

## Object: Trajectory

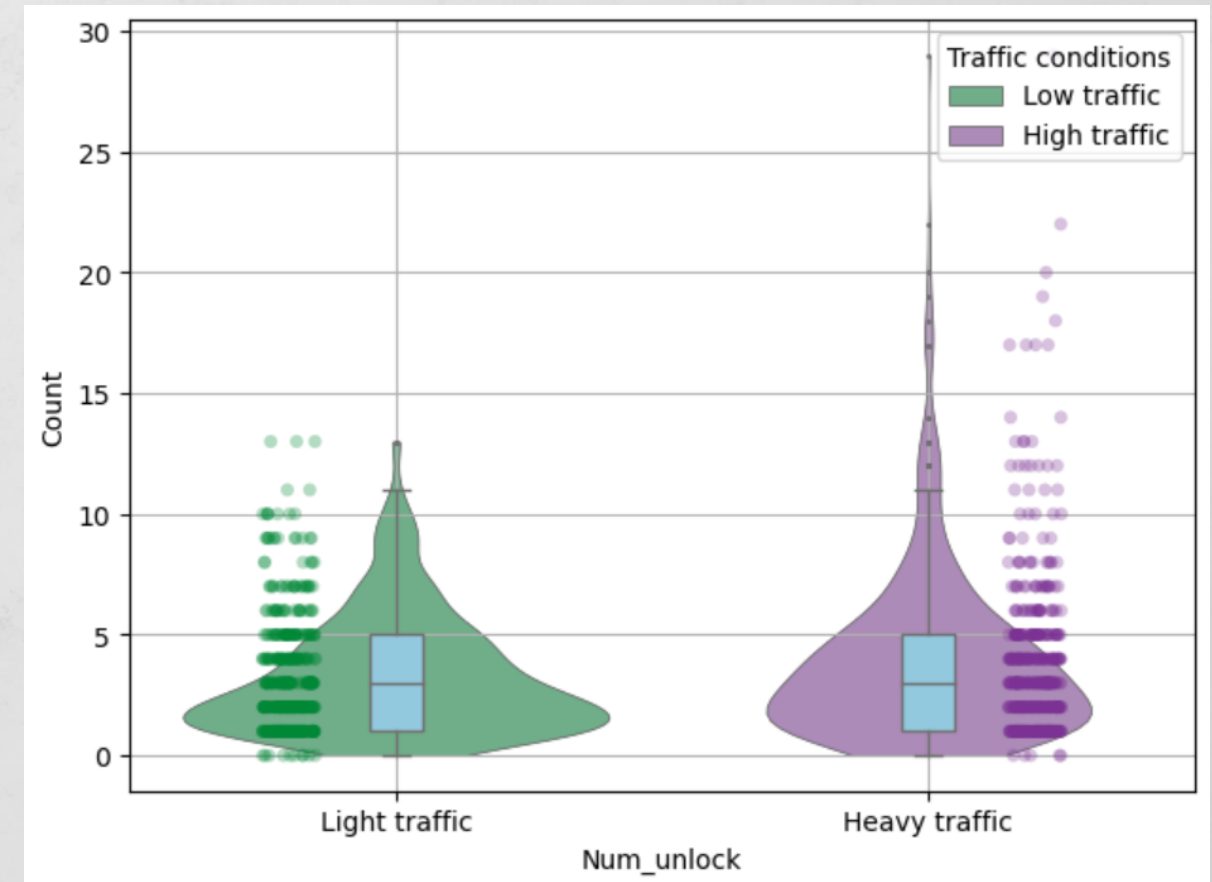
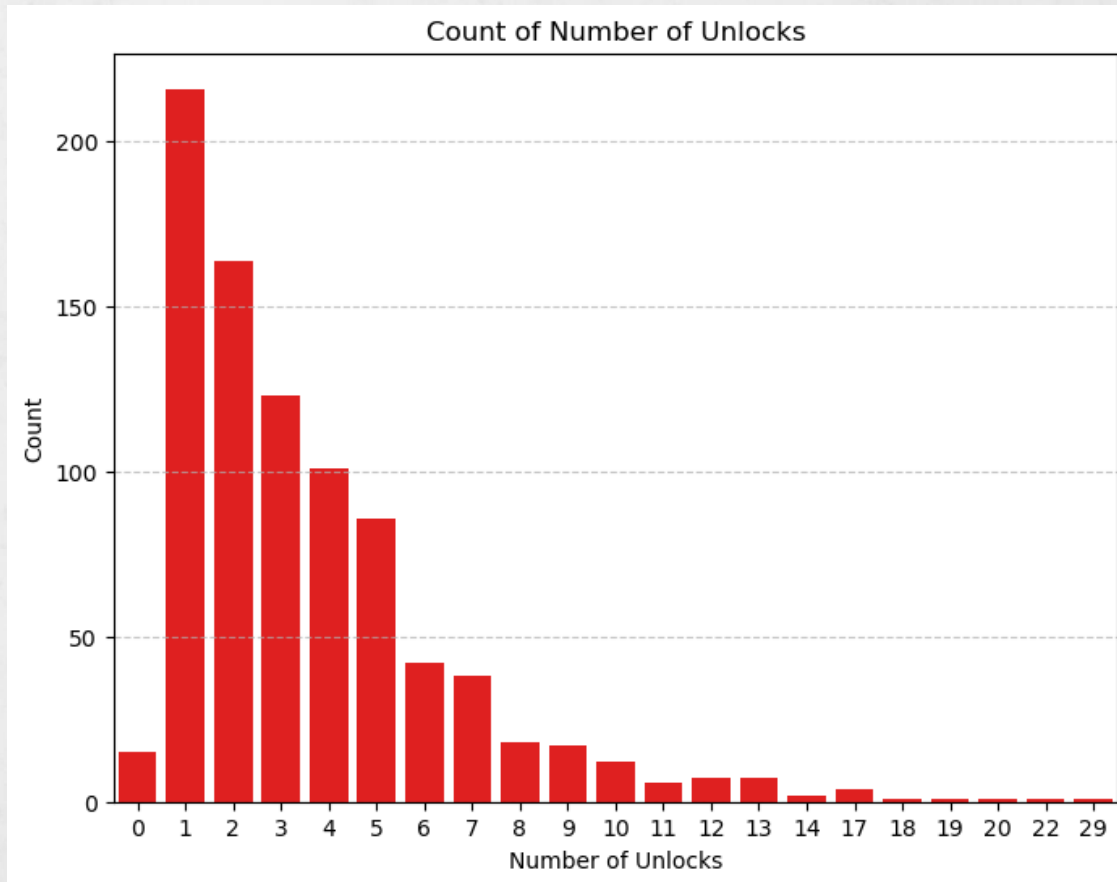
### Dependent variable

- Number of screen unlock

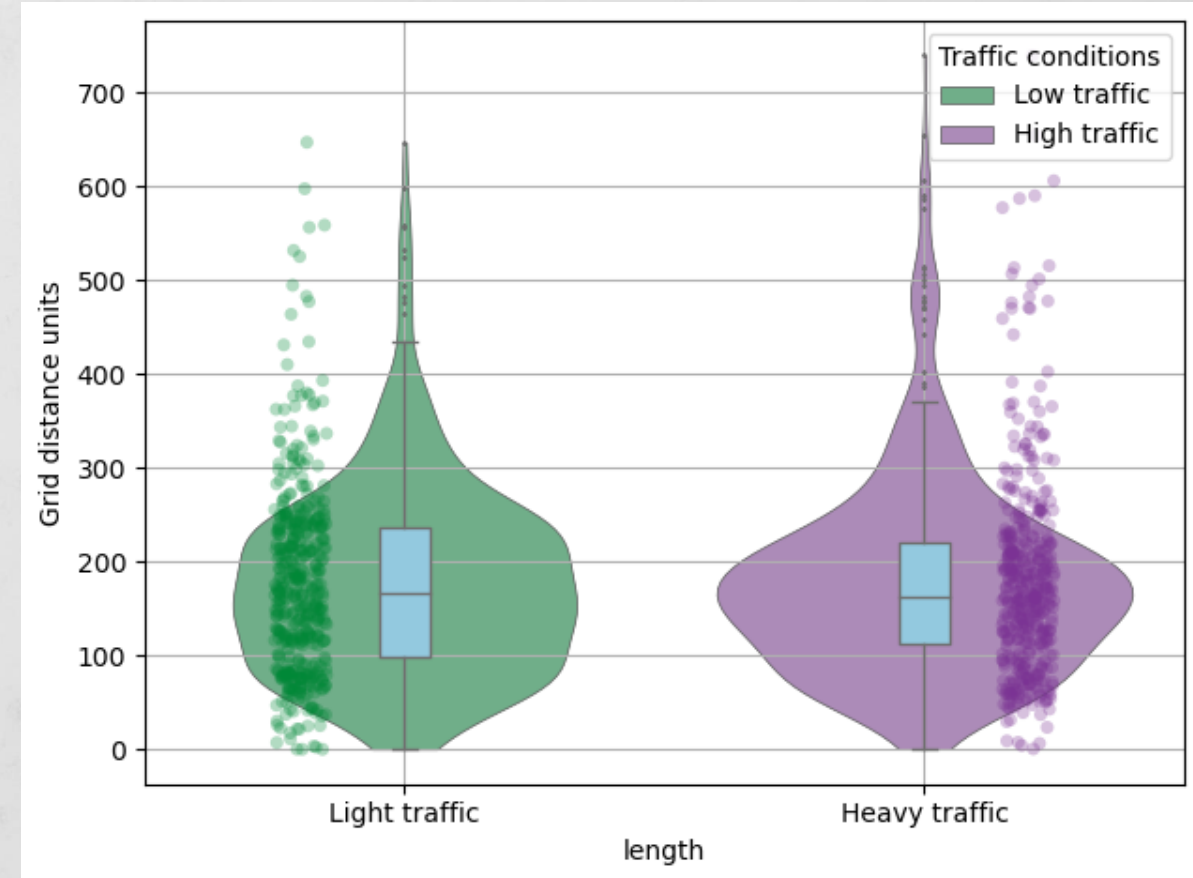
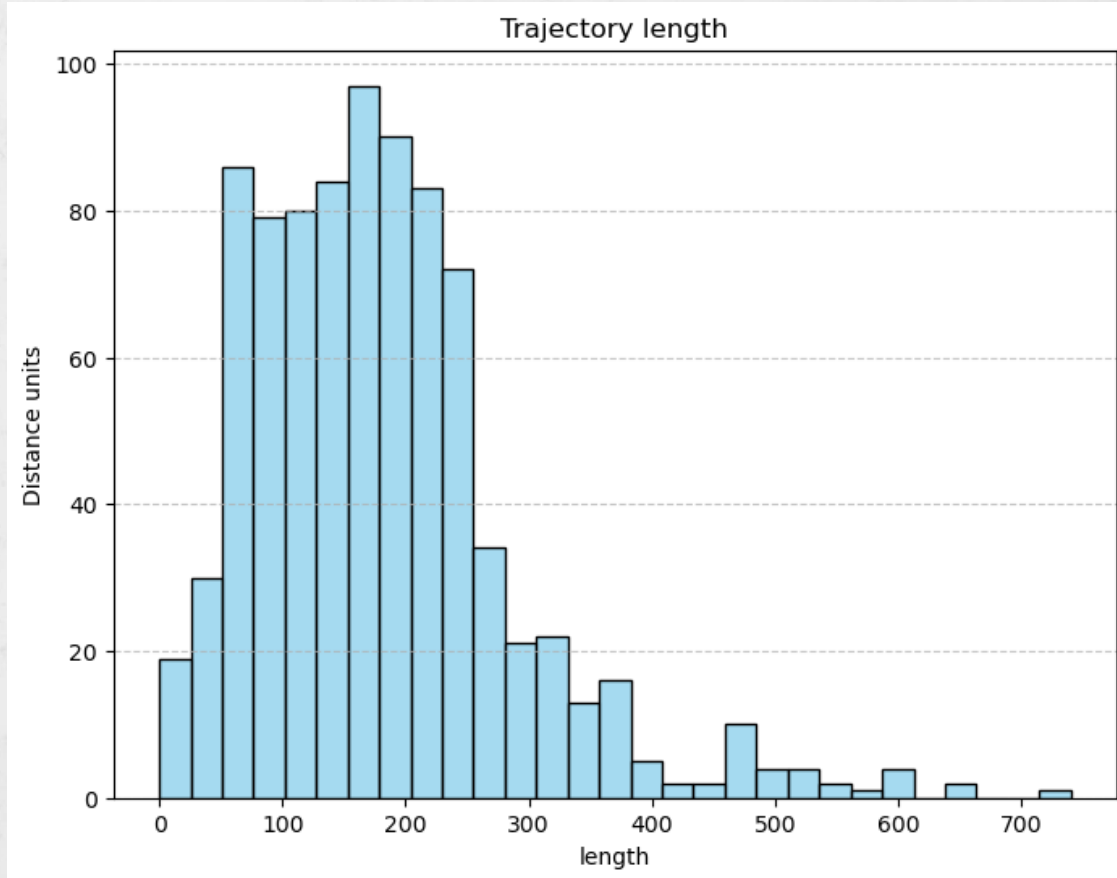
### Features

- Length
- Number of turns
- Number of POIs
- Number of crossing roads

- Number of screen unlock



- Length

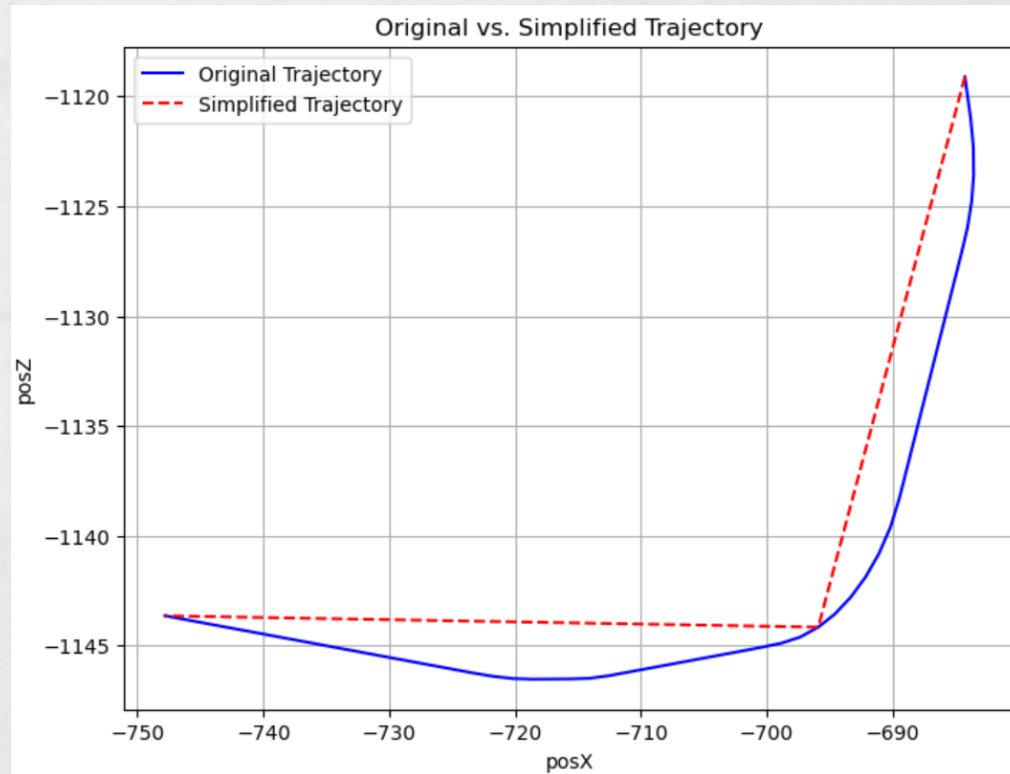


- Num\_turns
- Method:

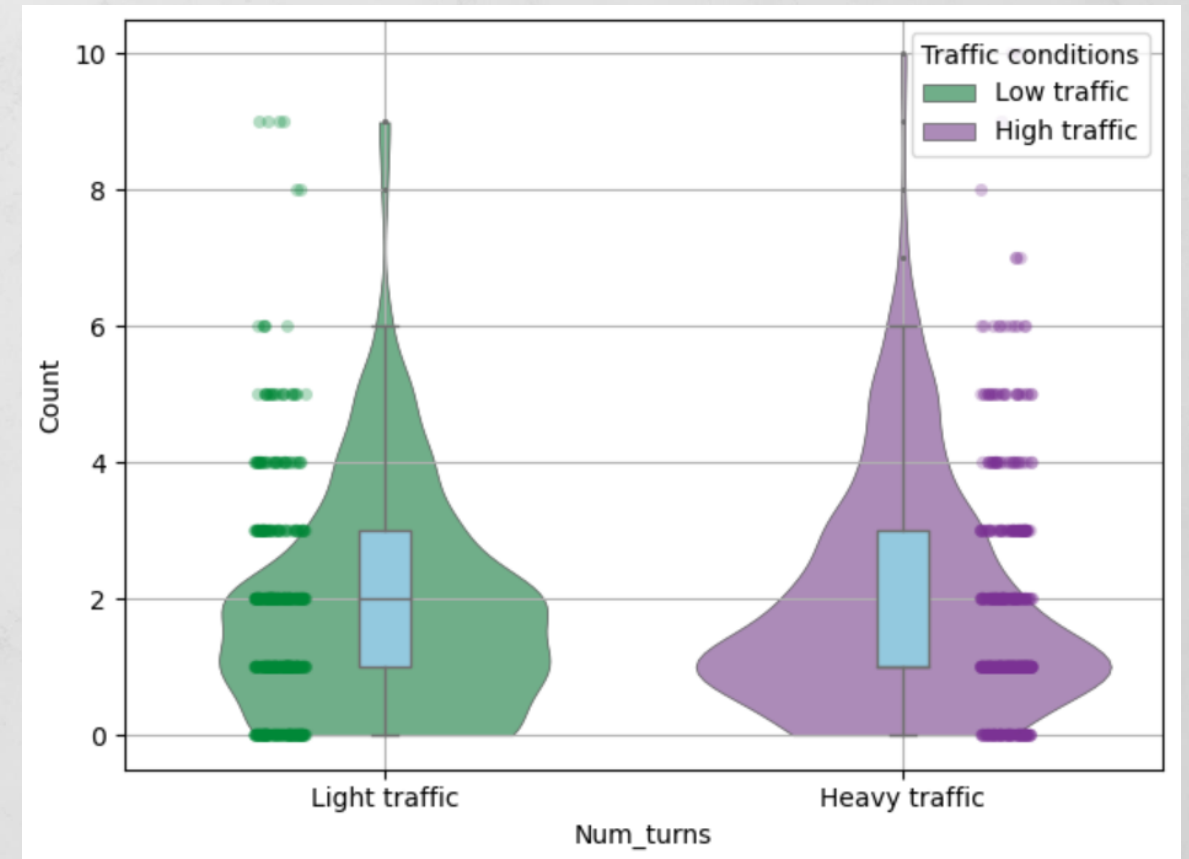
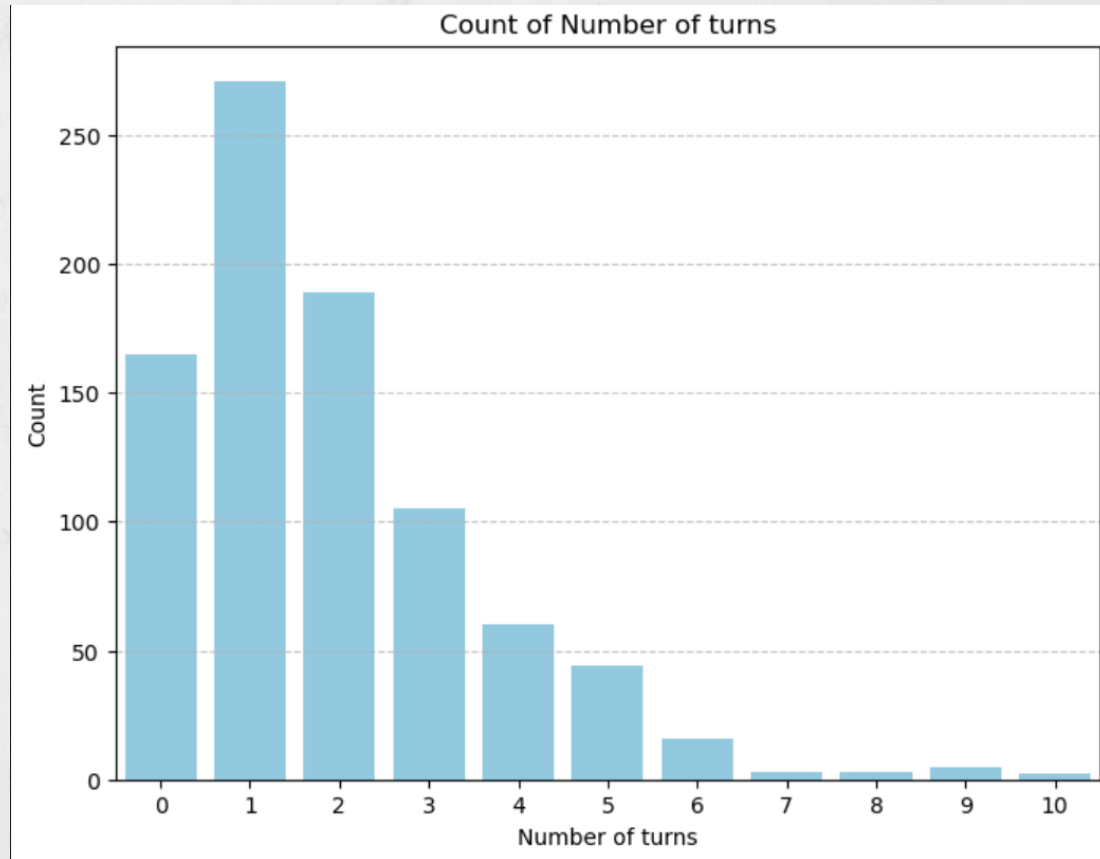
1. Douglas algorithm to simplify the trajectory

2. Set threshold for consecutive segment vector:

**Threshold angle = 30**

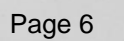


- Num\_turns : result

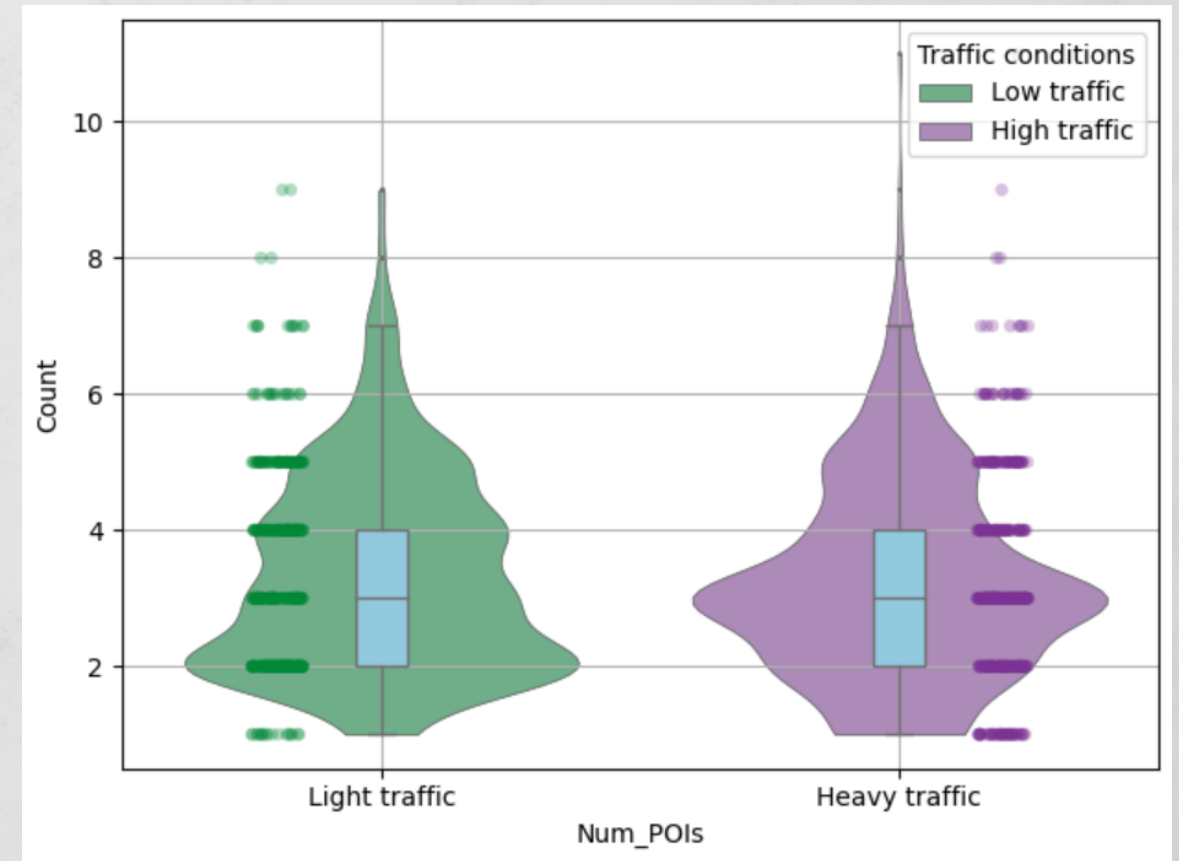
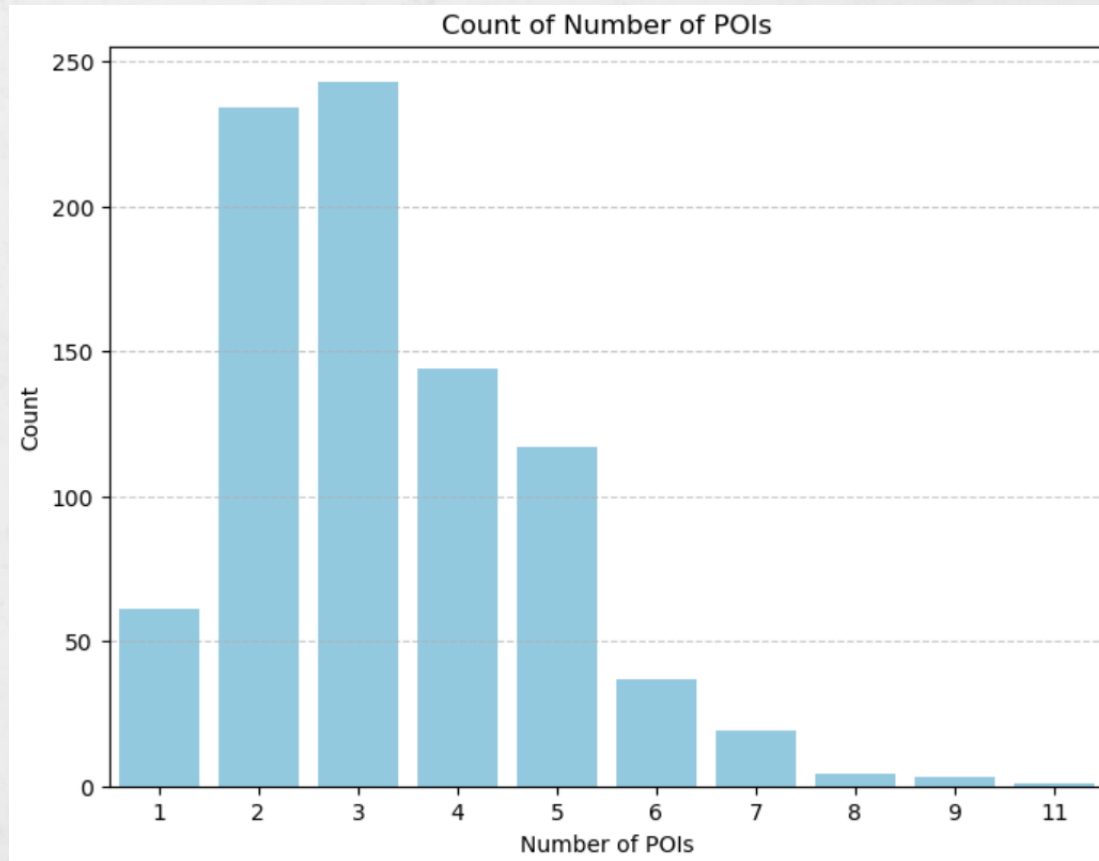




- ## 1. Create POI locations

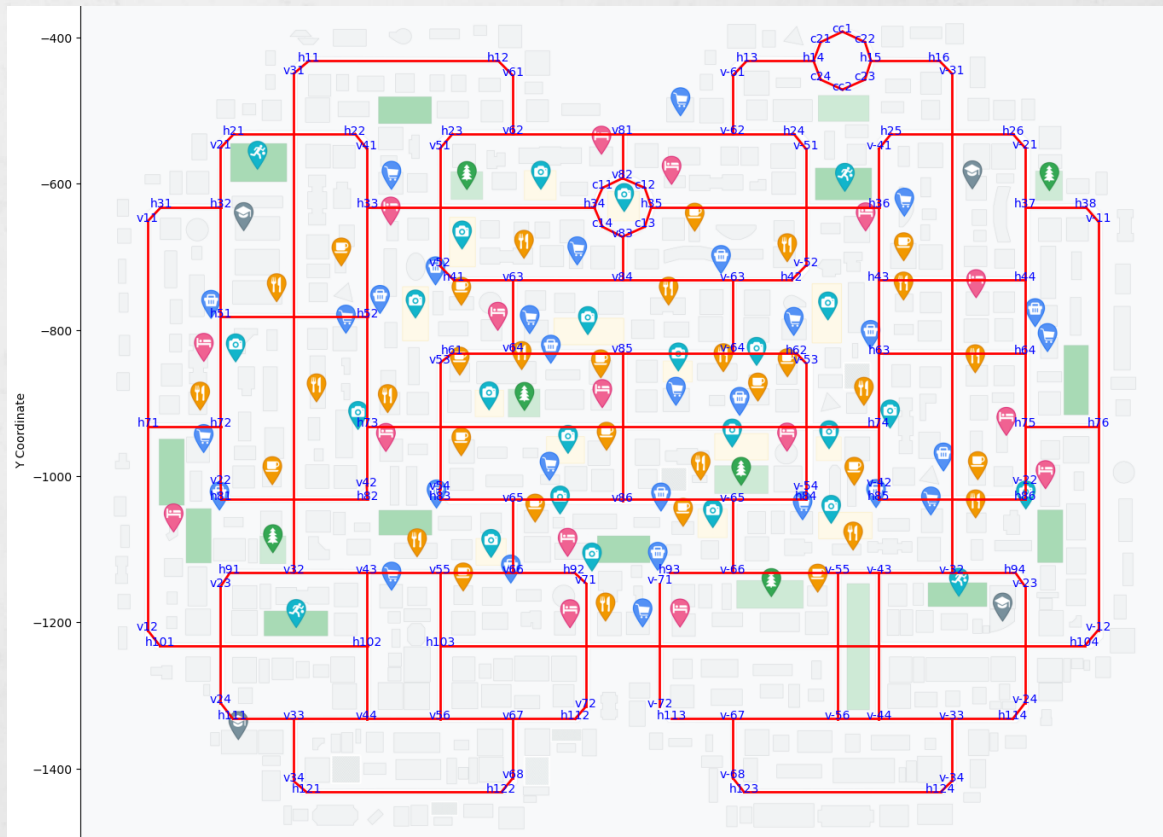


- Num\_POIs : result

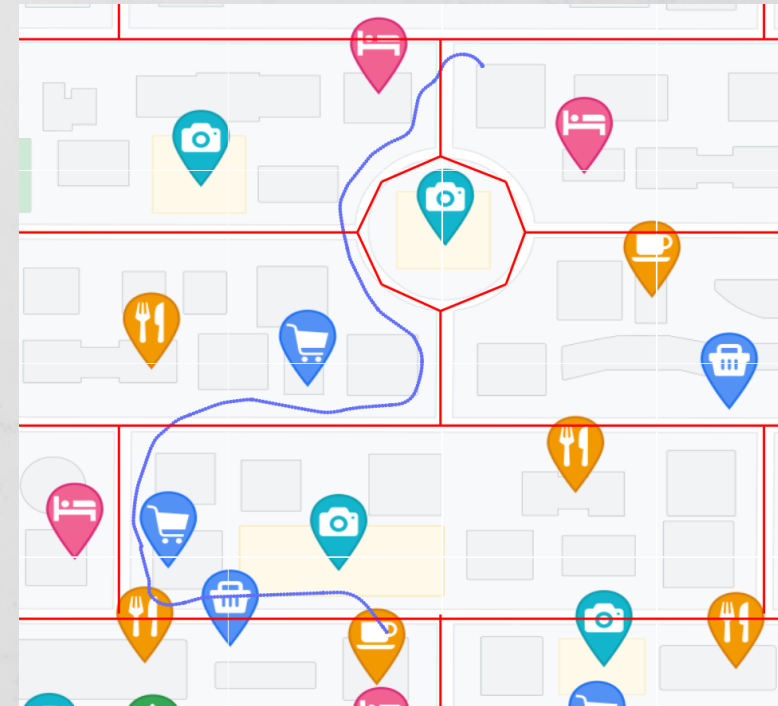


- Num\_crossroad
- Method:

## 1. Create road network

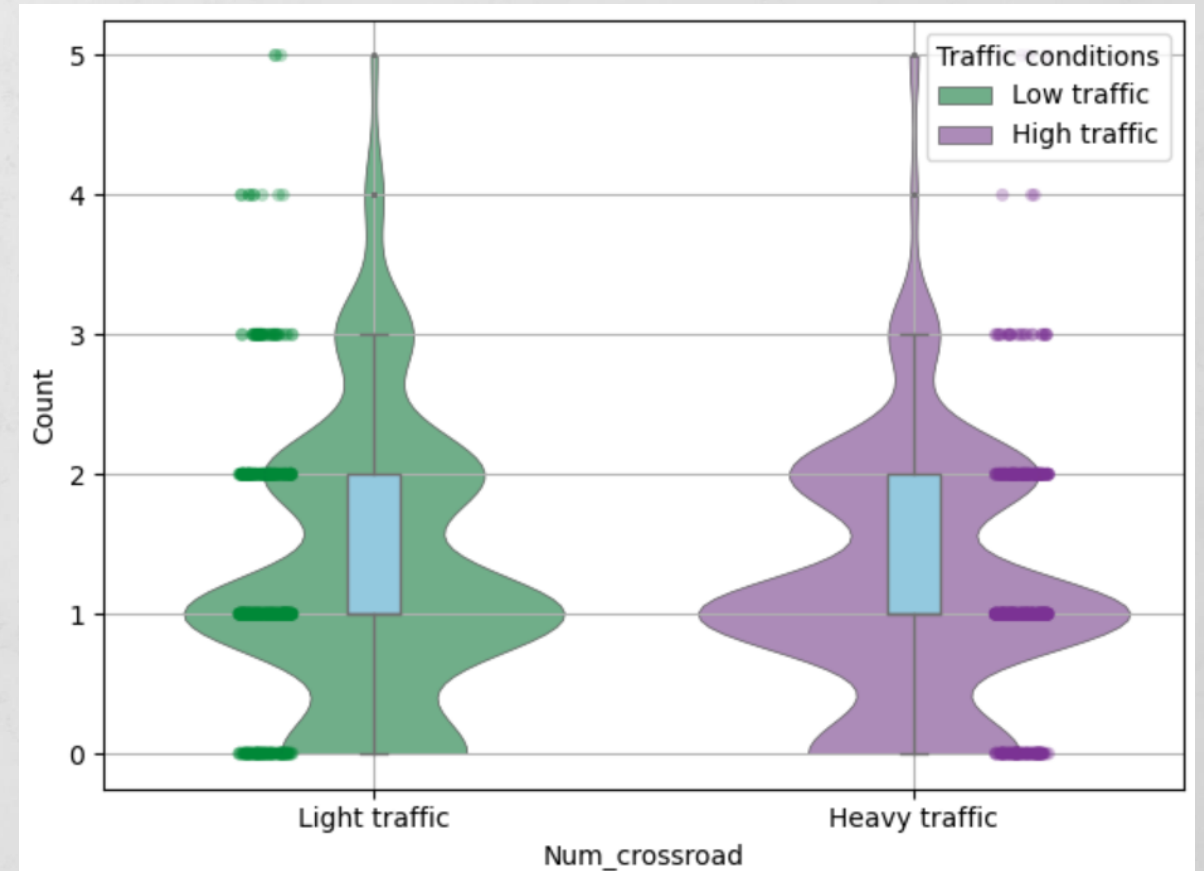
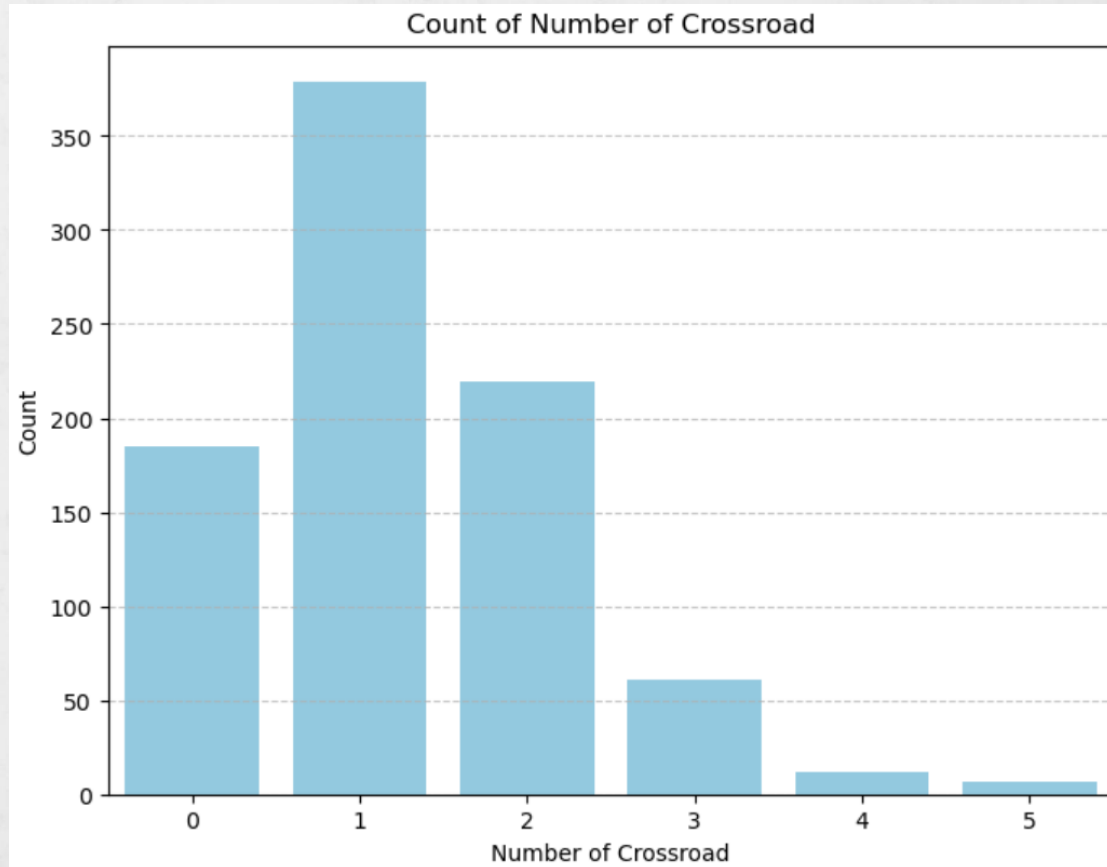


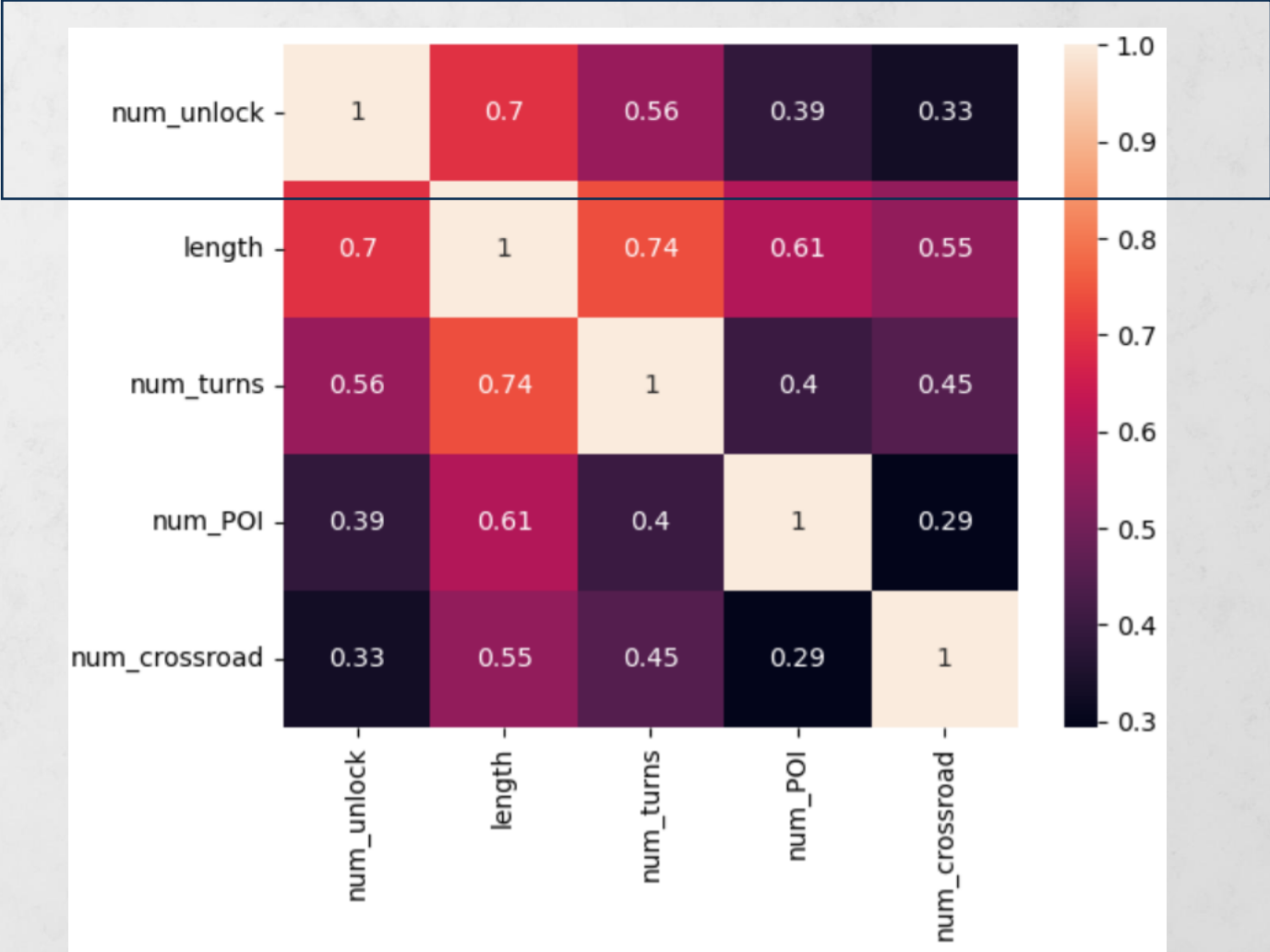
## 2. Spatial intersection between trajectory and road network





- Num\_crossroad : result





Model	Dependent variable	Predictors	MSE
Linear regression	Num_unlock	Length	5.0124
Linear regression	Num_unlock	Length, Num_turns	4.9599
Linear regression	Num_unlock	Length, Num_turns, Num_POIs	4.9454
Linear regression	Num_unlock	Length, Num_turns, Num_POIs, Num_crossroad	4.8972
Poisson regression	Num_unlock	Length, Num_turns, Num_POIs, Num_crossroad	5.5643

- Feature detection
- Outlier handling
- Model learning and experimentation