Neighborhood Check

Crime Risk Awareness Using Public Government Data

Capstone Project Proposal

January 28, 2026

1. Problem Statement

- Individuals moving to new neighborhoods struggle to assess local safety due to fragmented government data.
- Information is presented in formats difficult for non-experts to interpret.
- People rely on anecdotal information or incomplete summaries.
- **Need:** An accessible tool that consolidates data and presents risk patterns clearly.

2. Project Objective

The Goal

Develop a machine learning–based web application to help users understand neighborhood safety conditions.

- Analyze publicly available crime and incident data.
- Provide contextualized risk indicators.
- Support informed decision-making.
- Avoid definitive judgments (e.g., ”safe” vs. ”unsafe”).

3. Machine Learning Task

Analysis Output: Insights based on ZIP code or geographic area:

- Crime-type-specific risk scores.
- Temporal patterns (time-of-day/seasonal trends).
- Relative risk indices compared to surrounding areas.

Core Methodology

Focus on pattern analysis and comparative risk estimation rather than individual event prediction.

4. Data Sources

- **FBI Crime Data API:** Nationwide stats (UCR/NIBRS).
- **FBI NIBRS Bulk Data:** Anonymized incident-level records.
- **Municipal Open Data:** Geocoded reports from major cities.
- **Public 911 Data:** Emergency call-for-service datasets.

All datasets are anonymized and used in compliance with open data guidelines.

5. Web Application Description

Neighborhood Reality Check Features:

- ZIP code or geographic area input.
- Category-based risk indicator visualization.
- Time-based trends and neighborhood comparisons.
- Visual indexes and charts for relative risk.

Prioritizes clarity and transparency over alarmist judgments.

6. Ethical Considerations

- **Privacy:** Zero use of individual-level or PII data.
- **No Labeling:** No ”safe” or ”unsafe” classification.
- **Comparative:** All outputs are informational benchmarks.
- **Neutrality:** Emphasizes awareness over fear.

7. Expected Impact

- Accessible decision-support for housing seekers.
- Data-driven patterns for policymakers.
- **Target Users:**
  - Individuals planning to relocate.
  - Real estate professionals.
  - Local government agencies.

8. Project Status

- Proposal documentation (Ongoing)
- Data exploration and model development (Ongoing)
- Web application implementation (Ongoing)
- Periodic progress updates

Thank You

Questions & Feedback