**Report**

**Hyperparameters**

All parameters can be found in the file SSD/ssd/configs/defaults.py and SSD/configs/train\_tdt4265.yaml.

**How to train**

Train the model by executing

* python3 train.py configs/train\_tdt4265.yaml

The default environment is used. The model is not pretrained on the waymo dataset.

**Augmentations**

Image transformations:

* Randomsamplecrop()
* RandomMirror()
* Resize(), size = 1080x810
* PhotometricDistort()
* RandomContrast()

Model:

* Features are detected from 8 levels (original model had 6)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Architecture** | | | | | |
| Is output | Layer name | Layer Type | Kernel size | Number of Filters | Stride |
| Yes – Res: 102 x 135 | Layer1  Layer2 | Conv2d  Bn  ReLU  MaxPool2D  3x  Conv2d  Bn  ReLU  Conv2d  Bn  Conv2d  Bn  ReLU  Conv2d  Bn  Conv2d  Bn  3x  Conv2d  Bn  ReLU  Conv2d  Bn | 7x7  -  -  3x3  3x3  -  -  3x3  -  3x3  -  -  3x3  -  1x1  -  3x3  -  -  3x3  - | 64  -  -  -  64  -  -  64  -  128  -  -  128  -  128  -  128  -  -  128  - | 2  -  -  2  1  -  -  1  -  2  -  -  1  -  2  -  1  -  -  1  - |
| Yes – Res: 51 x 68 | Layer3 | Conv2d  Bn  ReLU  Conv2d  Bn  Conv2d  Bn  5x  Conv2d  Bn  ReLU  Conv2d  Bn | 3x3  -  -  3x3  -  1x1  -  3x3  -  -  3x3  - | 256  -  -  256  -  256  -  256  -  -  256  - | 2  -  -  1  -  2  -  1  -  -  1  - |
| Yes – Res: 26 x 34 | Layer4 | Conv2d  Bn  ReLU  Conv2d  Bn  Conv2d  Bn  2x  Conv2d  Bn  ReLU  Conv2d  Bn | 3x3  -  -  3x3  -  1x1  -  3x3  -  -  3x3  - | 512  -  -  512  -  512  -  512  -  -  512  - | 2  -  -  1  -  2  -  1  -  -  1  - |
| Yes – Res: 14 x 17 |  | Conv2d  ReLU | 2x4  - | 256  - | 2  - |
| Yes – Res: 7 x 9 |  | Conv2d  ReLu | 3x4  - | 256  - | 1  - |
| Yes – Res: 5 x 6 |  | Conv2d  ReLU | 3x3  - | 256  - | 2  - |
| Yes – Res: 3 x 3 |  | Conv2d  ReLU | 2x2  - | 256  - | 1  - |
| Yes – Res: 1 x 1 |  | Conv2d  ReLU | 3x3  - | 256  - | 2  - |