Traffic Patterns in Manhattan

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Project Goals

- Apply Dijkstra and Arc-Flags algorithms to Manhattan traffic data and analyze patterns from urban planning perspective
- Disambiguate noise in traffic from actual trends
- Apply Persistent Homology and examine how robust our signatures actually are

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• Visualize these results through a map and a bar graph

Manhattan Traffic Regions

New York City Zoning Designations

All changes saved in Drive

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Major Roadways and Thoroughfar...

P Individual styles

💪 FDR/Harlem River Drive

💪 Cross Bronx Expressway

Districts 1

Individual styles

Far North/Hudson

Anhattanville/Morningside

🦉 Harlem

Upper East Side

💐 Upper West Side

a Midtown

Thion Square/Gramercy Park



Dijkstra's Algorithm to Find Fastest Route



Fastest route between two nodes on map vs. An abstract representation

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Bar Graph



Bar graph of Persistent Homology of 100 intersections and around 200 roads in mid-Manhattan

Spatial Distribution of Persistent Homology



Spatial distribution of Persistent Homology Algorithm

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