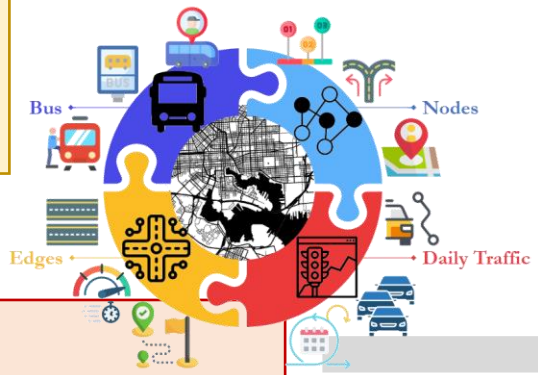
Our Work

Data Collecting and Preprocessing

Network Initialization

Model Preparation



Improved K-Shell Algorithm

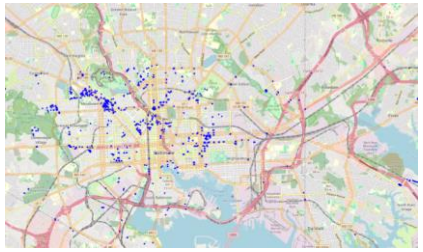
Node Weights and Edge Weights based on **Baltimore Transport Network**

$$s_i = \alpha d_i^{(w)} + (1-\alpha) n_i$$

BPR Function

AADT Fast Filling, etc.

Stakeholder Groups	Main Concerns	α	GDP Proportion
Local Residents	Convenience	$\alpha_1 = 0.7$	$GDP_1 = 35.55\%$
Freight Enterprises	Transportation Efficiency	$\alpha_2 = 0.1$	$GDP_2 = 60.54\%$
Tourists	Balanced Demands	$\alpha_3 = 0.5$	$GDP_3 = 3.91\%$

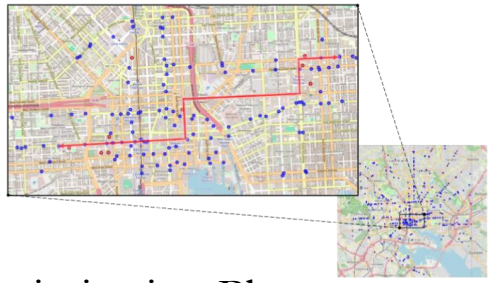


Visualization of the Baltimore Transportation Network

Sensitivity Analysis

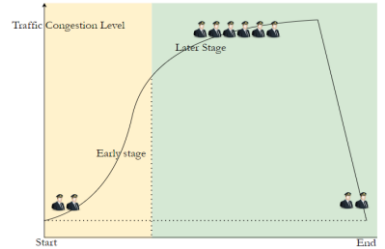
After Bridge Collapse

Problem 1: Network Importance Increase



Bus Route Optimization Plan

Problem 2: Application of the Network



Congestion Management

Problem 3: Best Improvement of the Network