


Wize: Traffic Object Detection

Voxel51 Visual AI Hackathon @NYC

Dataset: NYC Traffic Cameras

- We collected our own small dataset from real-time NYC traffic cameras:
<https://webcams.nyctmc.org/cameras-list>
- Proceeded to collect 60 images in total from three different traffic points in NYC; all of them on the same avenue, but different street.
- Specifically, 8th & 44th, 8th & 49th and 8th & 57th
- Loaded our dataset with the FiftyOne library

FiftyOne-based Dataset Preview

 **FiftyOne** wise-dataset

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Have a Team?

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● Unsaved view

use Output

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TAGS

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☒ sample tags 20 of 58 ^

☒ 8_ave_57_str 20

☐ 8_ave_44_str 0 of 20

☐ 8_ave_49_str 0 of 18

☒ Show samples with tags

Reset

☐ label tags v

METADATA

☐ metadata.size_bytes v

☐ metadata.mime_type v

☐ metadata.width v

☐ metadata.height v

Samples + ● Unsaved 🗒

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20 of 58 samples

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Sun Oct 27 2024 11:09:39

Sun Oct 27 2024 11:10:40

Sun Oct 27 2024 11:10:52

Sun Oct 27 2024 11:11:07

Sun Oct 27 2024 11:11:17

8_ave_57_str

8_ave_57_str

8_ave_57_str

8_ave_57_str

8_ave_57_str

Sun Oct 27 2024 11:11:20

Sun Oct 27 2024 11:11:51

Sun Oct 27 2024 11:12:01

Sun Oct 27 2024 11:12:07

Sun Oct 27 2024 11:12:13

8_ave_57_str

8_ave_57_str

8_ave_57_str

8_ave_57_str

8_ave_57_str

Sun Oct 27 2024 11:12:16

Sun Oct 27 2024 11:09:40

Sun Oct 27 2024 11:12:27

Sun Oct 27 2024 11:09:50

Sun Oct 27 2024 11:10:05

8_ave_57_str

8_ave_57_str

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Sun Oct 27 2024 11:10:13

Sun Oct 27 2024 11:10:19

Sun Oct 27 2024 11:10:27

Sun Oct 27 2024 11:10:33

Sun Oct 27 2024 11:10:41

8_ave_57_str

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FiftyOne-based Object Detection

Feature: Filter the detected bounding boxes based on the model's confidence

The screenshot displays the FiftyOne web interface for a dataset named "wise-dataset". The interface is divided into a left sidebar and a main content area.

Left Sidebar:

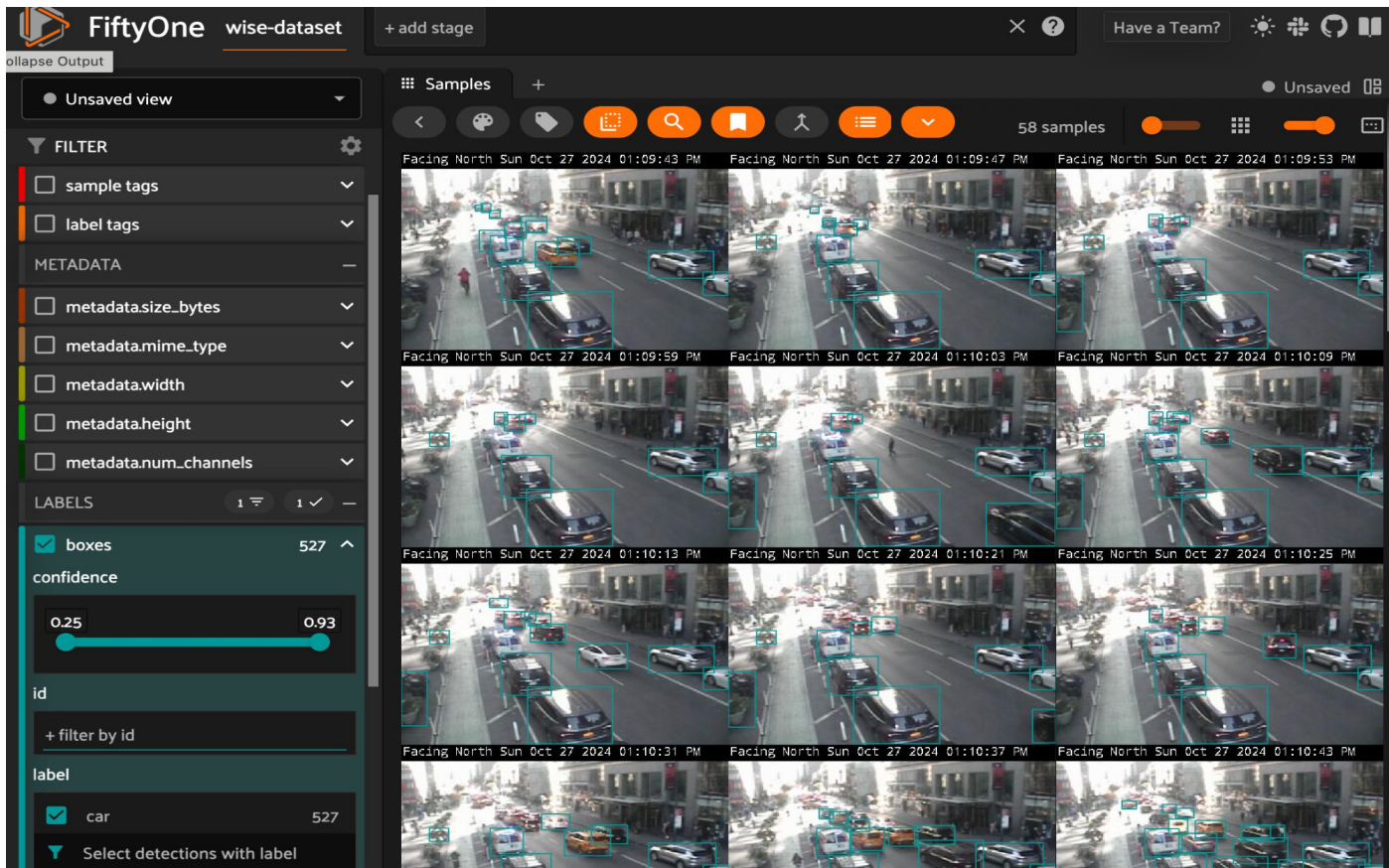
- Unsaved view** (dropdown)
- FILTER** (toggle)
- metadata.num_channels** (dropdown)
- LABELS** (1 ✓)
- boxes** (checked, 896)
- confidence** (slider from 0.25 to 0.93)
- id** (input field with "+ filter by id")
- label** (list of labels with counts):
 - car: 527
 - person: 278
 - traffic light: 31
 - bus: 31
 - truck: 23
 - bicycle: 3
 - motorcycle: 2

Main Content Area:

- Samples** (+)
- 58 samples** (slider)
- Grid of 9 samples:**
 - Each sample is a street scene image with bounding boxes around detected objects.
 - Timestamps for each sample: Facing North Sun Oct 27 2024 01:09:43 PM, 01:09:47 PM, 01:09:53 PM, 01:09:59 PM, 01:10:03 PM, 01:10:09 PM, 01:10:13 PM, 01:10:21 PM, 01:10:25 PM, 01:10:31 PM, 01:10:37 PM, 01:10:43 PM.

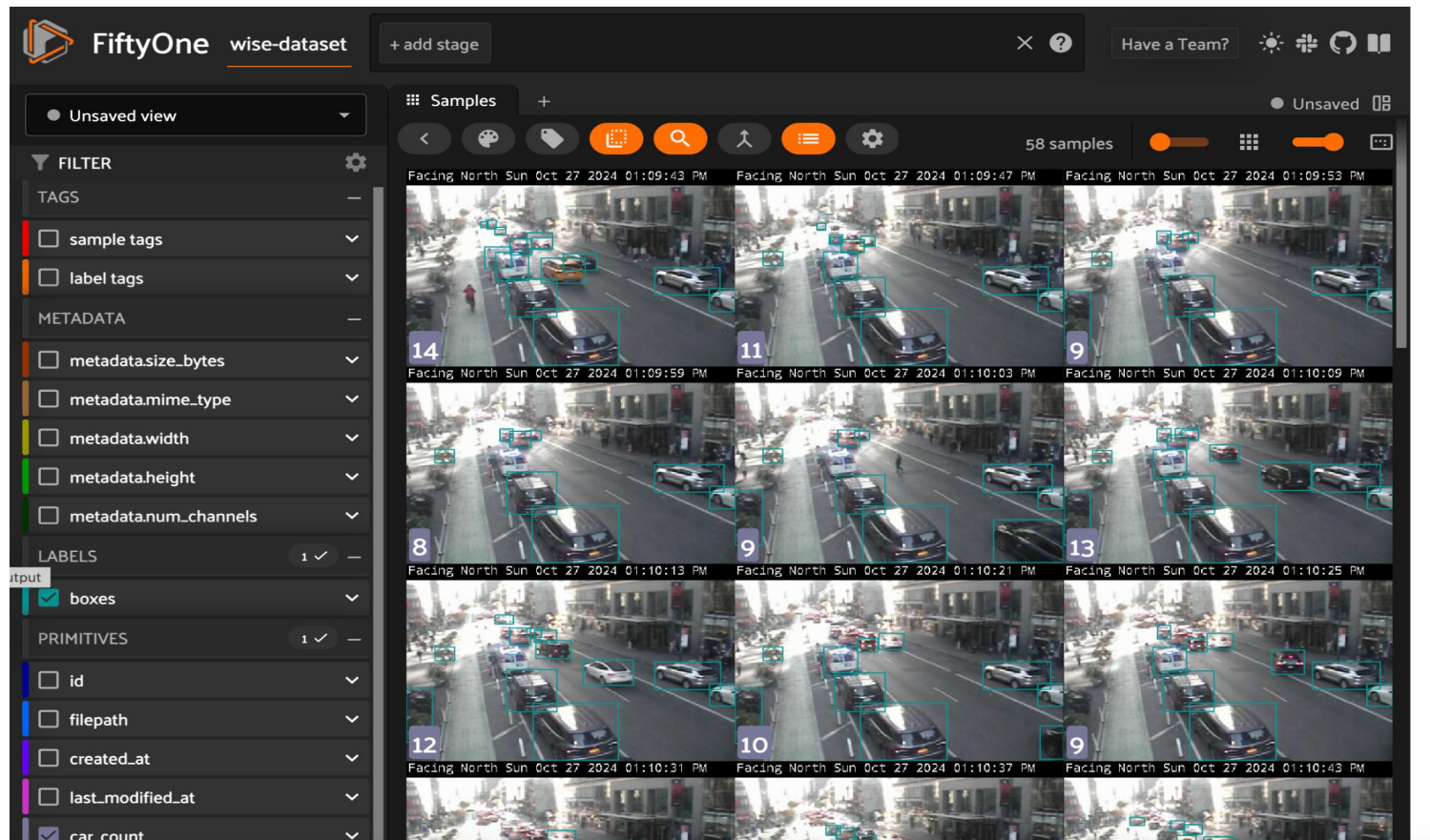
FiftyOne-based Object Detection

Feature: Filter the detected bounding boxes based on the model's confidence, as well as the model's metadata

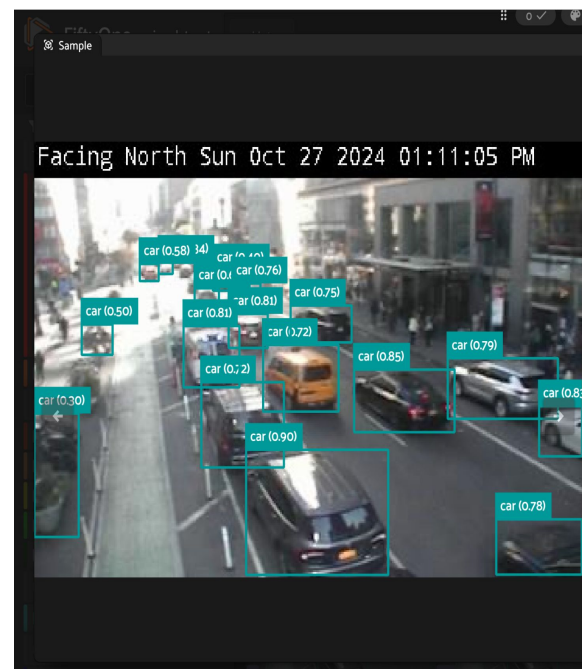
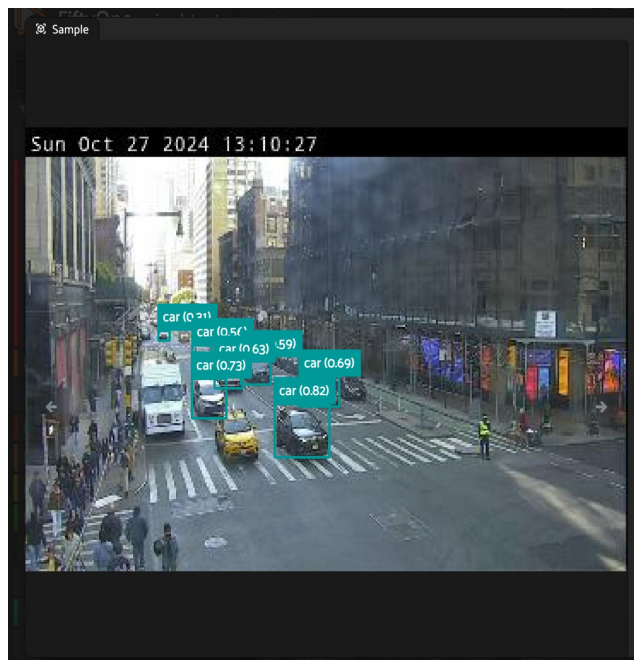


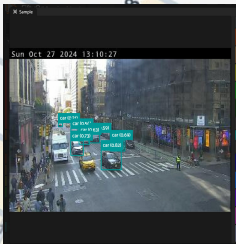
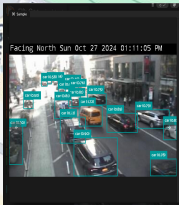
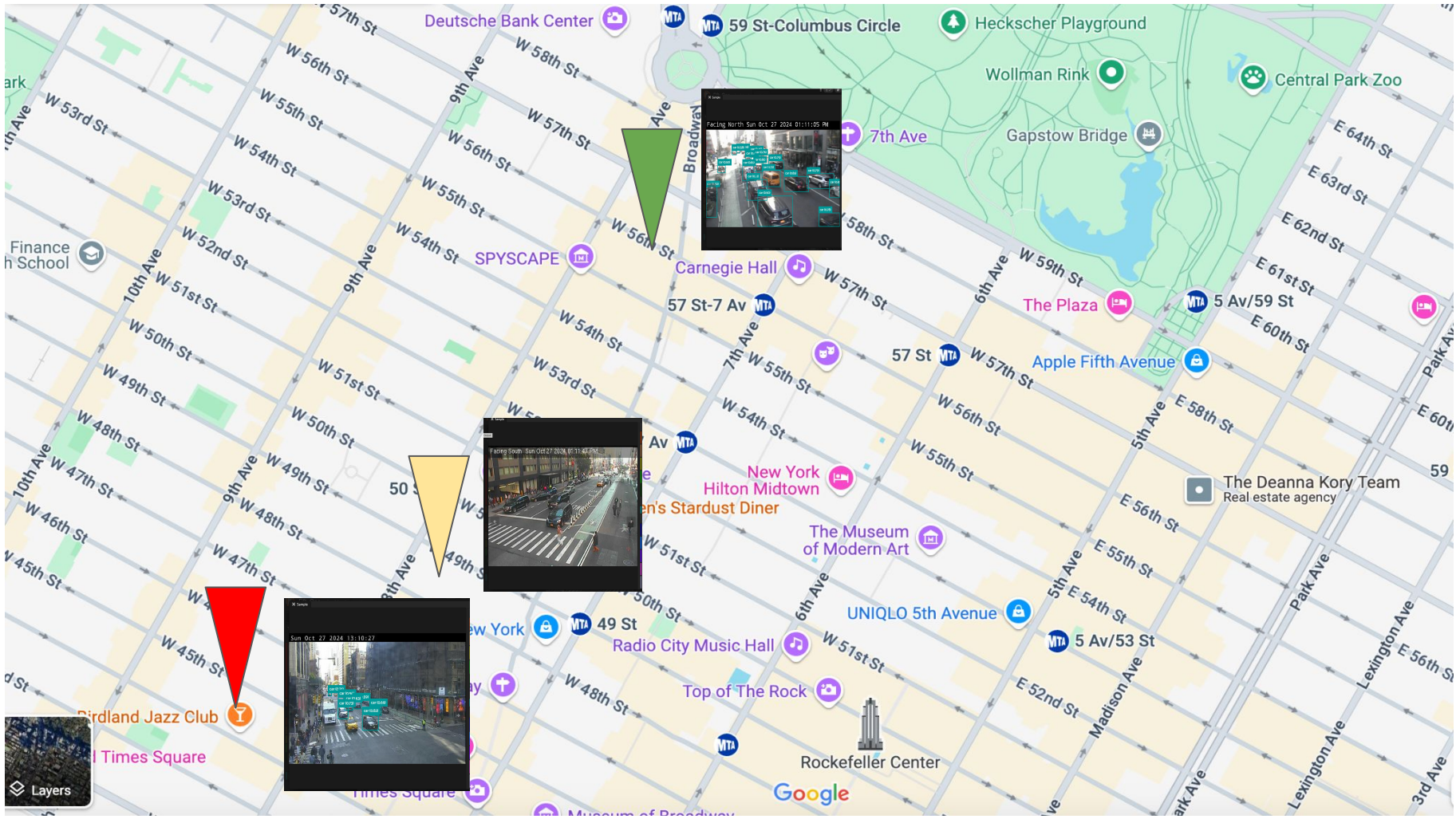
FiftyOne-based Object Detection

Feature: Count the number of cars shown in the image.



Traffic analysis by looking at temporally sequential images in Manhattan





Objectives

- Approximately measure the real-time traffic in the streets of Manhattan based on data fetched from NYC traffic camera lights.
- Offer a more broad & accurate view of the traffic around Manhattan and personalize the insights using FiftyOne library.

Use Case: Let's imagine that I want to move from Midtown to Lower Manhattan. Google Maps suggests that I should drive down the 6th avenue, but I absolutely hate driving on the 6th. I can optimize my route based on my personal preferences using our product.