

Severity prediction of traffic accidents in the City of Seattle

Visualization

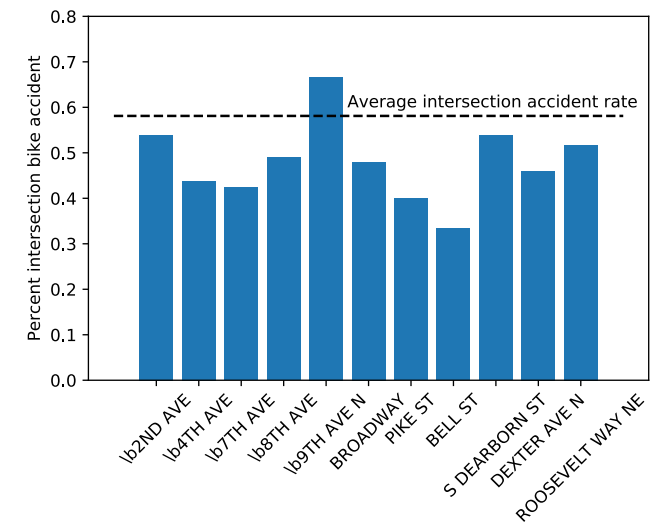
User examples

- Safety monitoring



Total accidents and rate of severity

- Policy evaluation



Are protected bike lane effective?

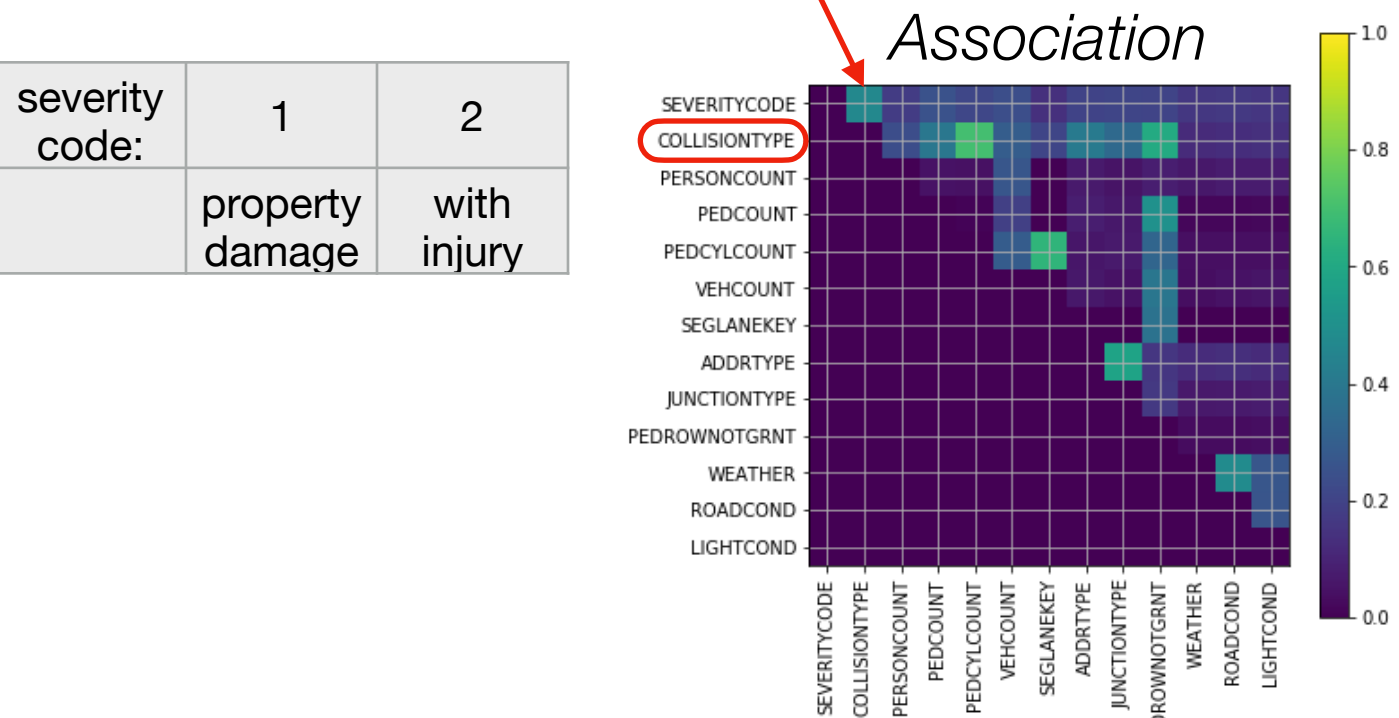
Significantly reduced bicycle accident rate at the intersections.

Methods

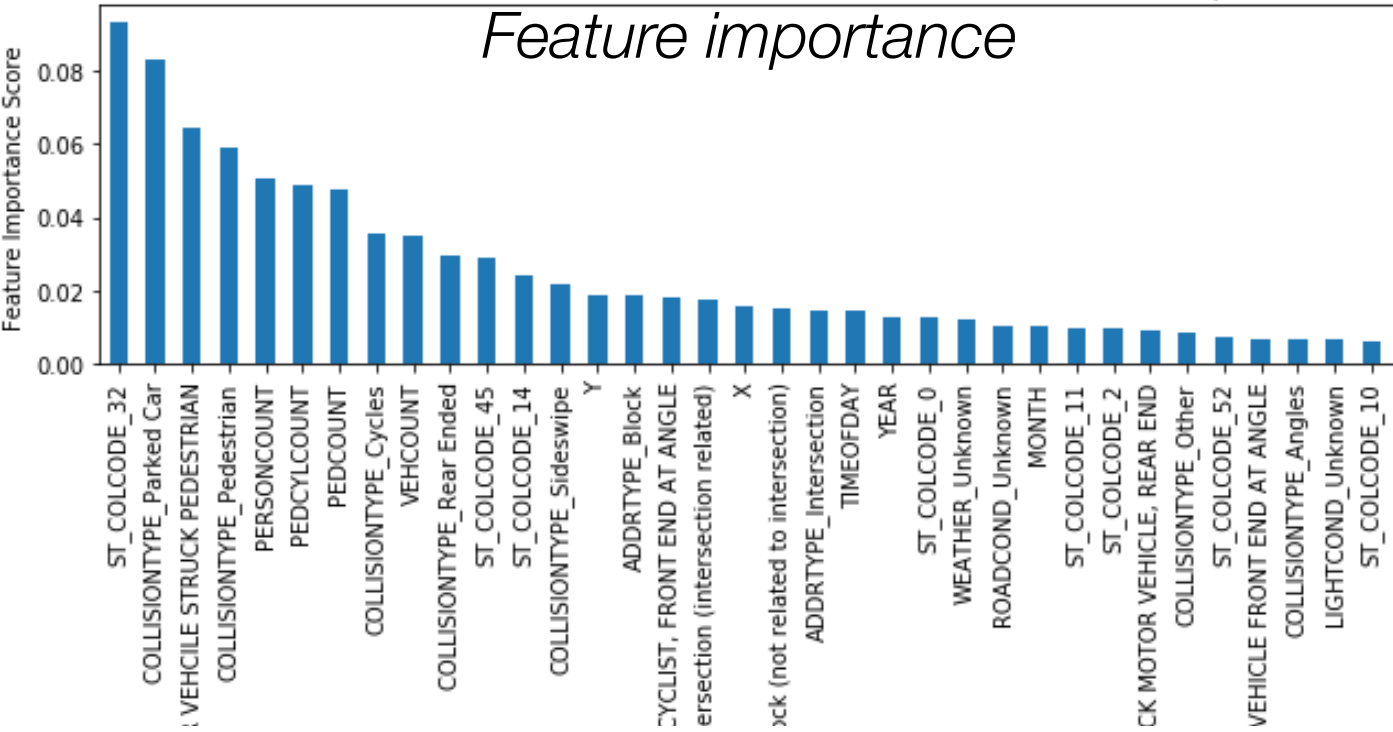
- Python folium
- Statistical testing
 - Chi-squared or exact binomial test

Risk factor identification

- Police codes are good predictors



- Insight beyond human intuition



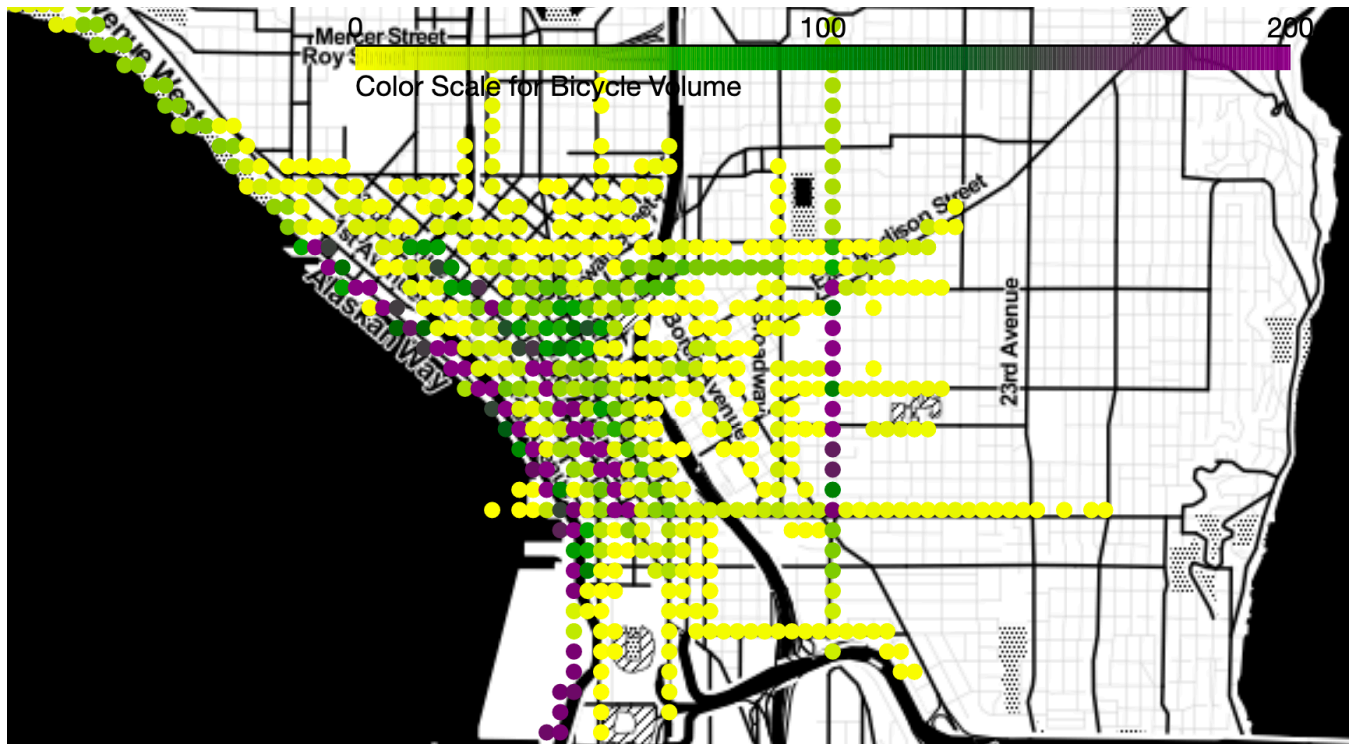
Methods

- Descriptive analytics
- Classification tree models

Where to install the next protected bike lane?

User's goal

- Maximize safety
 - Bicycle traffic volume (Strava app)
 - Function to predict a safety index
- Maximize value
 - Real estate and small business
- Within a budget constraint



Strava riding data for bicycle volume estimation

Methods

- Regression
- Optimization

Generalize the analysis pipeline to other cities: NYC, Philadelphia

<https://github.com/qcabel/collision-severity-prediction>