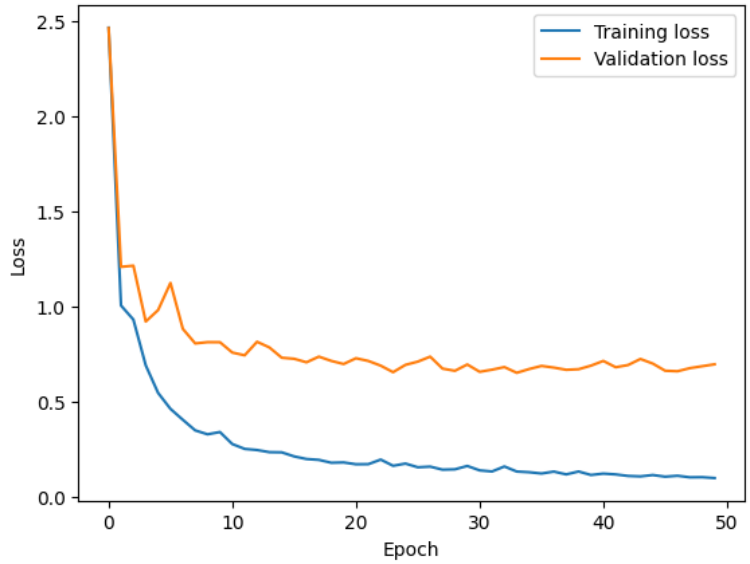
HW 2: Vision and Uncertainty

Hyper-parameter choices -

batch size	learning rate	epochs	momentum
64	0.01	50	0.9

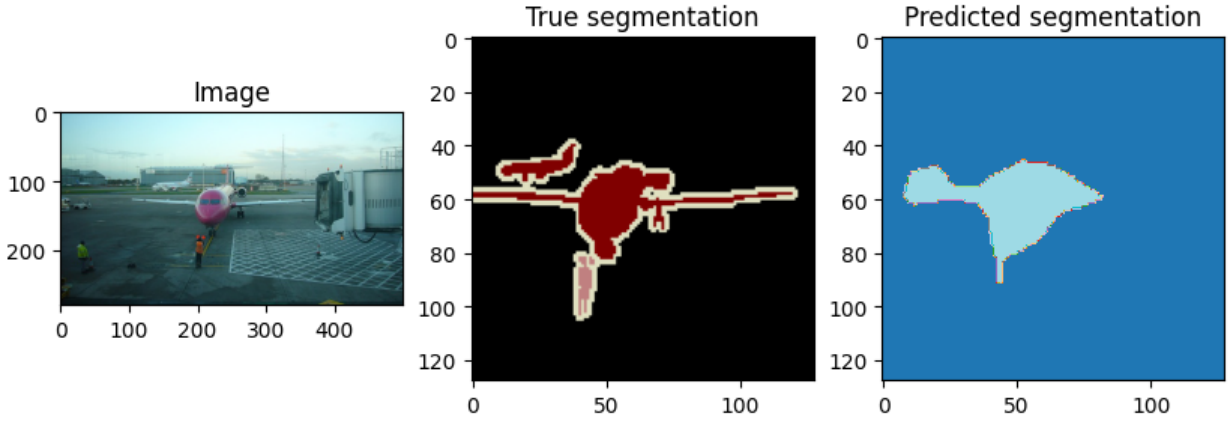
Training and validation loss curves-



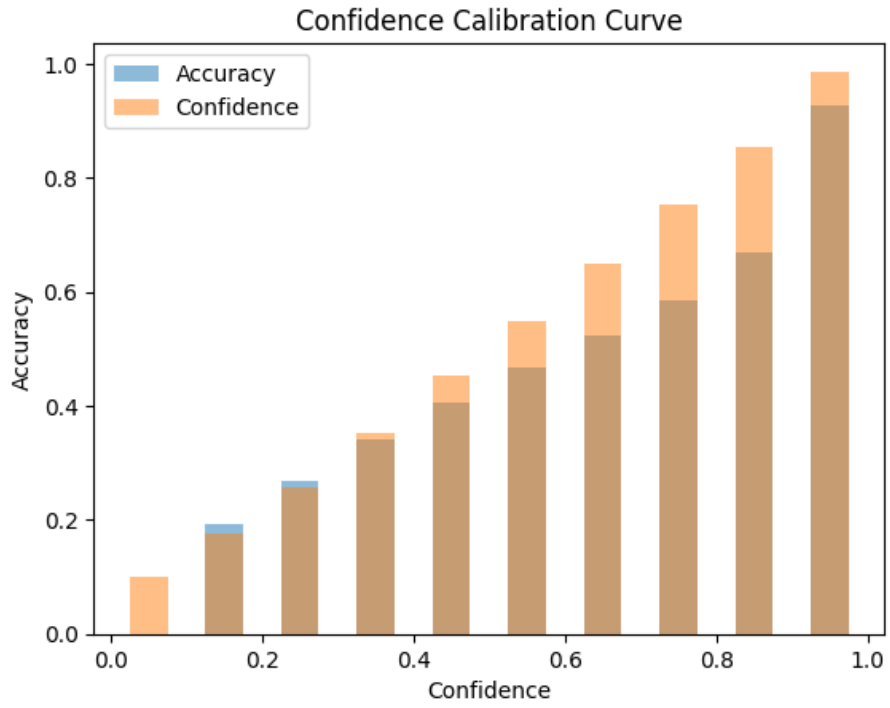
Accuracy metric -

The accuracy on the validation set (averaged over all pixels and validation images) is **0.809**.

Visualize an image from the validation set, its true segmentation, and the predicted segmentation -



Plot confidence calibration curve on test data -



Expected calibration error -

The expected calibration error is **0.07716085917104815**

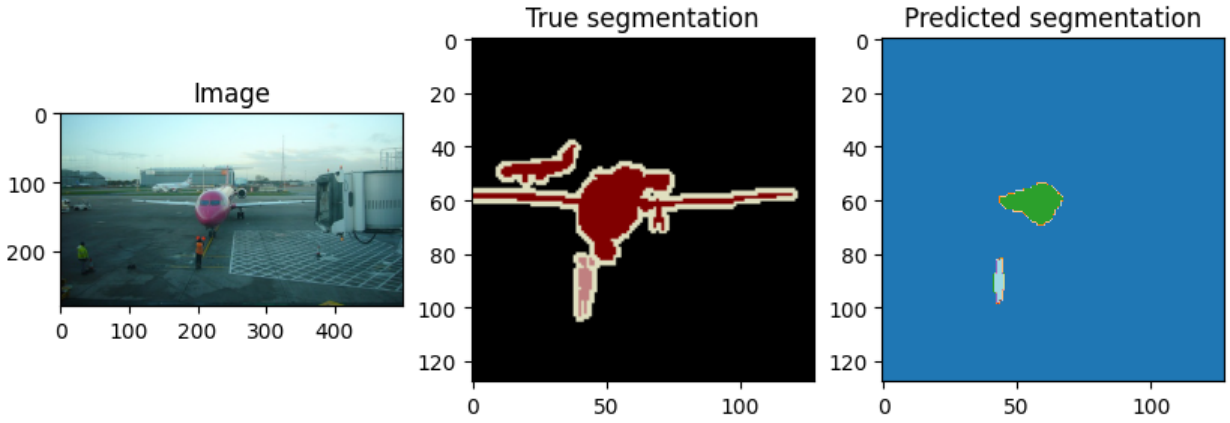
AI collaboration statement -

Chatgpt was used to understand confidence calibration curve and plotting.

Extra credit -

Exploring transfer learning -

With pretrained weights - the segmentation was able to classify 2 labels of airplane and human precisely as compared to only one label of airplane in the baseline. The validation accuracy for this model was 0.**873**.



Data augmentation -

Normalizing the data using Imagenet stats - With the same hyperparameters, the validation accuracy improved to 0.**816**. Other data augmentations like centercrop or rotation didn't have that much affect on accuracy. With this method, the ECE came out to be better ie.. .**08229446618460817**.