Severity prediction of traffic accidents in the City of Seattle

Visualization
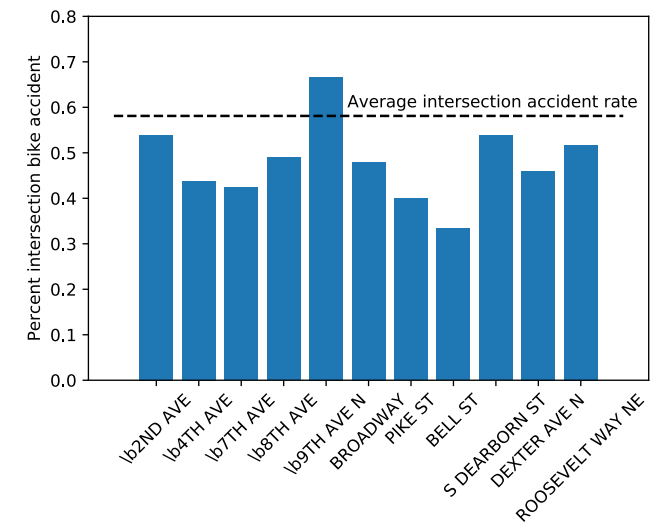
- **Safety monitoring**

Total accidents and rate of severity
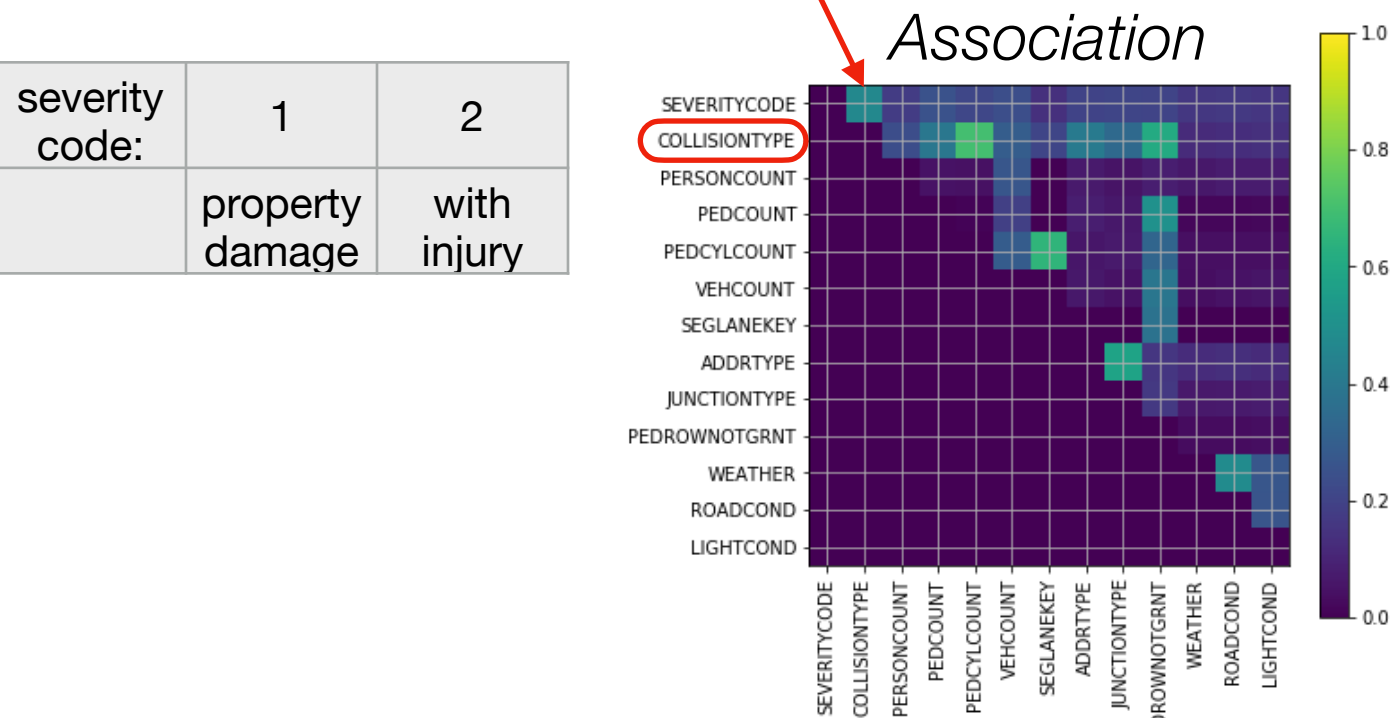
- **Policy evaluation**

Are protected bike lanes effective?
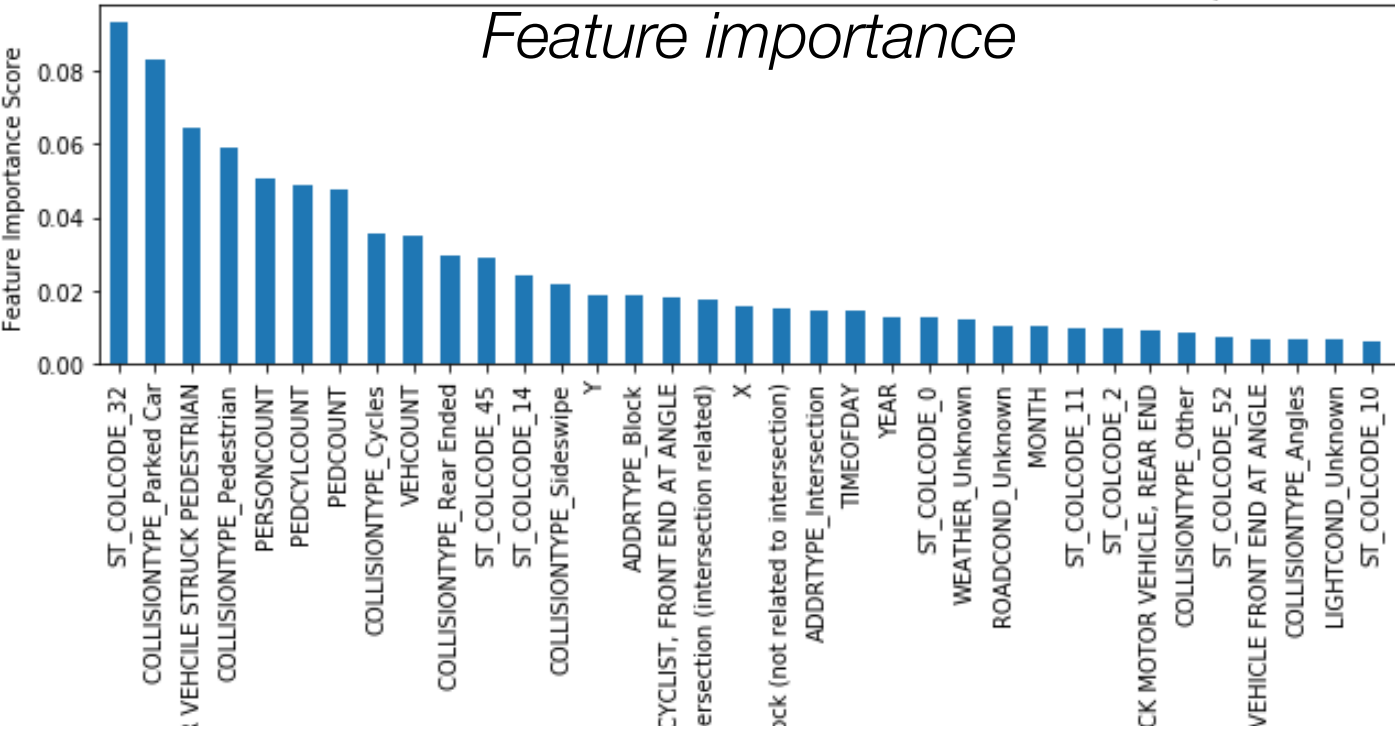Significantly reduced bicycle accident rate at the intersections.

Methods

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

Risk factor identification

- **Police codes are good predictors**

severity code:	1	2
	property damage	with injury

Association

- **Insight beyond human intuition**
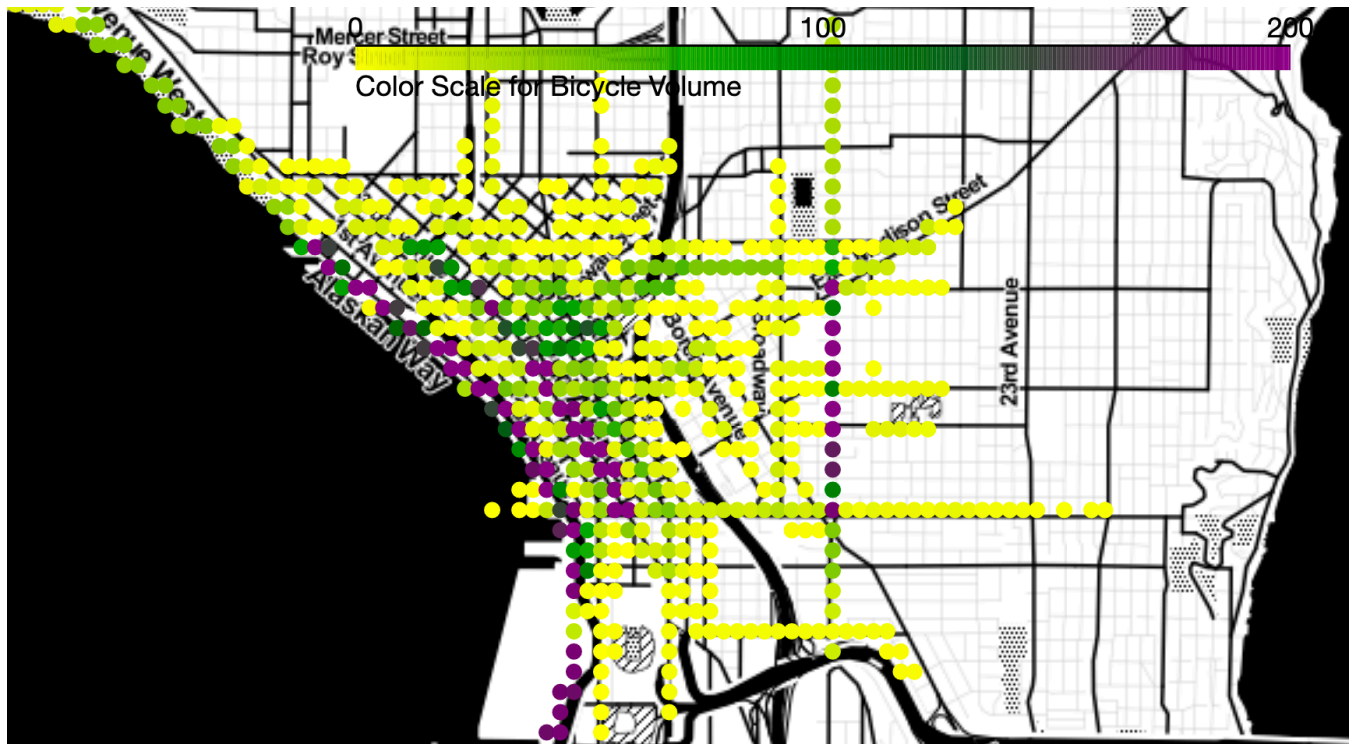
Feature importance

Methods

- **Descriptive analytics**
- **Classification tree models**

Where to install the next protected bike lane?

- **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