



Peak Hour Traffic Analysis

Presented By
Harini Mukesh



Objective

Purpose of the Analysis

- Identify peak traffic hours for each junction
- Analyse temporal traffic patterns
- Study the influence of weather and special events
- Provide recommendations to reduce congestion



Dataset Overview



Data Used

1. Integrated dataset combining:

- Traffic volume data (hourly, junction-wise)
- Weather data (temperature, humidity, precipitation, windspeed)
- Event indicators (festivals, holidays, public events)

2. Time period: Nov 2015 – June 2017

3. Granularity: Hourly data per junction

Congestion Metric & Methodology

Approach

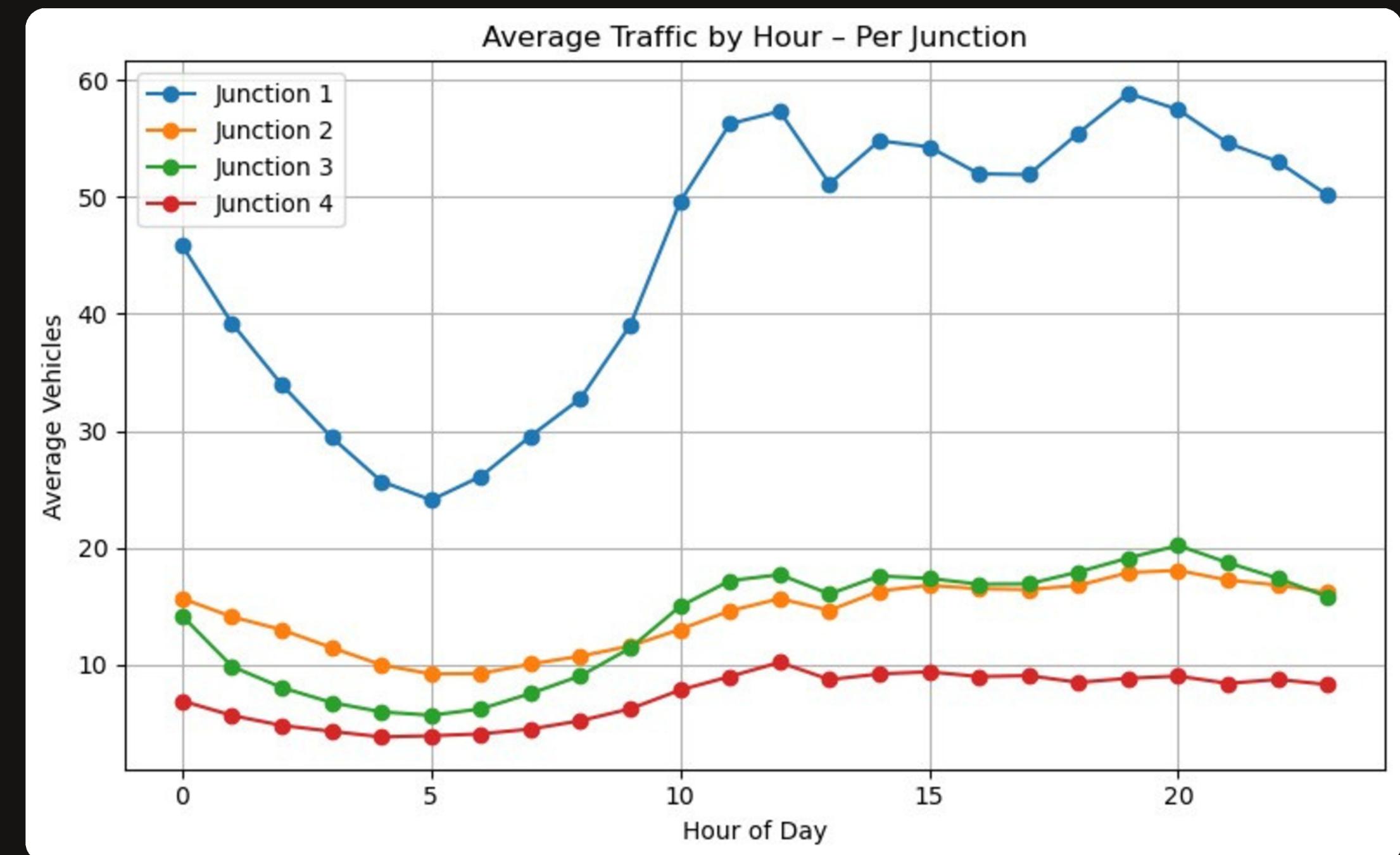
- ✓ Congestion measured using average vehicle count per hour
- ✓ Data aggregated by:
 - Junction
 - Hour of day
 - Day of week
- ✓ Peak hours identified by highest average traffic values



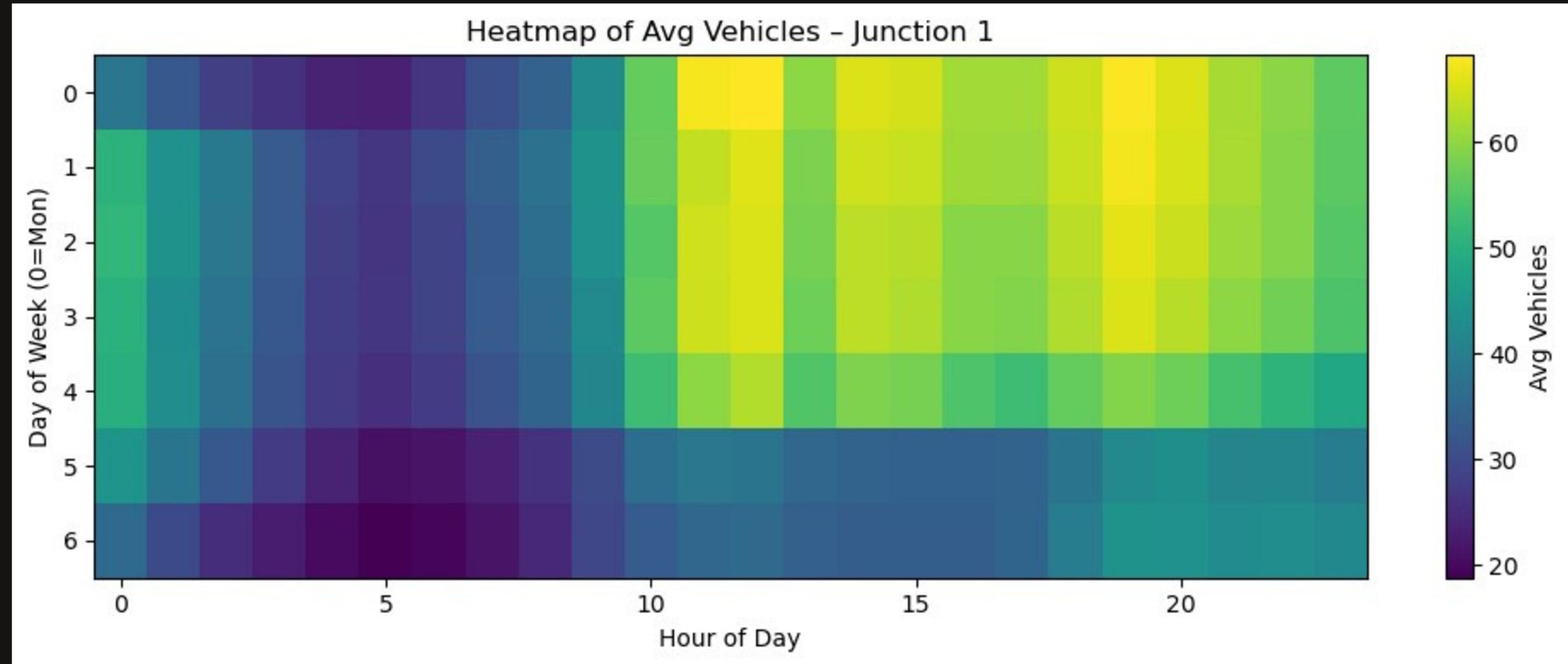
Peak Hour Identification

Peak Traffic Hours

- Distinct morning and evening peak hours observed
- Peak periods are consistent across days
- Junctions show different congestion intensity levels
- Morning peaks typically occur between 8-10 AM, while evening peaks occur between 5-7 PM.



Temporal Patterns



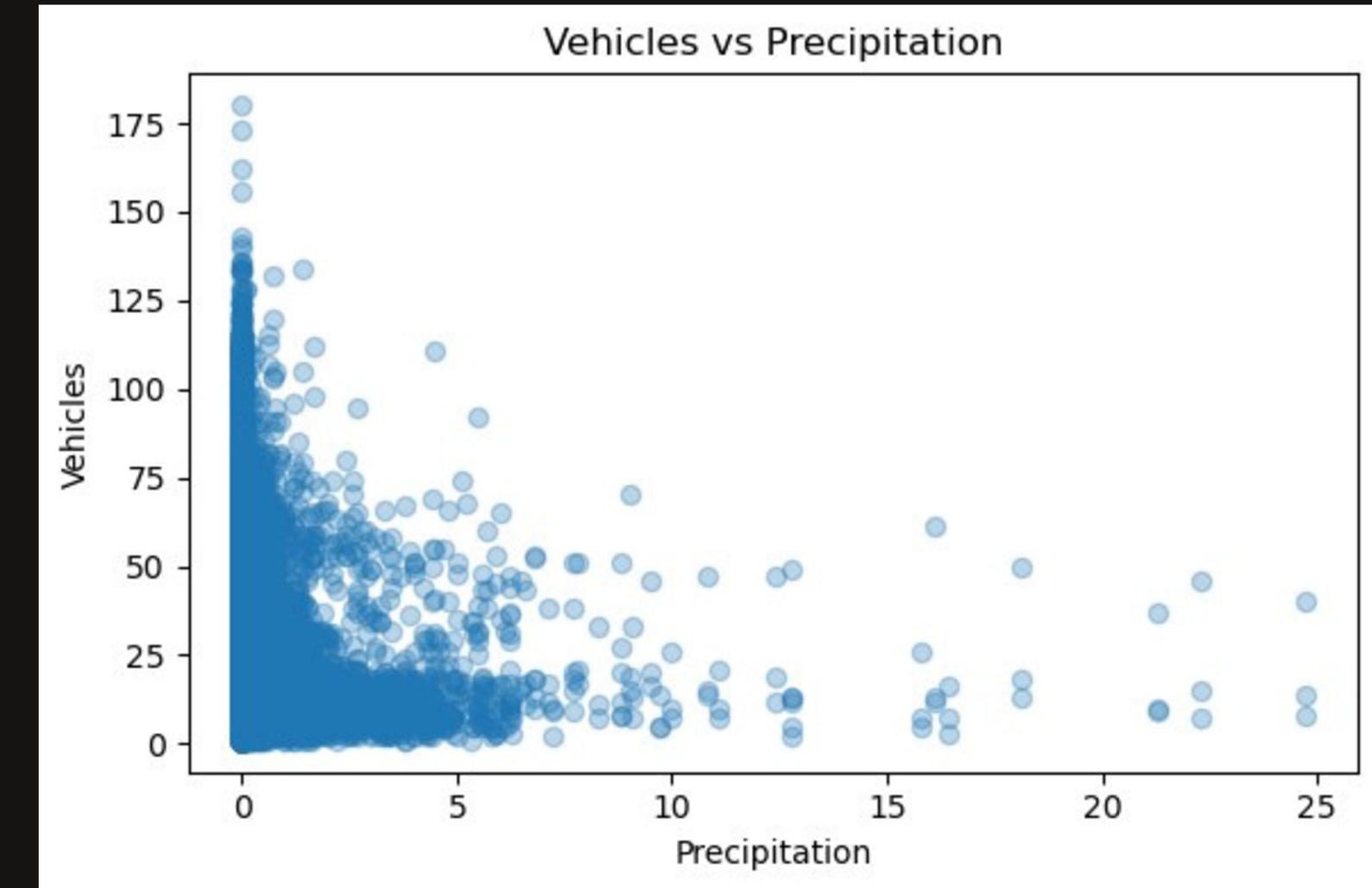
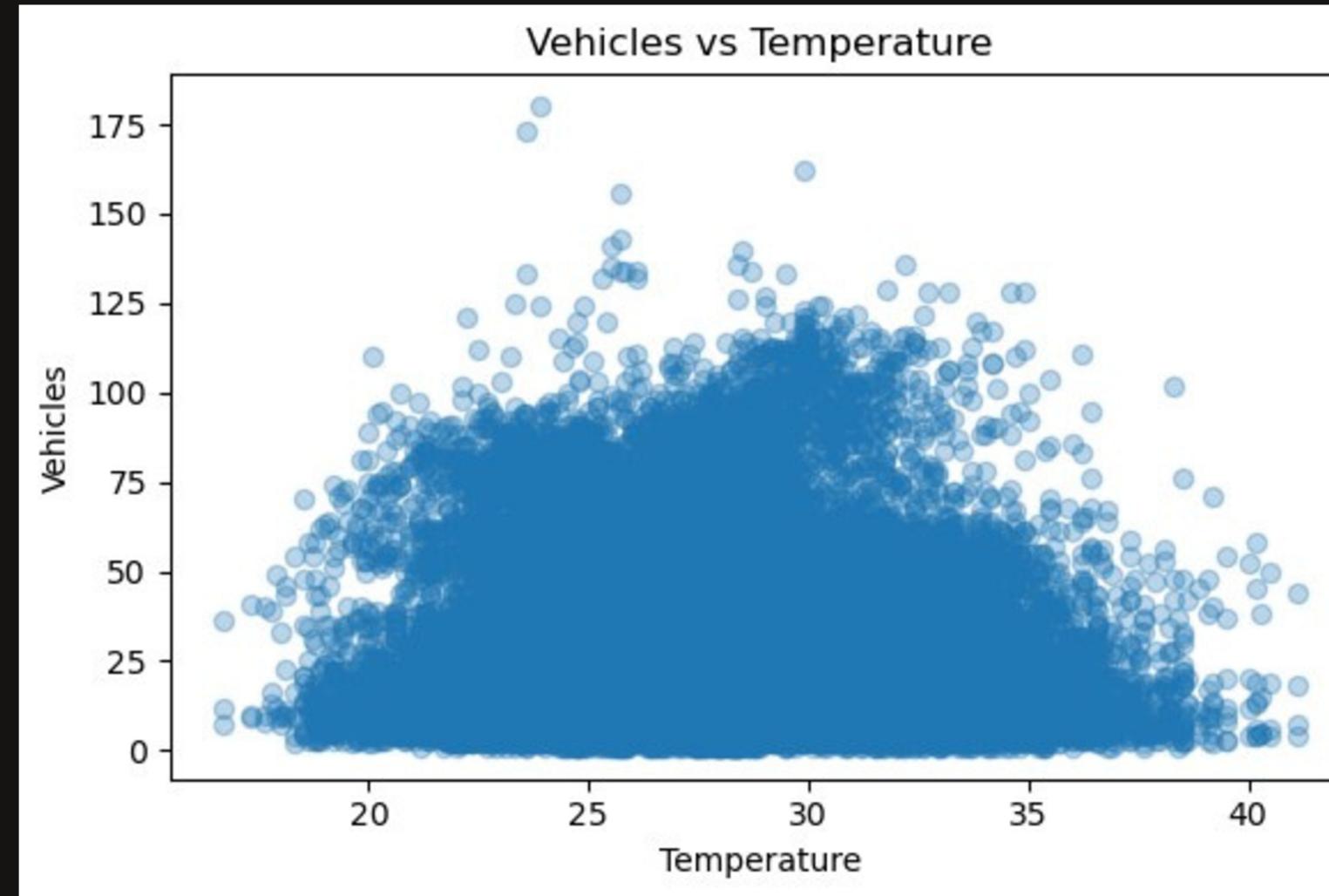
Weekday vs Weekend Patterns

- Weekdays show sharper morning and evening peaks
- Weekends have delayed and flatter peak patterns

Day-of-Week Insights

- Traffic volume varies with workday schedules

Impact of External Factors



Weather & Events

- Weather variables show mild correlation with traffic volume
- Event periods create localized congestion spikes
- Short-term traffic history remains the strongest driver of congestion

Recommendations & Conclusion

Recommendations

- Adjust signal timings during peak hours
- Promote staggered work schedules
- Enhance public transport capacity during congested windows

Conclusion

- Peak traffic hours are predictable and stable
- Temporal factors dominate congestion patterns
- Analysis supports effective traffic management planning