

Crashspot Research – Week 2 Report

This document summarizes progress for Week 2 of the Crashspot Research Project. The focus of this week was cleaning and exploratory mapping of crash data for Louisiana and Monroe.

1. Data Cleaning & Standardization

- Loaded cleaned GeoJSON outputs from Week 1 (Louisiana + Monroe).
- Converted YEAR, MONTH, DAY, HOUR into numeric values.
- Created a DATE column from those fields.
- Standardized coordinate system to WGS84 (EPSG:4326).

2. Exploratory Summaries

- Computed crash counts by YEAR, MONTH, HOUR, and COUNTY.
- Identified temporal patterns (seasonal and hourly trends).

3. Visualization Outputs

- Created bar charts:
 - Louisiana crashes by month (2022–2023)
 - Monroe crashes by hour (2022–2023)
- Generated a Kernel Density Estimation (KDE) heatmap for Monroe crashes showing crash hotspots.

All figures are saved in outputs/figures/ and may be included in the final presentation.

4. Preparation for Week 3

- Download Louisiana OSM road data from Geofabrik.
- Place extracted shapefiles into data_raw/osm_roads/.
- These will be used for overlay and correlation analysis in Week 3.

5. Conclusion

Week 2 expanded on the data foundation built in Week 1. We now have standardized datasets, initial temporal summaries, and visualizations including a heatmap. This exploratory analysis provides the basis for deeper spatial analysis in Week 3.