The Write-up of CV

1 Project overview: This section should contain a brief description of the project and what we are trying to achieve. Why is object detection such an important component of self-driving car systems?

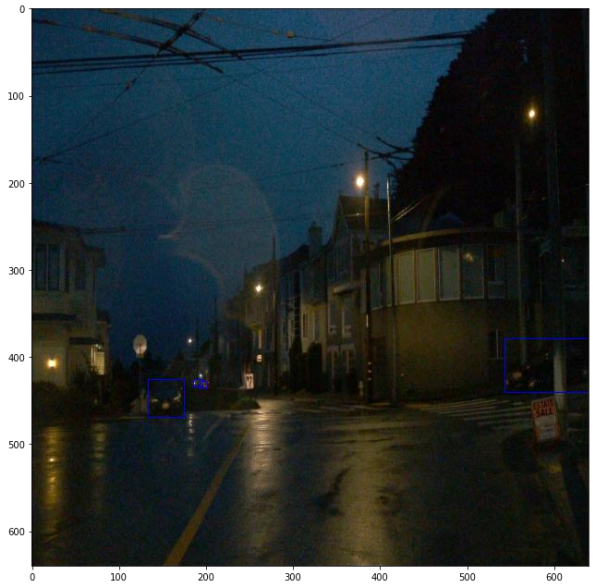
The project is to train a object-detection model to detect the vehicle persudo cyclist on the waymo dataset.

The object detection is an important component of self-driving car systems,it can help to drive car safetily, It can complement other sensors to ensure the robustness and stability of unmanned driving

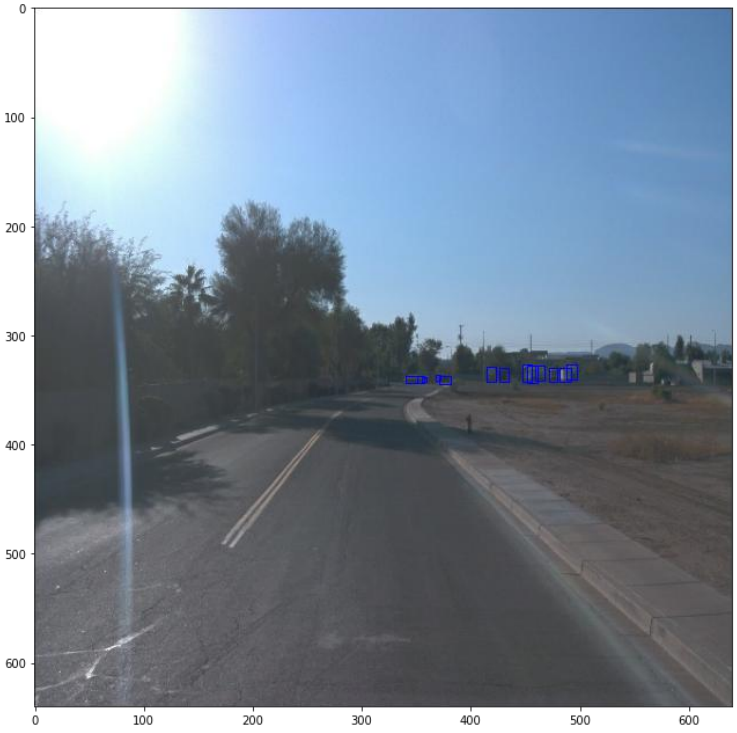
2 Set up: This section should contain a brief description of the steps to follow to run the code for this repository.

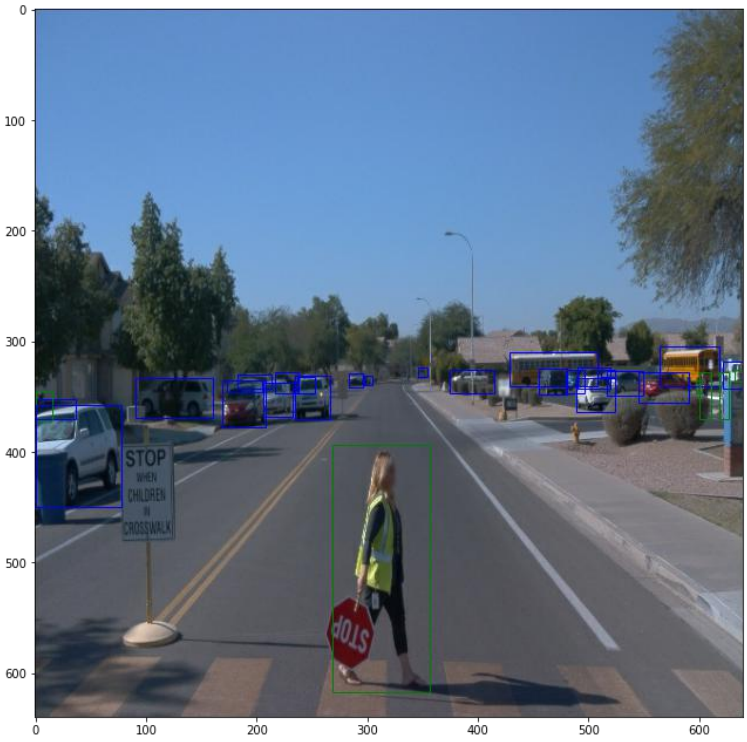
see readme.md

3 The write-up and the code capture the dataset variability (classes distribution, images variability).




STOP

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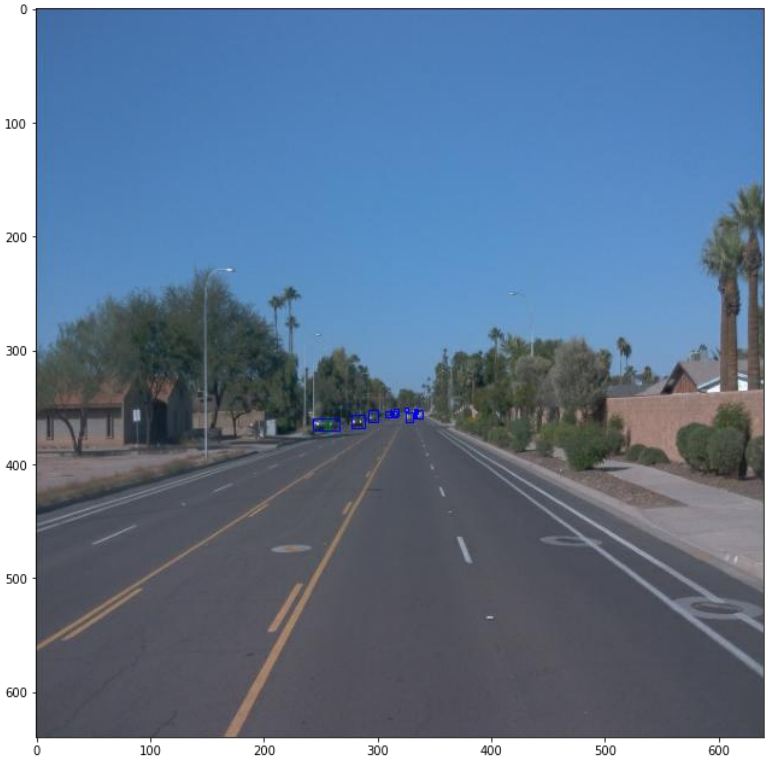

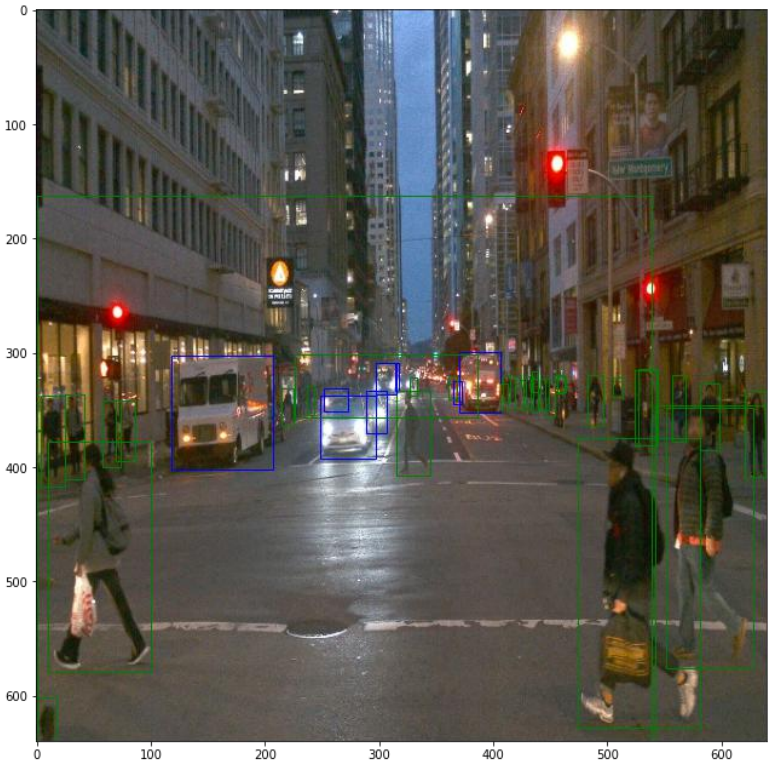
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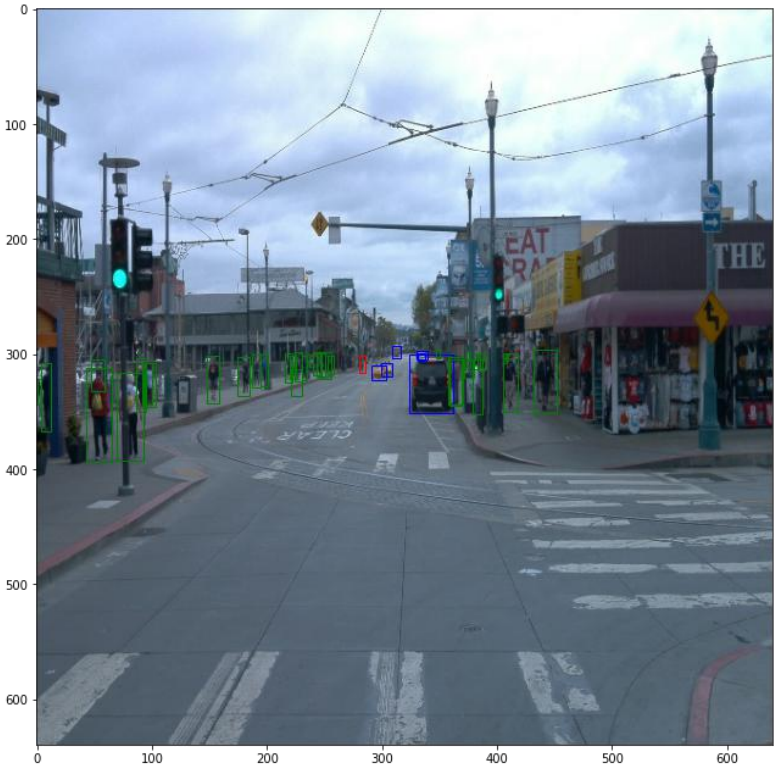
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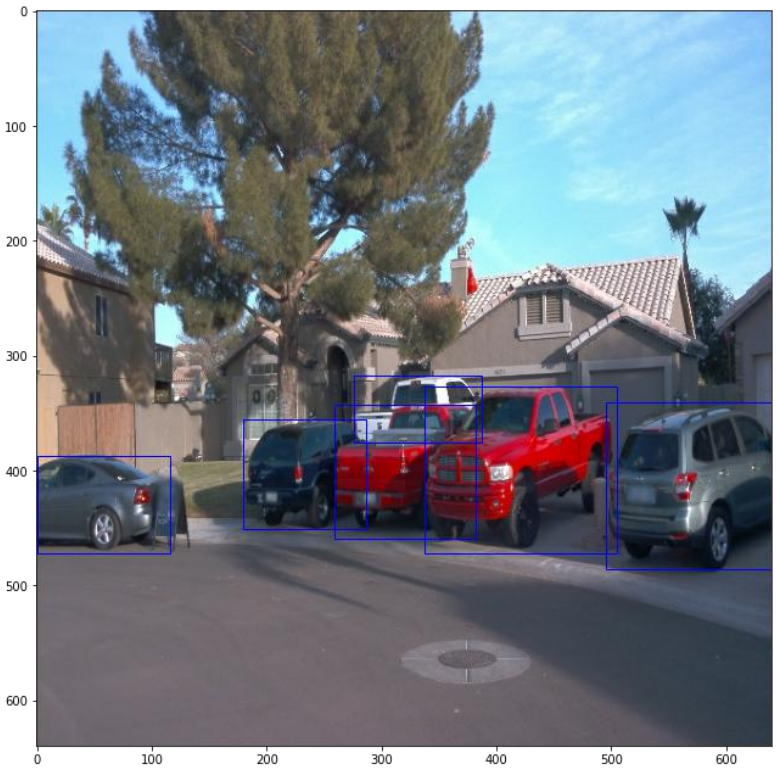
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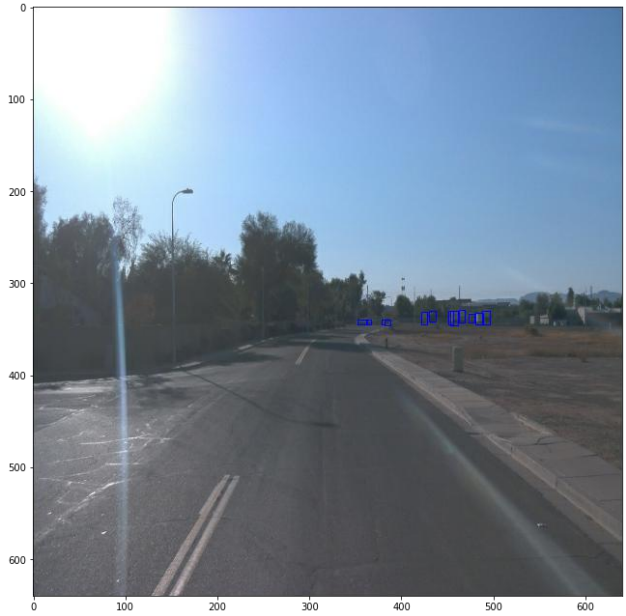
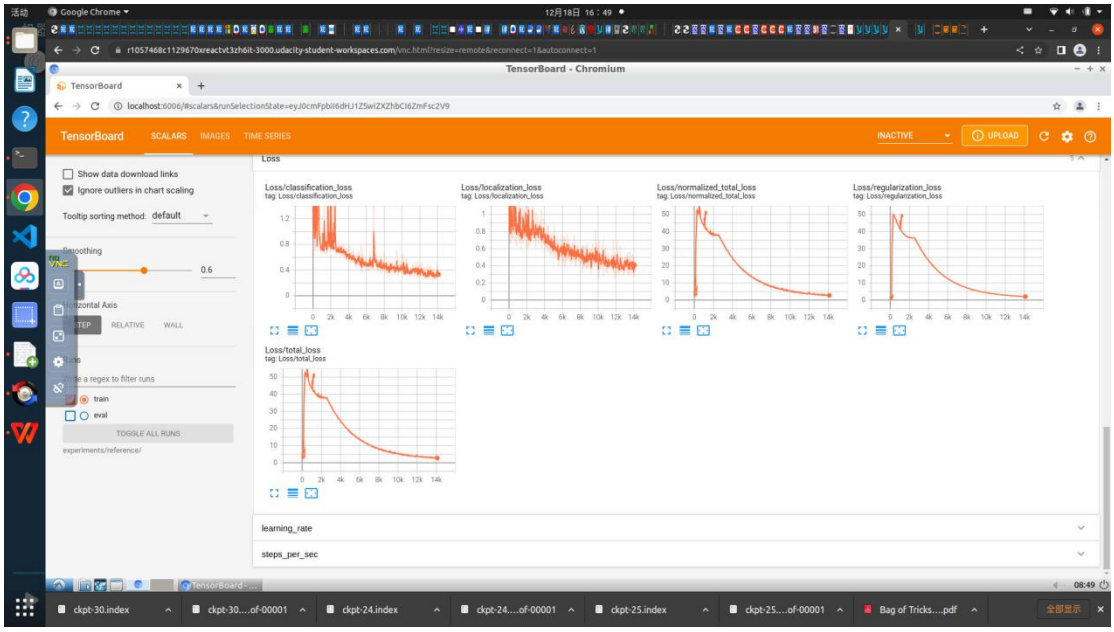
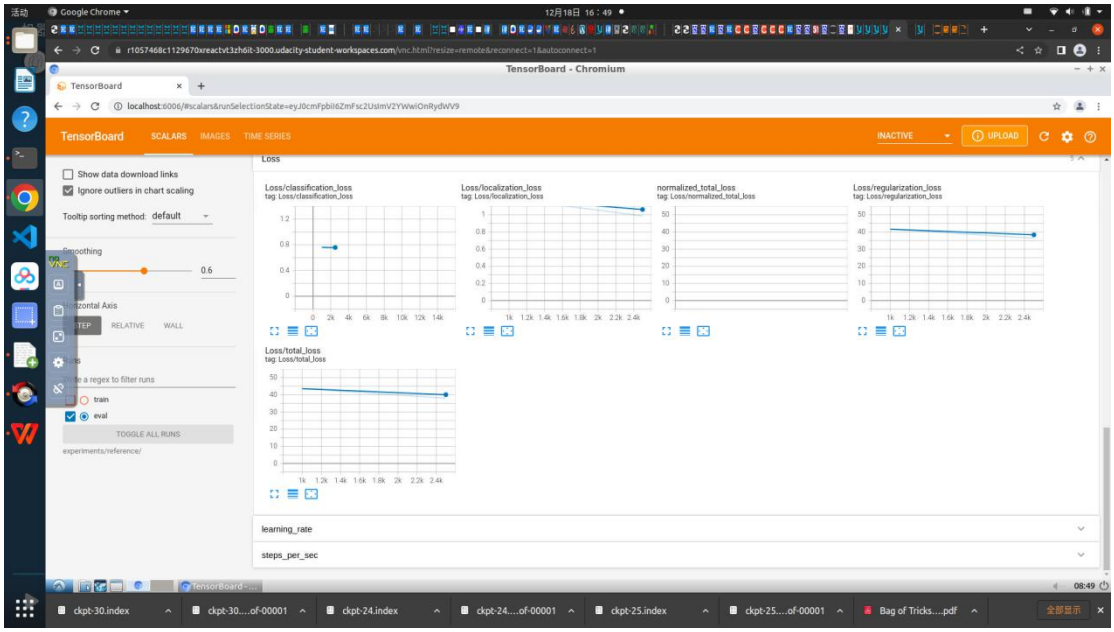


4 The write up contains a screenshot of the different Tensorboard charts and the write up describes these charts. For example, how does the validation loss compare to the training loss? Did you expect such behavior from the losses / metrics?

The training loss is oscillation and the validation loss compare to the training loss is approximate straight line as follows image shows:

Yes,I expect such behabior from the losses.because the training loss is not stable and sometimes oscillation when the dataset is in training ,and the val loss is gradually decrease
as the epohs of training model are finished .





5 A new version of the config file is created and contains modifications to improve the model performances. A new config file is created with meaningful modifications.

The write up details why these modifications were made. New augmentations are visualized and displayed in the writeup.

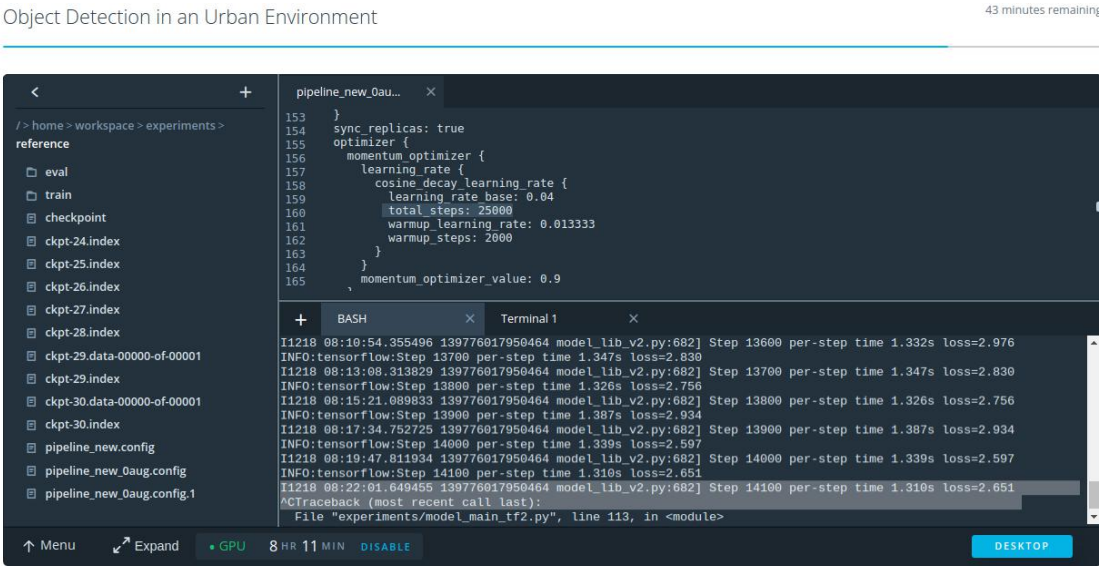
Add the following code in piplinie_new0aug.config ,and modify total_steps: 25000 from 2500

```
  data_augmentation_options {
    random_adjust_brightness {
    }
  }
  data_augmentation_options {
```

```
    random_adjust_contrast {
    }
  }
```

It can augmentate the dataset by implementating “random_adjust_brightness’ ‘random_adjust_contrast’ on the image in dataset by each training.

when total_steps: 25000 in piplinie_new0aug.config,we can get a model with lower loss (loss=2.651)



I1218 08:22:01.649455 139776017950464 model_lib_v2.py:682] Step 14100 per-step time 1.310s loss=2.651