

Introduction

- Gov. Andrew Cuomo introduced the social distancing policy on **March 20, 2020**
- Social distancing is efficient in slowing down pandemics as COVID-19
- The efficiency depends on **degree of compliance**

Objectives

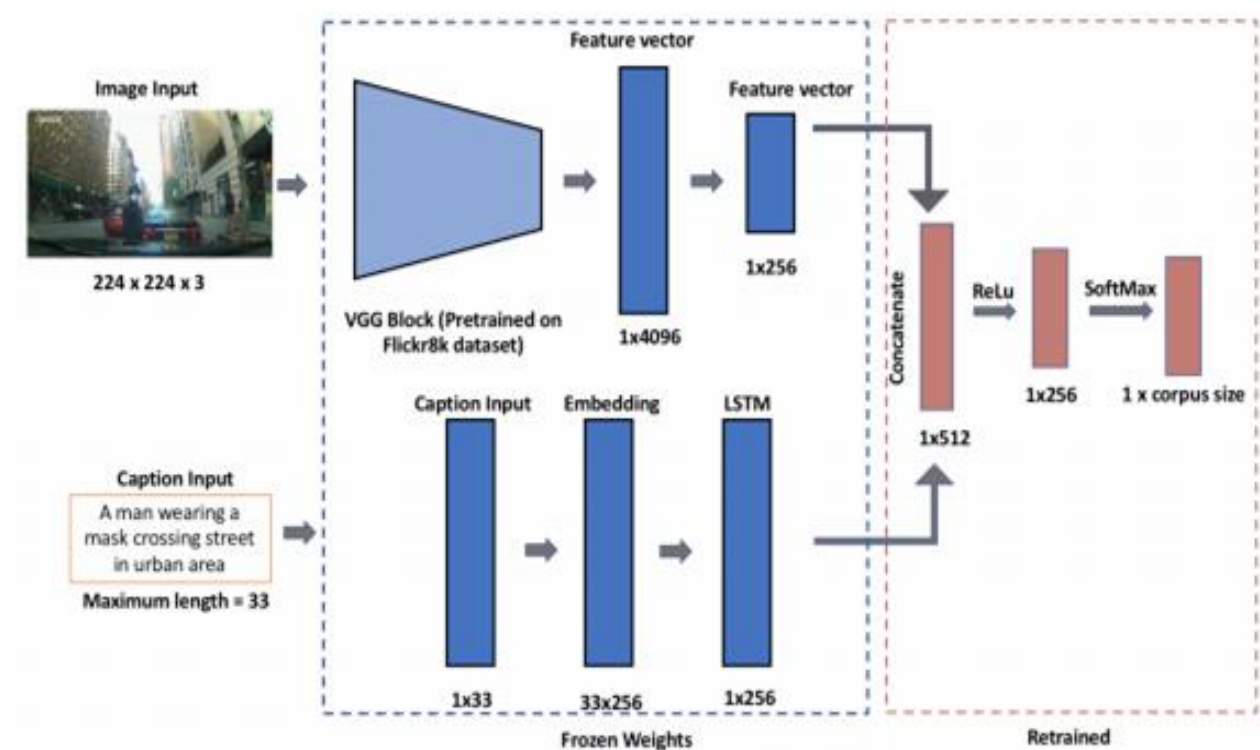
- We want to measure compliance with social distancing policies and its efficiency in containing the pandemic
- Dataset:** traffic cam and dashcam images from March to August 2020 in three NYC boroughs -- Brooklyn, Manhattan, and Queens

Methodology

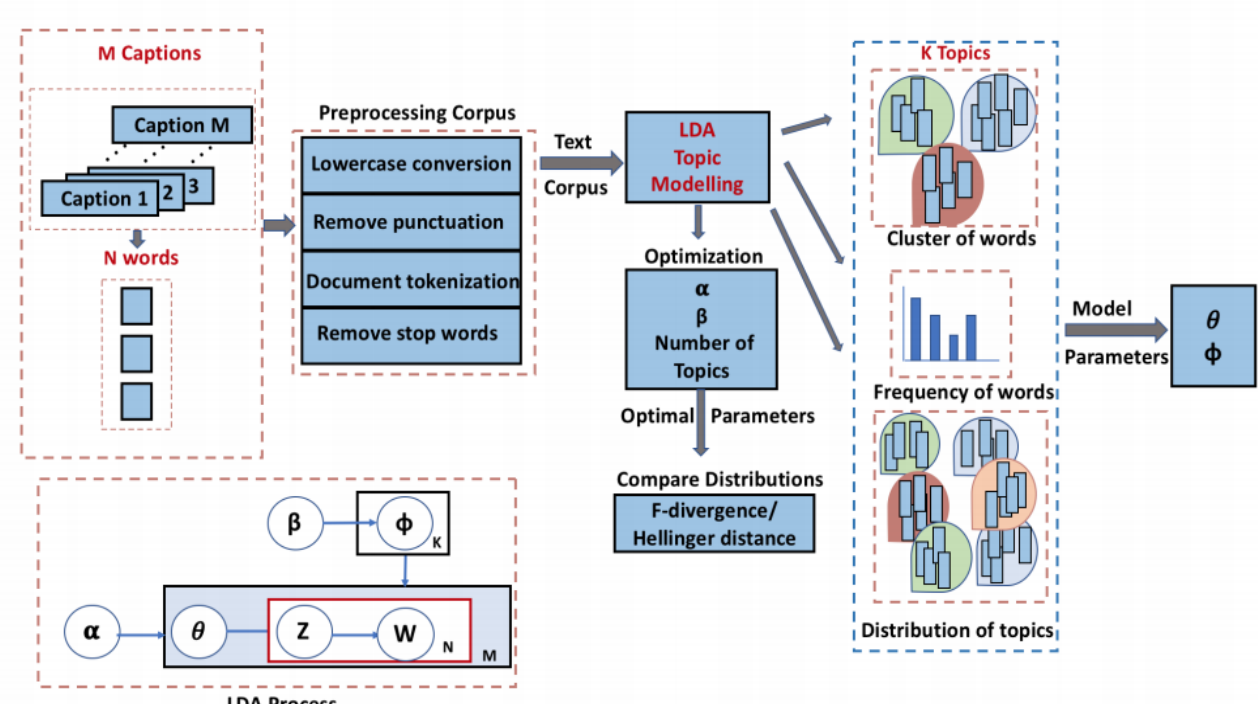
We conducted analysis with two methods:

1. Natural Language Processing

- Image-to-Caption Model**
 - generates 10 accurate captions for an image

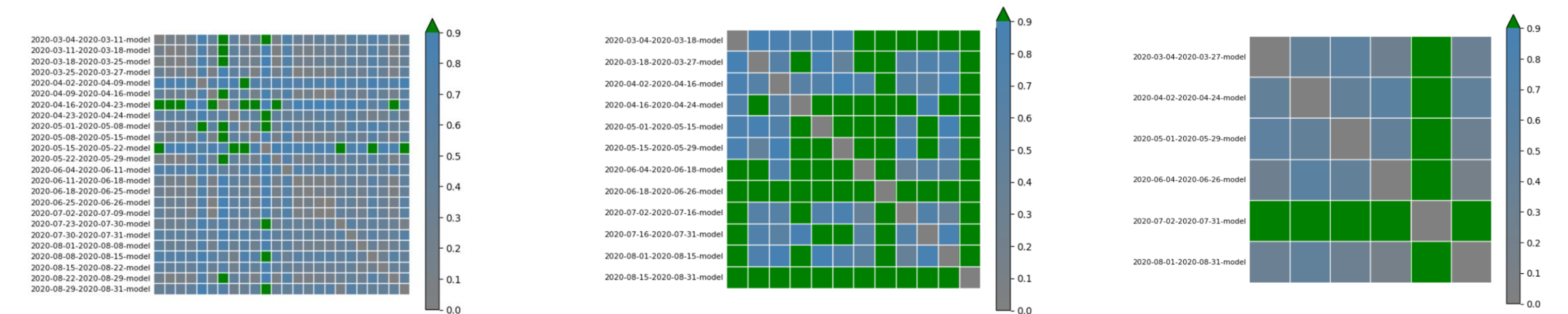


- Latent Dirichlet Allocation**
 - groups similar words together and brings out latent topics

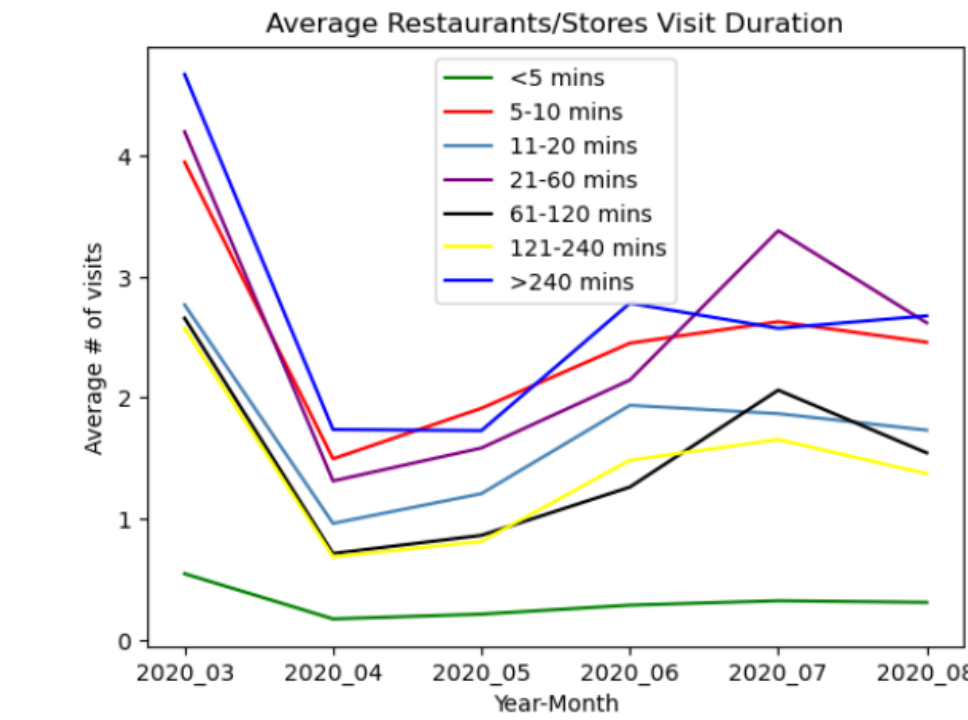


Analysis

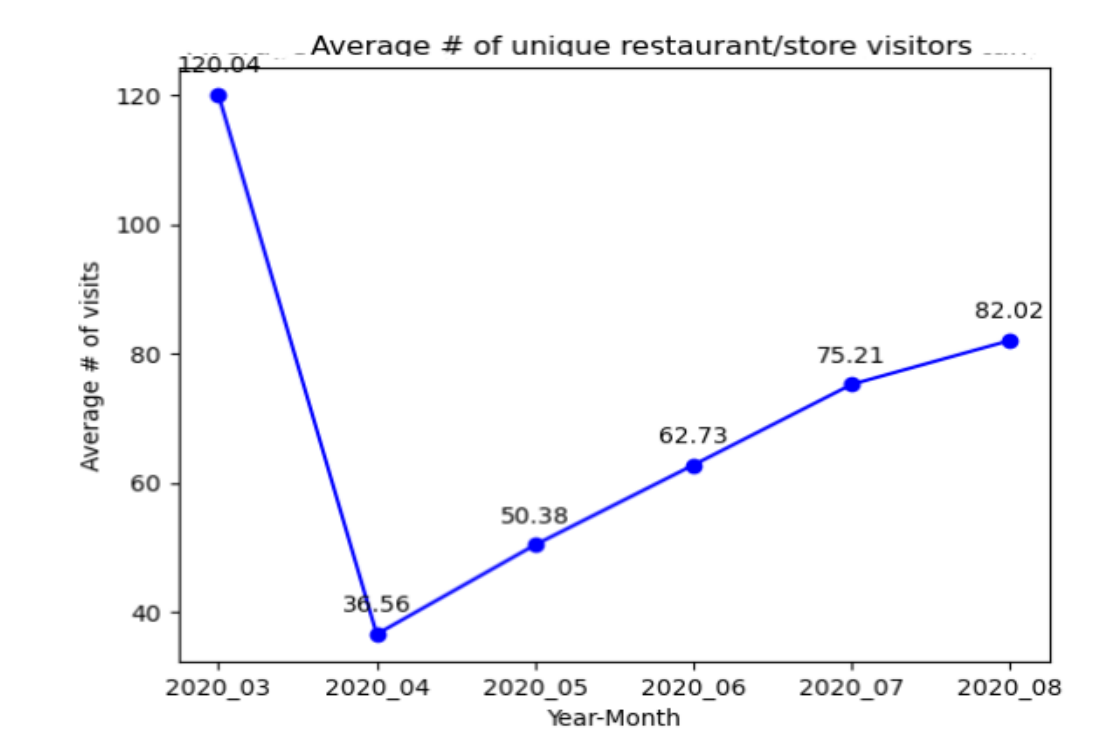
From Natural Language Processing



- Distance heat map from weekly, bi-weekly, monthly time bins. The green squares showcase that specific time frames are sparsely different from the rest. April, June, and July are sparsely different from the rest of the months.

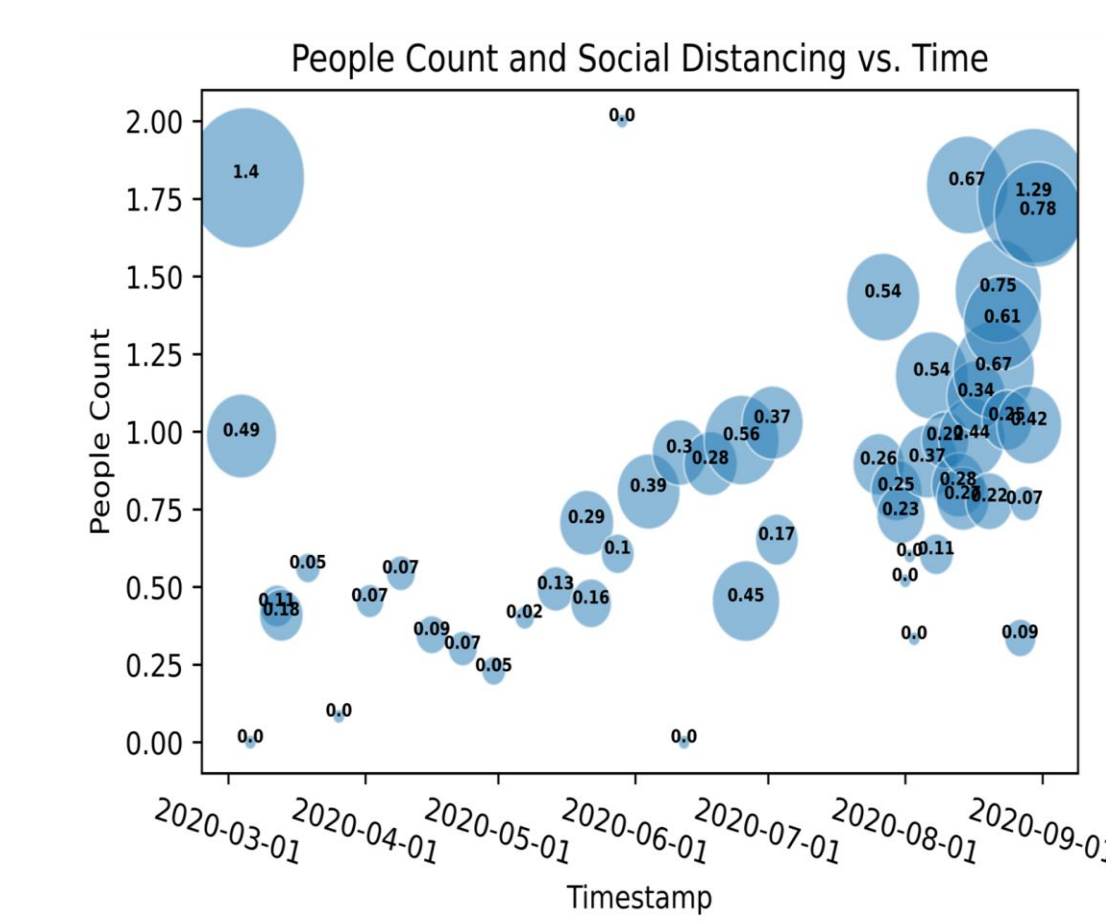


- Safegraph data showing restaurant/store visitations in NYC during the pandemic

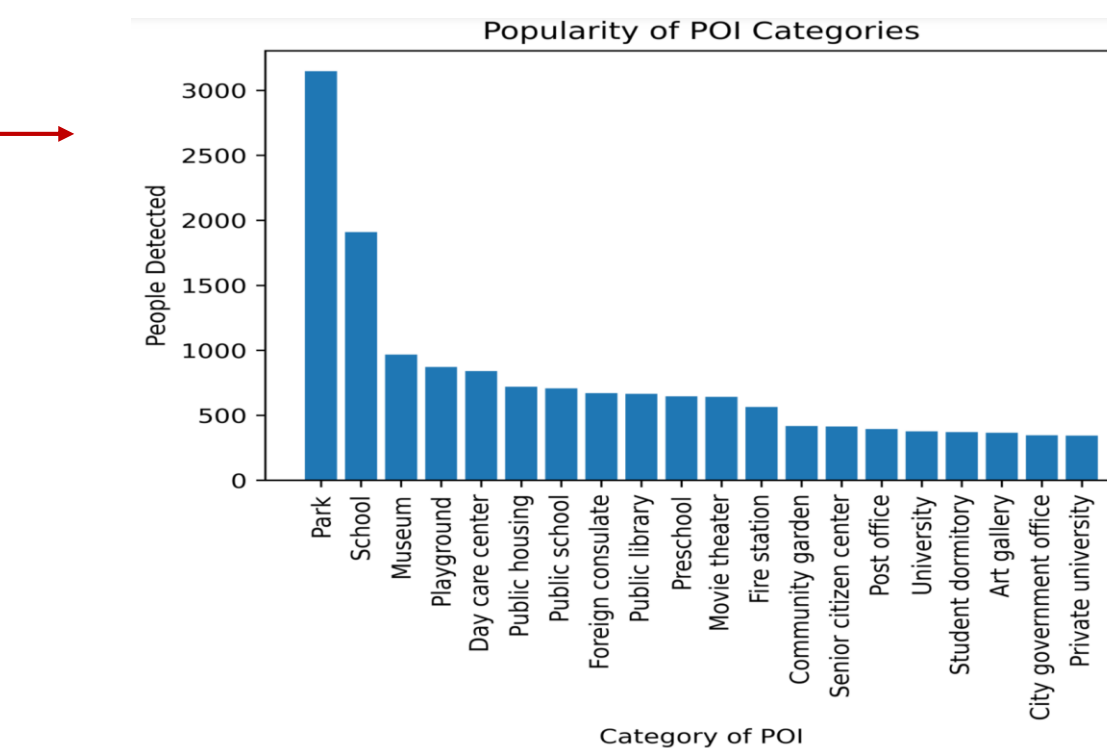


From Computer Vision

- People count and distancing graph where the radius of the circle represents social density

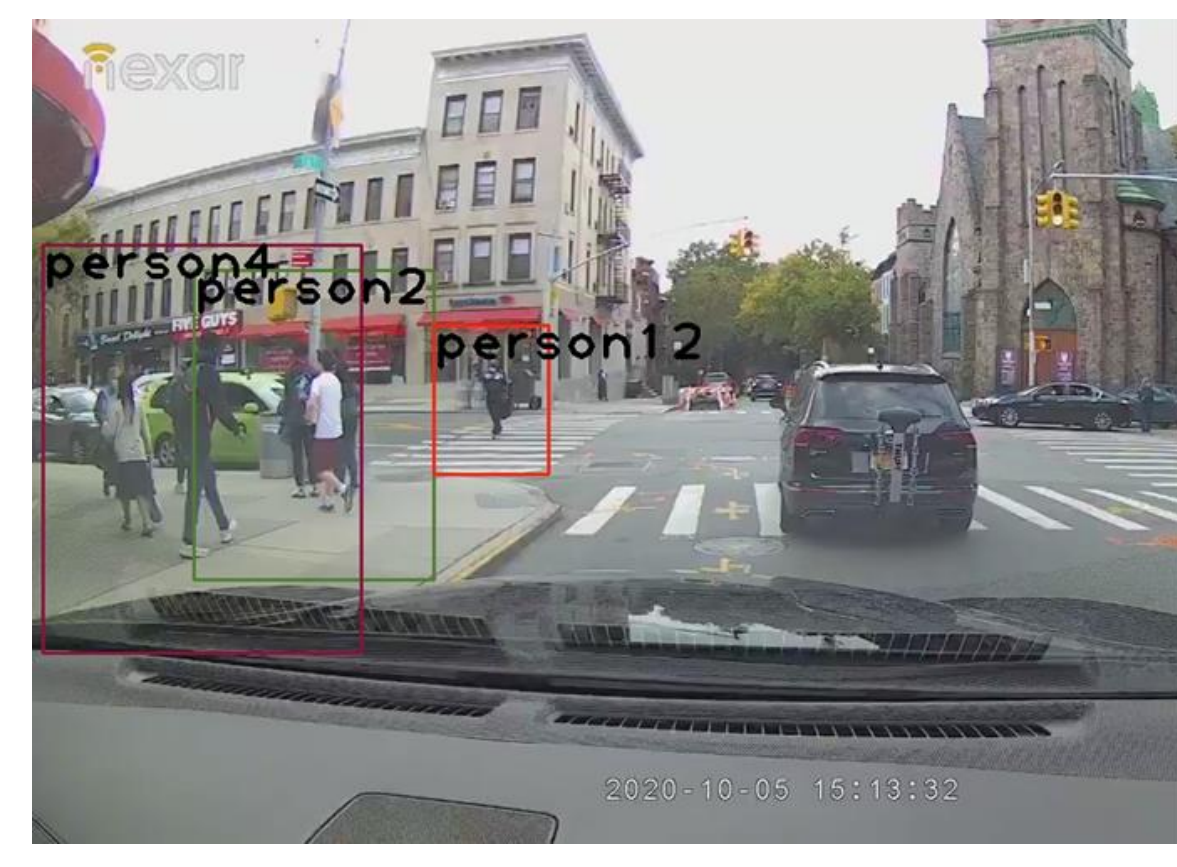


- Visitation count at different POIs near the target boroughs

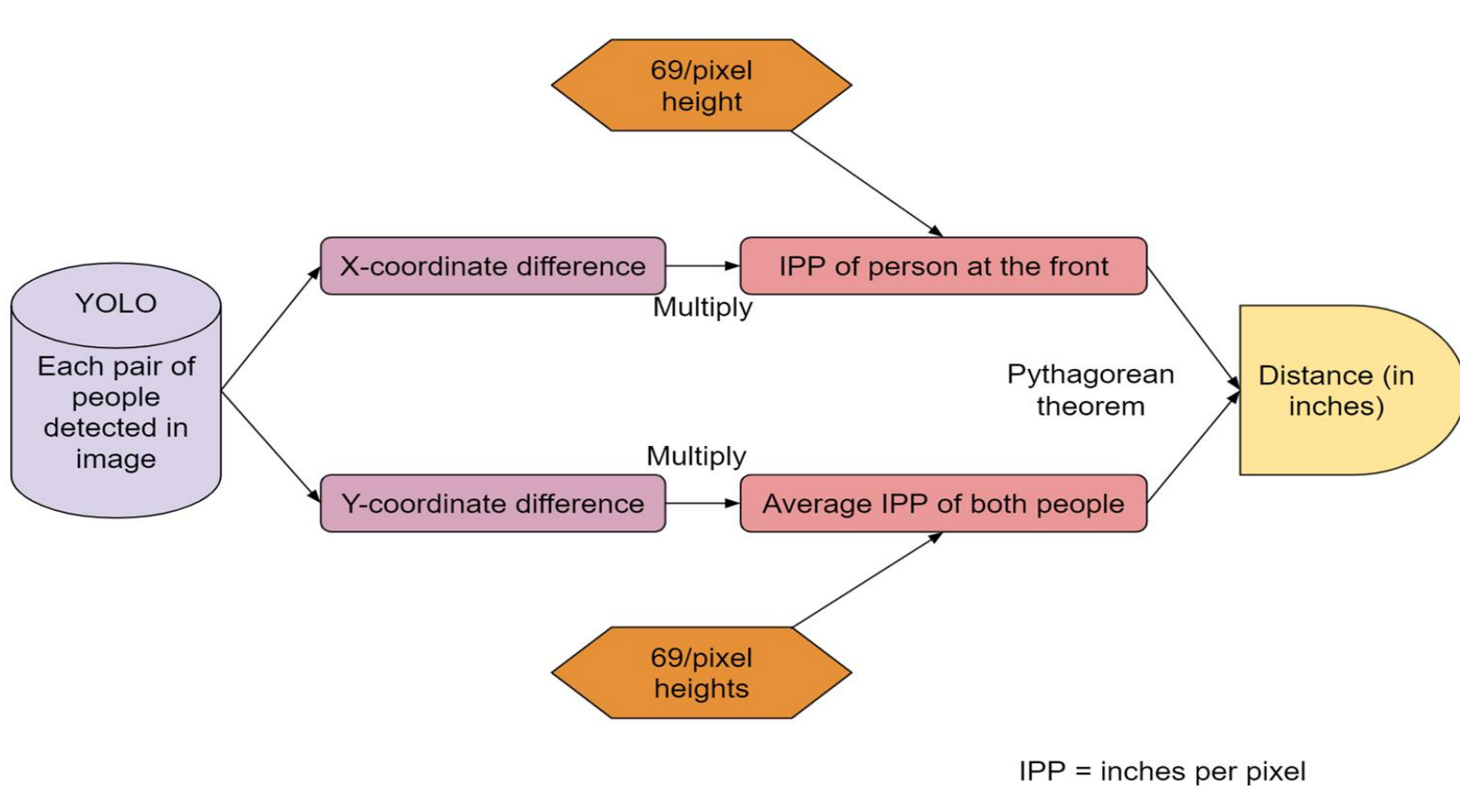


2. Computer Vision

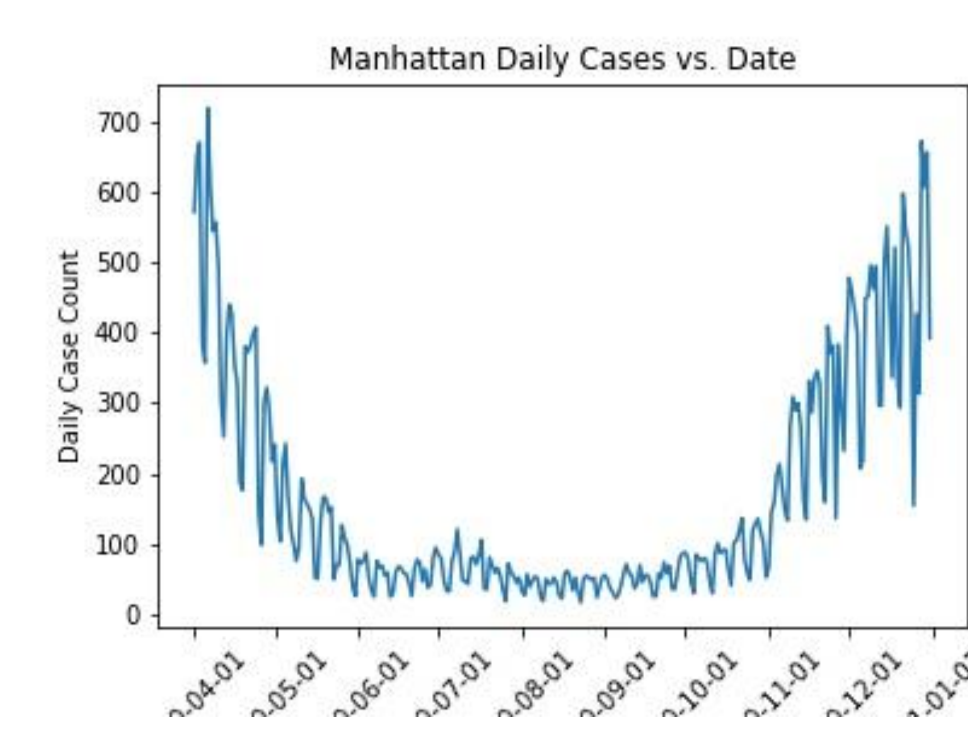
- YOLO - You Only Look Once**
 - detects people in images



- Distance Estimation**
 - approximates the distance between people in an image



Final Comparison



- Cases increase in the Fall as people enter the outdoors Summer onwards

Future Plans

- Publish our findings together with the help of our advisors at the CPI Lab
- Finalize a project website and wiki linked on SI-2021 Orbit page