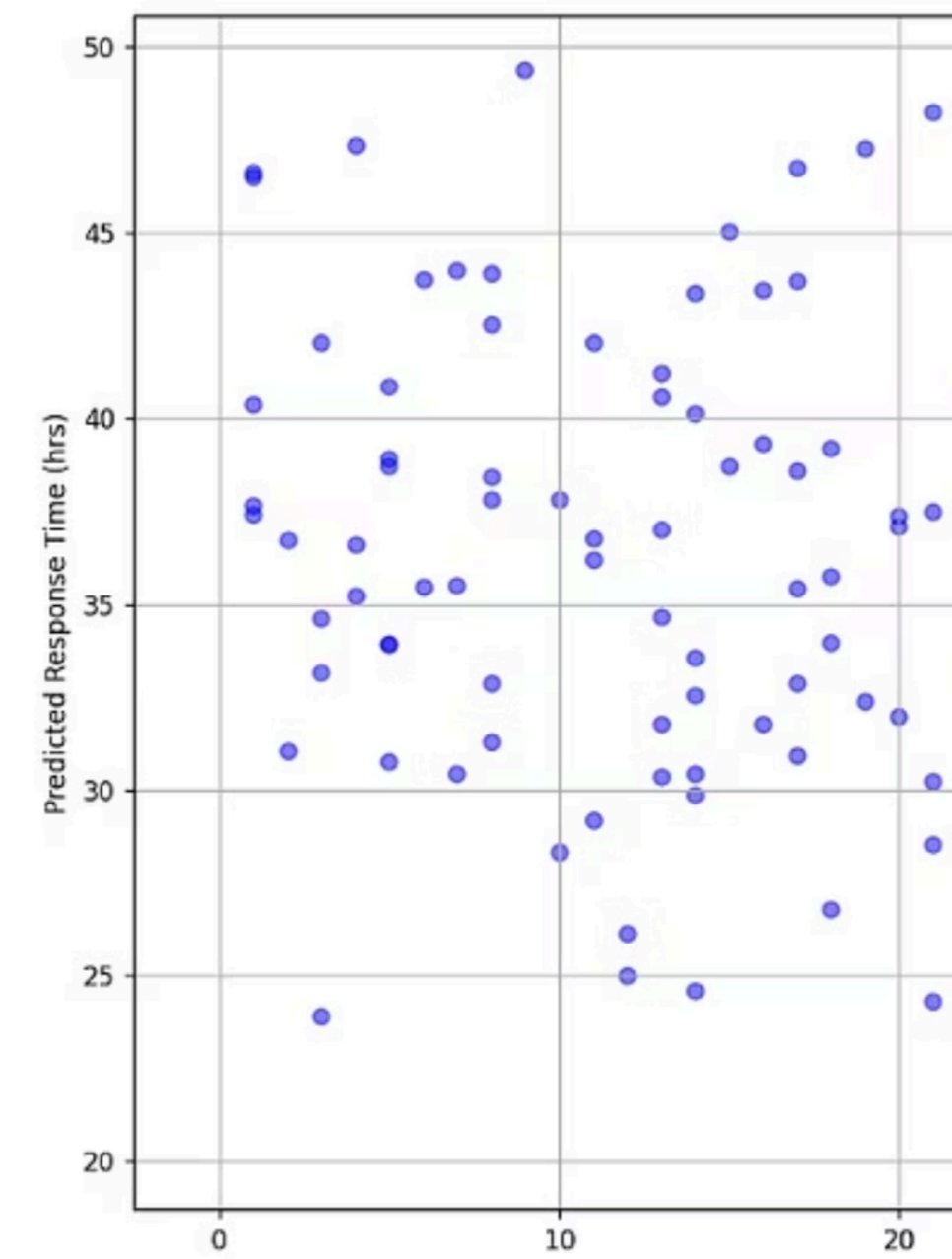
Spatial mapping enhances targeted patrols.

Response Evaluation

Metrics inform improvements in emergency response.

Future Enhancements

Integrate machine learning for predictive analytics.



Indian Crimes Dataset

Detailed crime data from various cities in India for the year 2023

References

- Crime Dataset (Kaggle) - https://www.kaggle.com/datasets/sudhanvahg/indian-crimes-dataset
- Research Paper Reference - https://eudl.eu/pdf/10.4108/eai.7-9-2021.2314943
- Graph References - https://www.kaggle.com/code/sudhanvahg/crime-eda-using-plotly