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Neural Network and Deep Learning Assignment-8

[Code link]

a

[**Code link**]

After training and evaluating a U-Net on the Oxford-IIIT Pet dataset which is publicly available for segmentation tasks. The results are presented below:
The model accuracy and loss curves were look likes:-

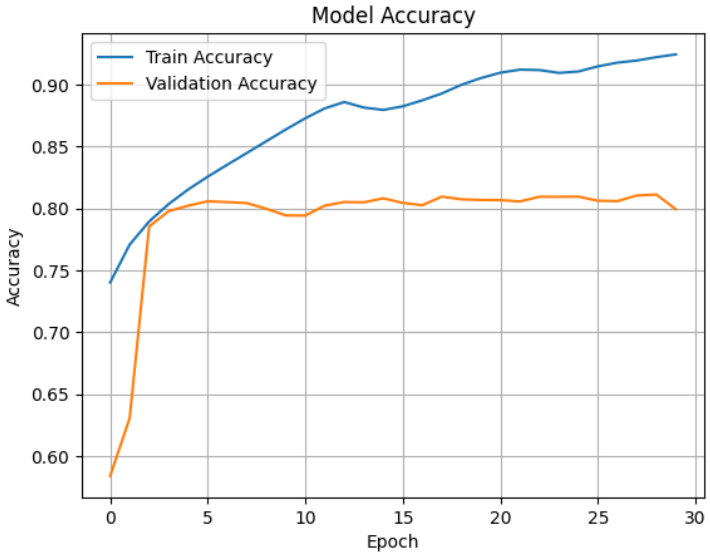

Figure 1: Model Accuracy Curve

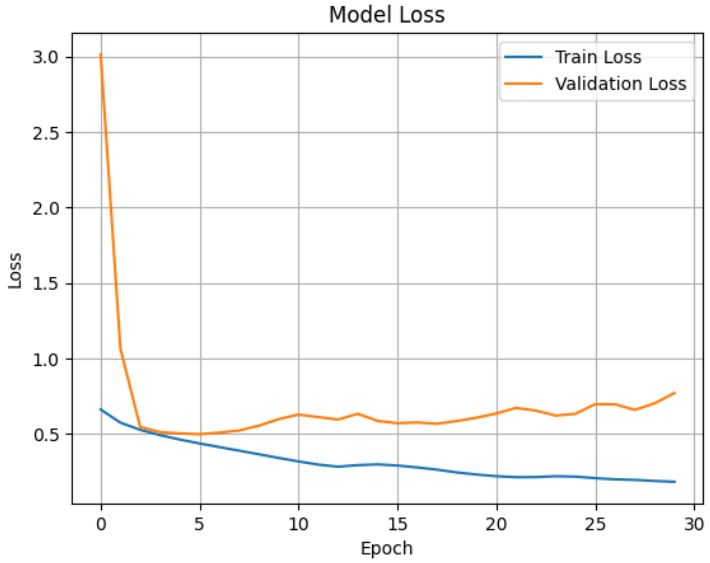

Figure 2: Model Loss Curve

The output of the model were look likes:-

Figure 3: Input Image

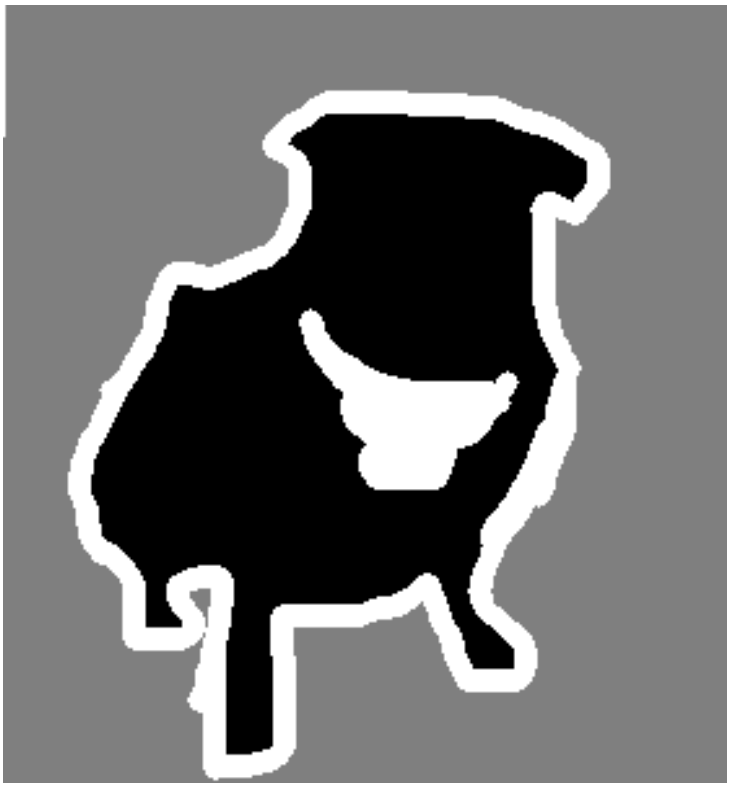

Figure 4: Ground Truth Image

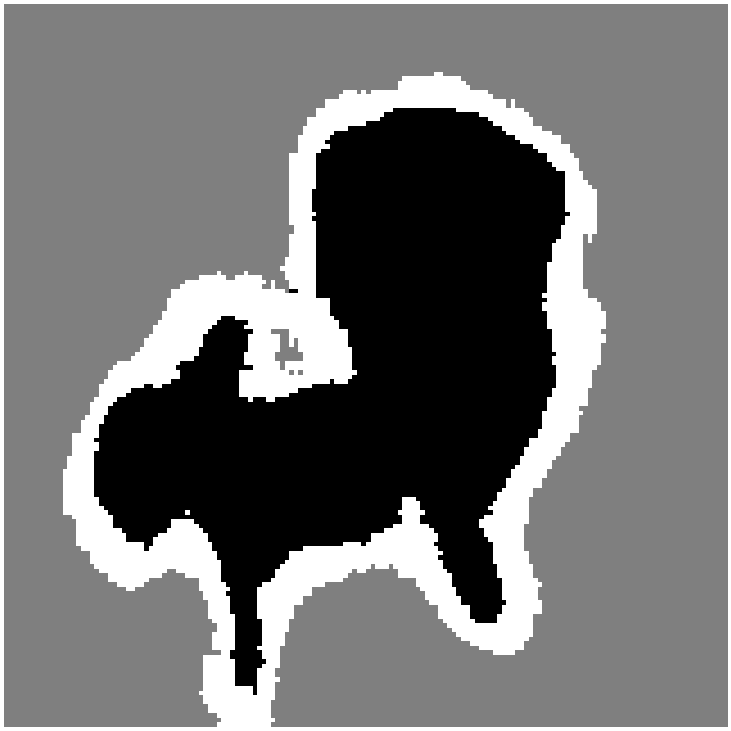

Figure 5: Predicted Image

b

[**Code link**]

After training and evaluating a U-Net on the UCF-QNRF_ECCV18 dataset which is publicly available for crowd counting tasks. The results are presented below:

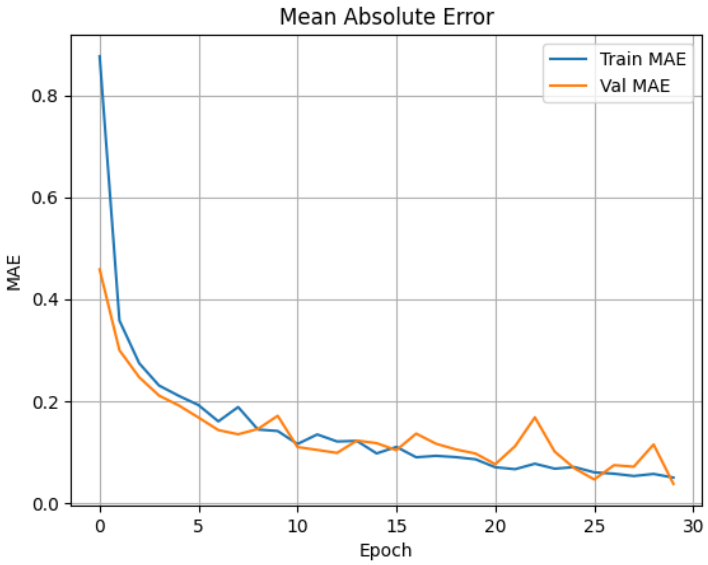

Figure 6: Model MAE

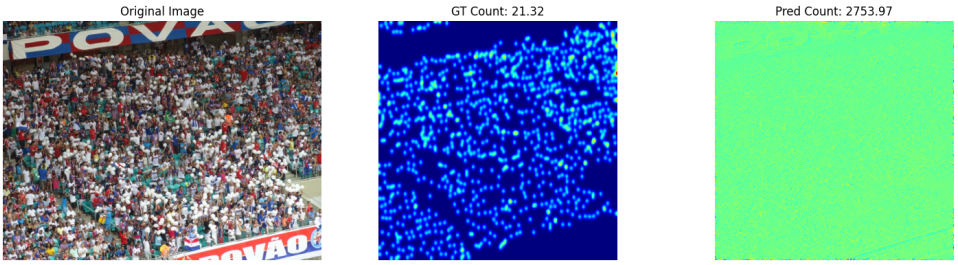

Figure 7: Model Output

c

[**Code link**]

After training and evaluating a MCNN on the UCF-QNRF_ECCV18 dataset which is publicly available for crowd counting tasks. The results are presented below:

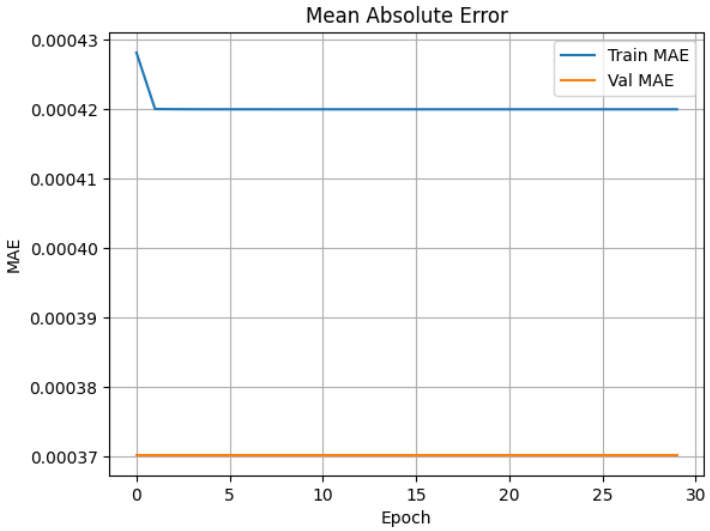

Figure 8: Model MAE

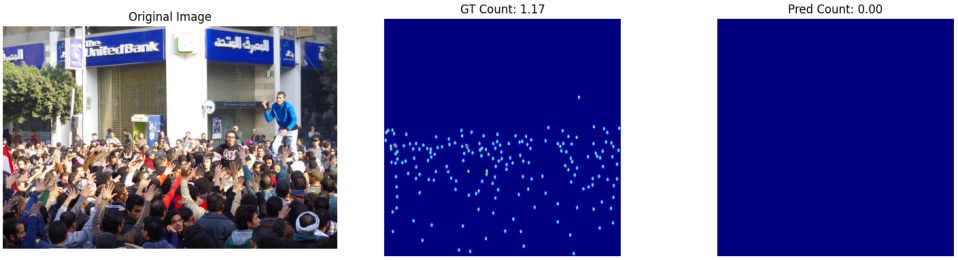

Figure 9: Model Output

d

MCNN and U-Net are both used for crowd counting but they are different in structure and results. MCNN uses several convolution paths with different filter sizes to deal with scale changes. This helps when people in the image appear in different sizes. U-Net uses a downsampling and upsampling structure with skip conncetions which helps to keep both overall shape and small details. MCNN is easier to build but U-Net usually gives better location and higher accuracy especially when the crowd is very dense.