Investigating Chicago Auto Incidents

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Goal

Identify leading factors of auto incidents to locate areas of improvement for safety

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DATA OVERVIEW

01

WHAT WE WORKED ON

OVERWHELMING AMOUNTS OF DATA

3 different datasets totaling at close to a million observations

INCORRECT DATA

Abundance of data that did not make sense in a realistic setting.

- over 1,000 lanes present

MEANINGLESS DATA

Features recording the same value for every entry

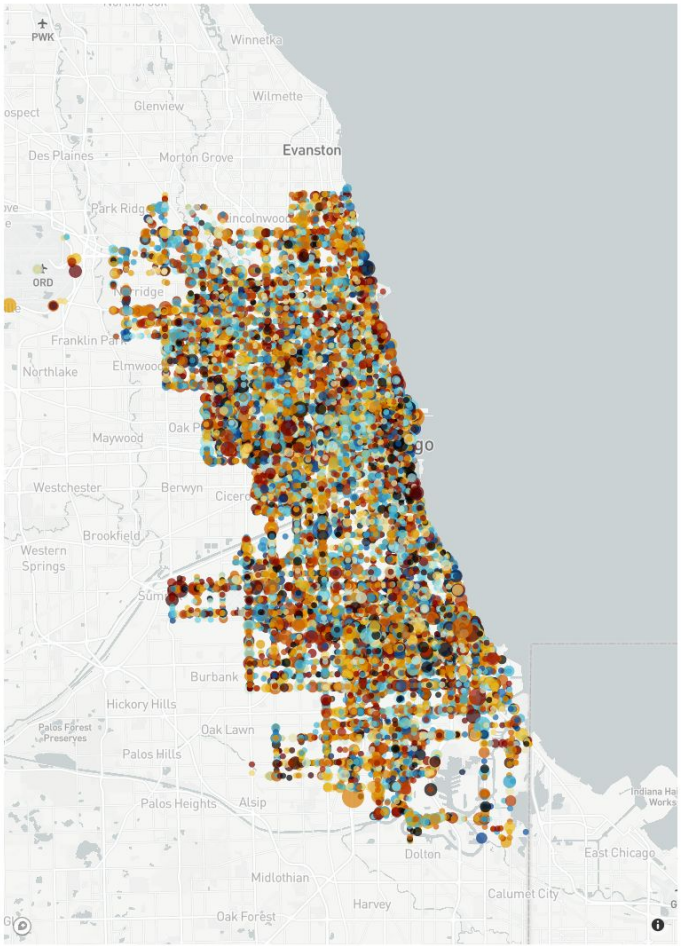
MISSING DATA

Crashes - >20%
People - >35%
Vehicles - >70%

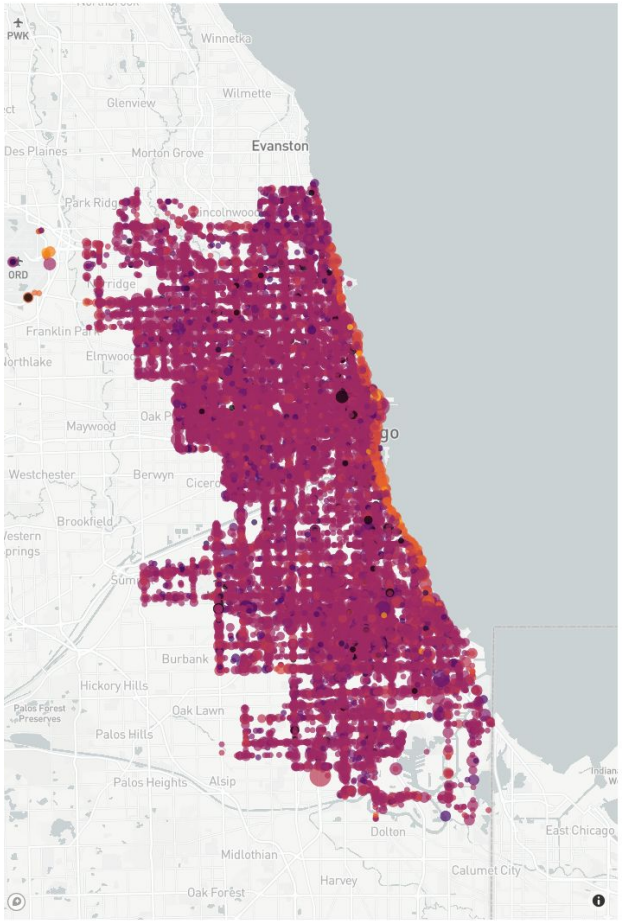
DATA EXPLORATION

02

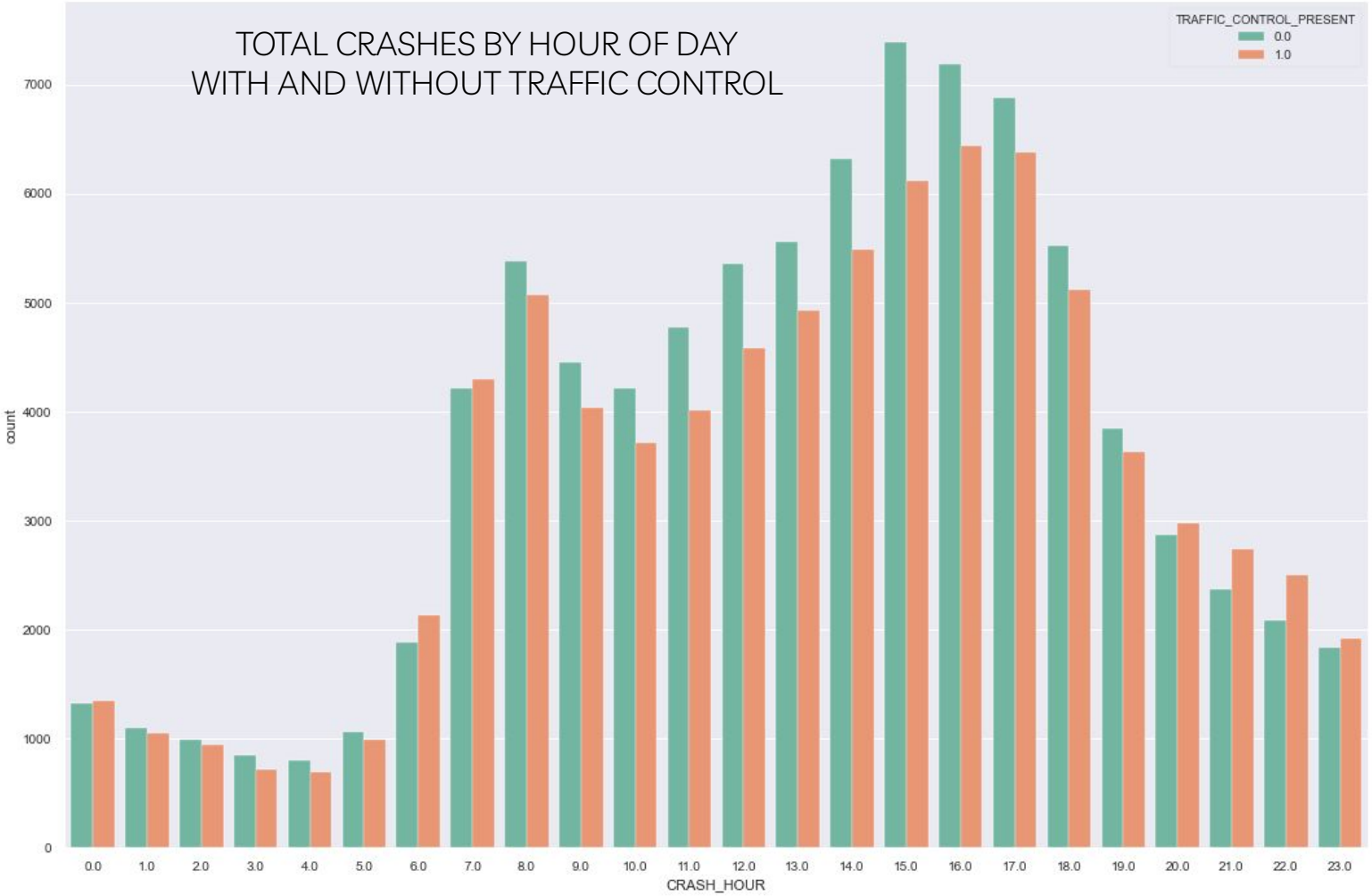
Chicago Crash Locations - Time of Day



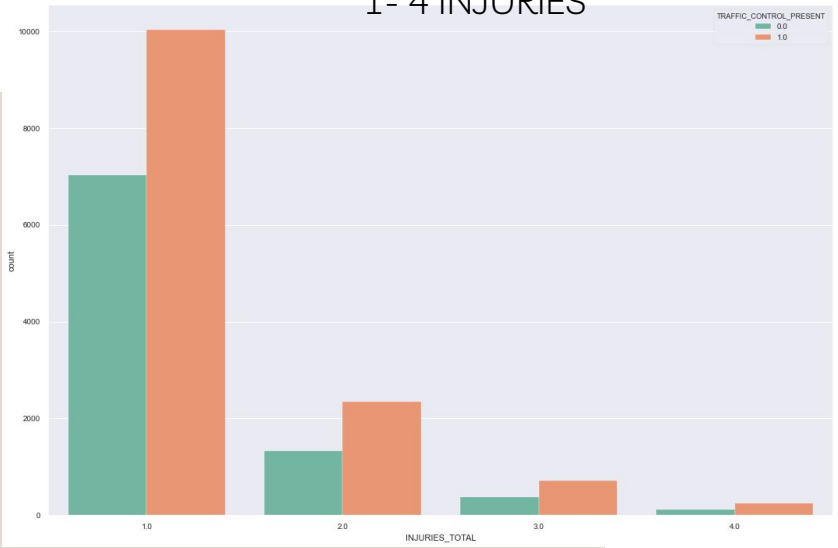
ago Crash Locations - Filtered



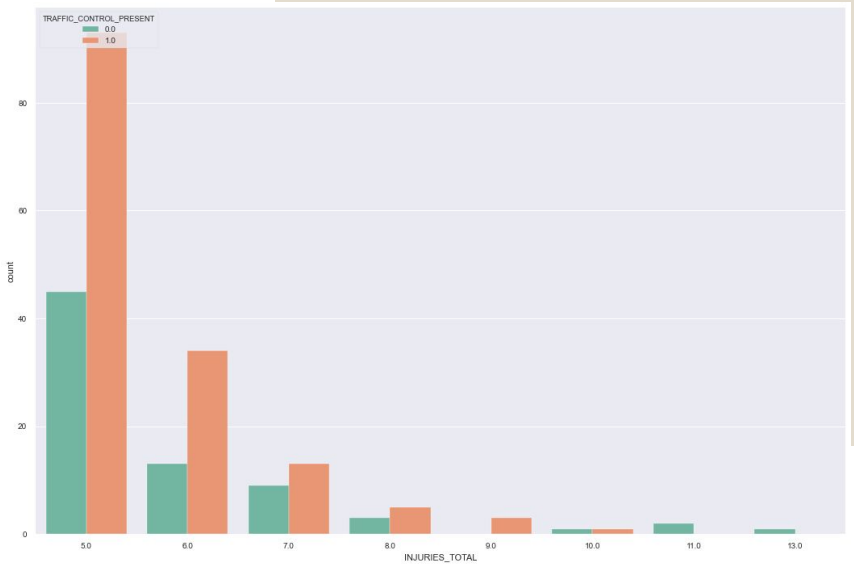
TOTAL CRASHES BY HOUR OF DAY WITH AND WITHOUT TRAFFIC CONTROL



INJURY DISTRIBUTION BY TRAFFIC CONTROL IN THOUSANDS
1- 4 INJURIES



INJURY DISTRIBUTION BY TRAFFIC CONTROL IN TENS
5+ INJURIES



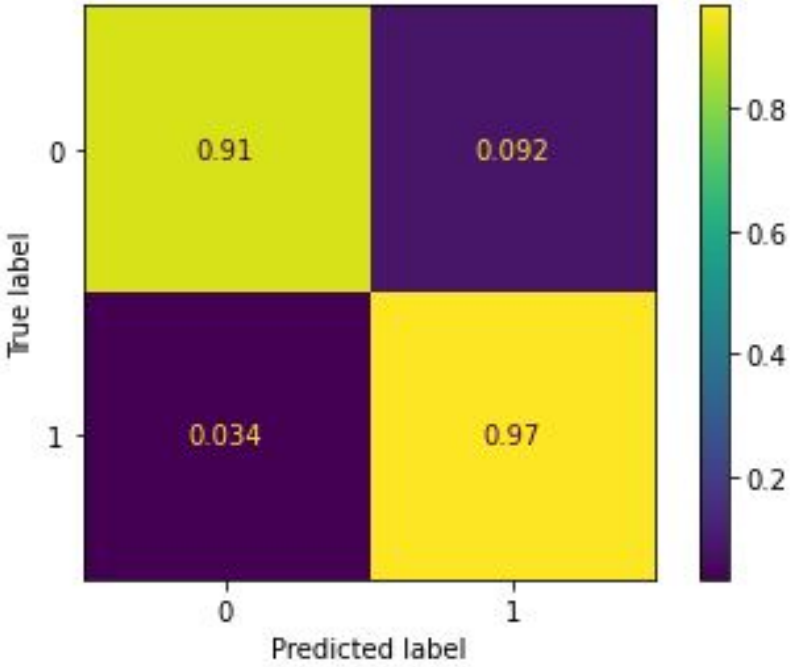
CLASSIFICATION AND EFFECTIVENESS

03

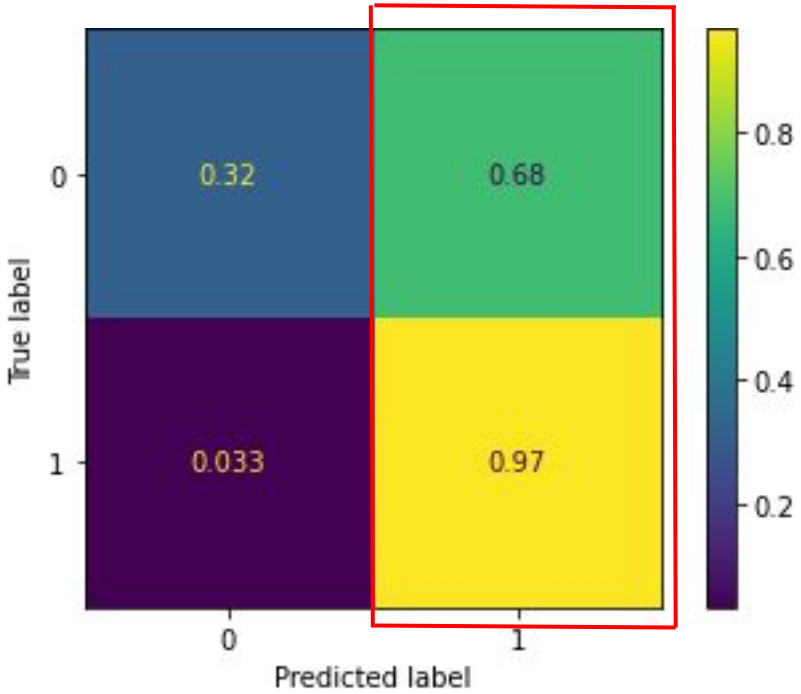
CLASS IMBALANCE

IDENTIFYING DRIVER ERROR

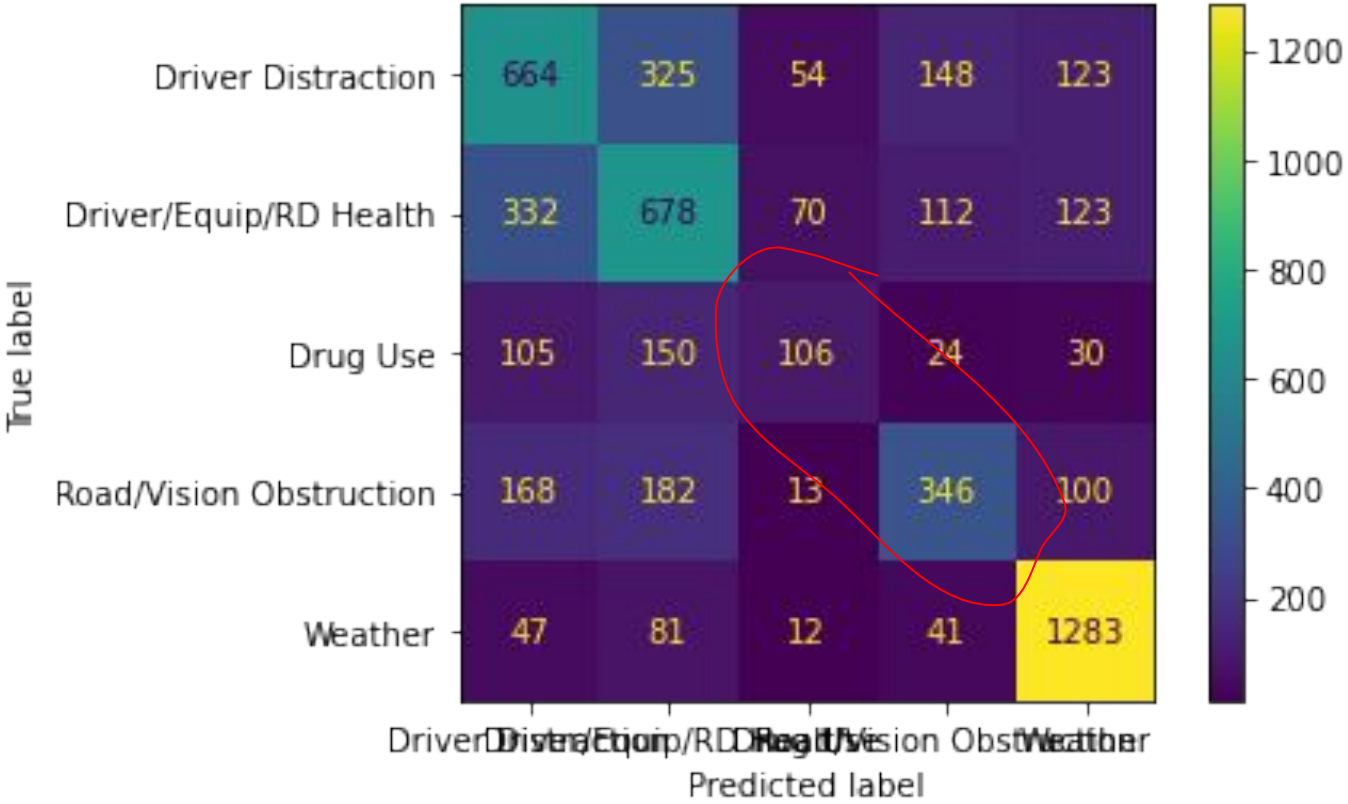
TRAIN RESULT

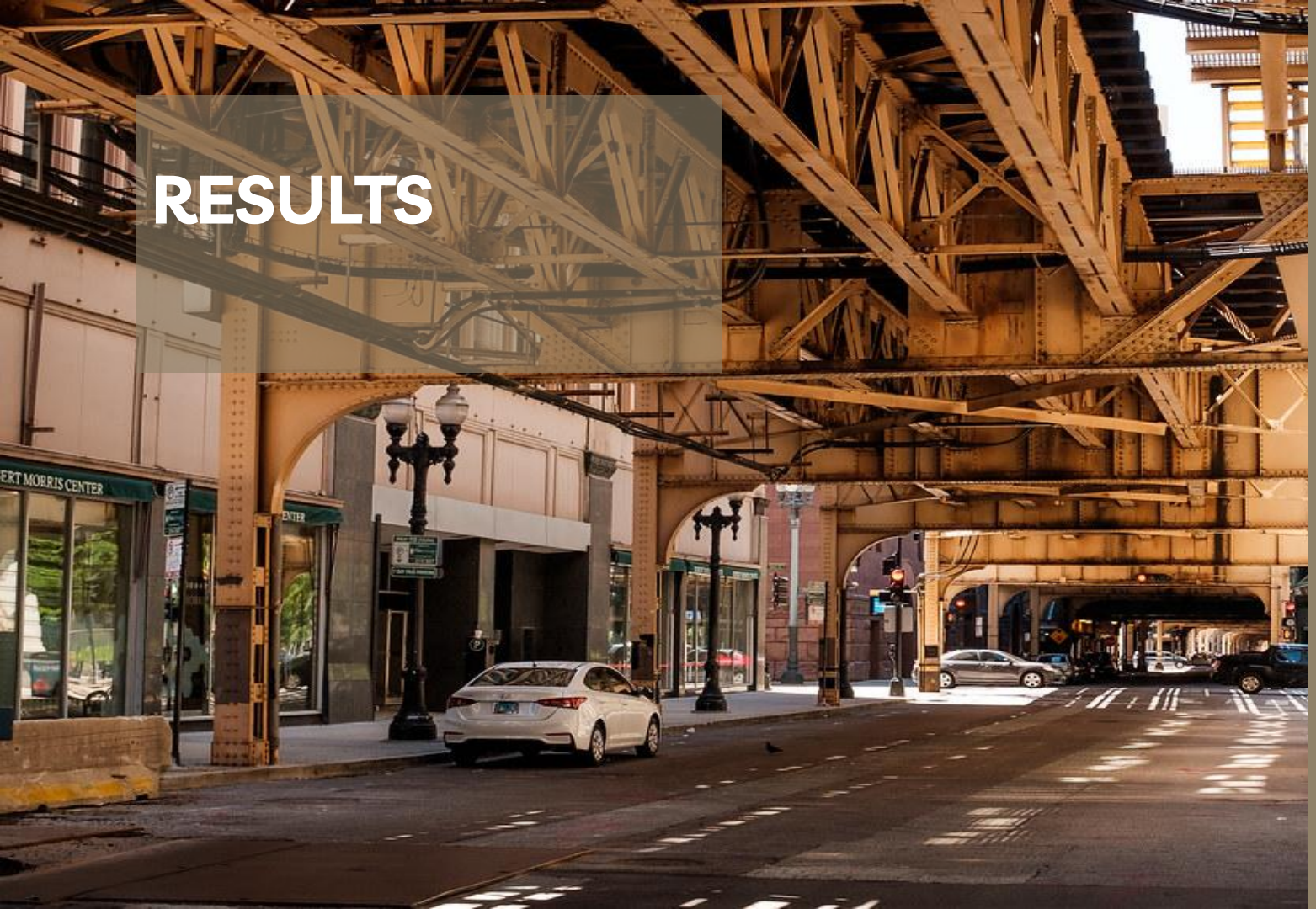


TEST RESULT



IDENTIFYING SUB-CLASSES





RESULTS

04

KEY FINDINGS

LOW INJURIES/FATALITIES

>99% were fatality free
>85% were injury free

TRAFFIC CONTROL

More injuries did occur WITH traffic control present
On average more accidents occurred WITHOUT traffic control

THE ROAD AHEAD

MARY'S MARK

05

NEXT STEPS

STEP 1

Improve data entry and collection

STEP 2

Clean an incorporate additional datasets for further insights
Identify problem traffic control areas

STEP 3

Model refinement and alternate classification groupings by association

THANK YOU
FOR YOUR
TIME