Preliminary results 07.05.2021

Finished augmentations.
Added and modified script from Kristaps. Now it has two args:

- path_in - location of image+json files.
- path_out - result folder, where image+image_mask should be saved.

~895 images could be added for the training.

TODO: fix val code. Some issues spotted after grid search run.

Run taskgen to test following combinations:

- Pre_trained models:
  - deeplabv3_resnet50
  - fcn_resnet_50
- Replace head (whether to replace full model classification head or only last conv layer):
  - True
  - False
- Learning rates:
  - 0.01
  - 0.03

Image count:

- train - 159
- test - 45
- val - 23

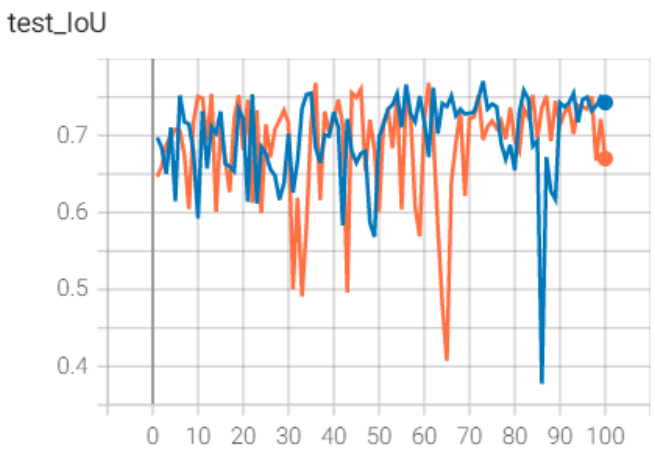
Total: 227

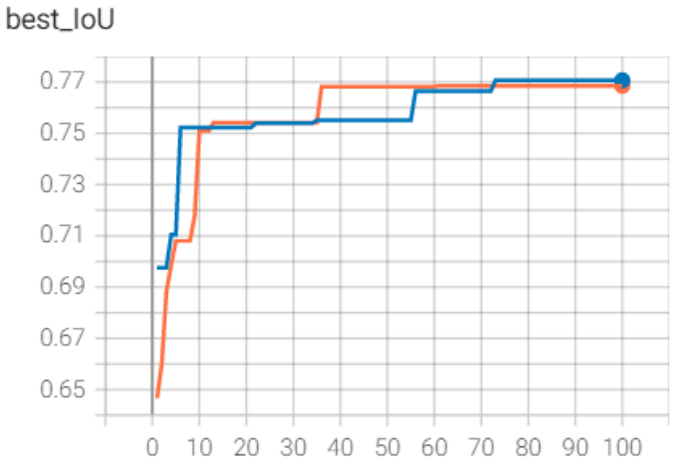
epoch	batch_size	model_typ	is_replace	learning_r	optimizer	weight_typ	best_loss	**best_IoU**	best_f1	a
100	4	fcn_resnet	TRUE	0.01	radam	sum	0.125459	**0.756753**	0.791512	
100	4	deeplabv3	FALSE	0.01	radam	max	0.12569	**0.763548**	0.797832	
100	4	fcn_resnet	TRUE	0.01	radam	max	0.126703	**0.769672**	0.801414	
100	4	fcn_resnet	FALSE	0.01	radam	sum	0.126936	**0.76854**	0.802231	
100	4	deeplabv3	TRUE	0.01	radam	max	0.127488	**0.757597**	0.791466	
100	4	fcn_resnet	FALSE	0.03	radam	max	0.132109	**0.743593**	0.774574	
100	4	fcn_resnet	FALSE	0.01	radam	max	0.134731	**0.771078**	0.802432	
100	4	deeplabv3	TRUE	0.03	radam	sum	0.134987	**0.753282**	0.787734	
100	4	fcn_resnet	TRUE	0.03	radam	max	0.137724	**0.739607**	0.773184	
100	4	fcn_resnet	TRUE	0.03	radam	sum	0.138241	**0.750351**	0.784265	
100	4	deeplabv3	FALSE	0.01	radam	sum	0.142434	**0.768318**	0.799973	
100	4	deeplabv3	TRUE	0.01	radam	sum	0.147803	**0.770687**	0.804585	
100	4	fcn_resnet	FALSE	0.03	radam	sum	0.149544	**0.754538**	0.786711	
100	4	deeplabv3	TRUE	0.03	radam	max	0.152664	**0.736518**	0.769027	

Deeplab shows similar results with a slightly bigger loss. Comparing each class loss, it is a bit better for 'zilejums'.Both of them perform better with weight type 'sum' and learning rate 0.01
Grid search:

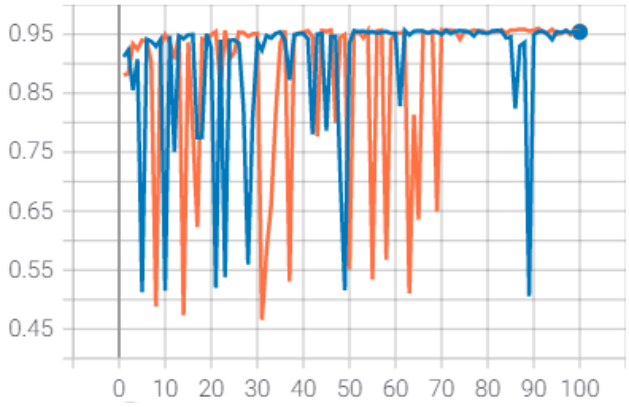
sequence-overfit_test_1-21-05-05-18-0... 28 kB

Fcn_resnet50 vs Deeplabv3_resnet50

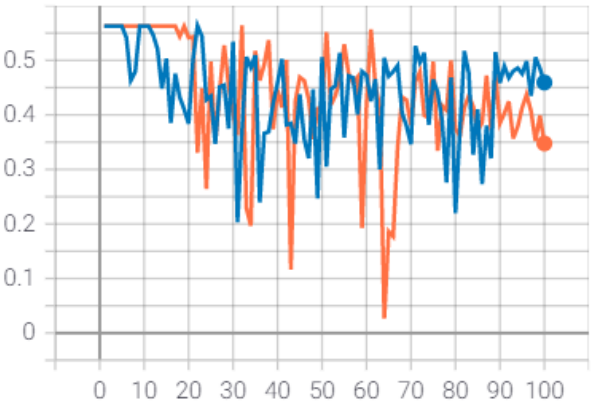




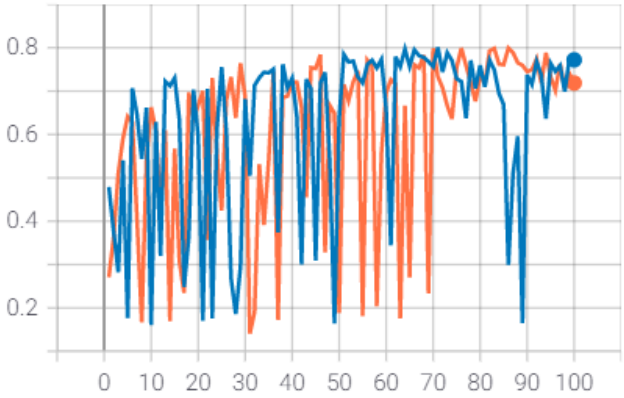
test_background_IoU



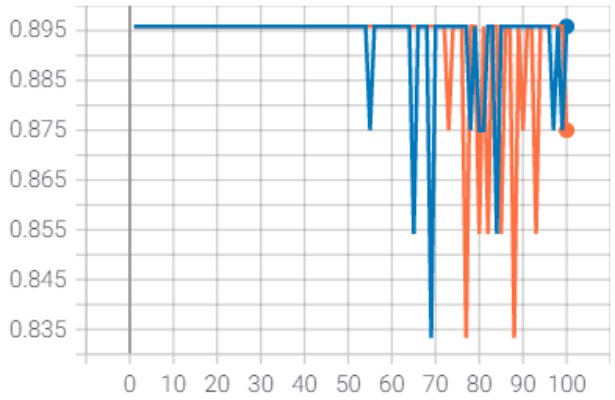
test_krasojums_IoU



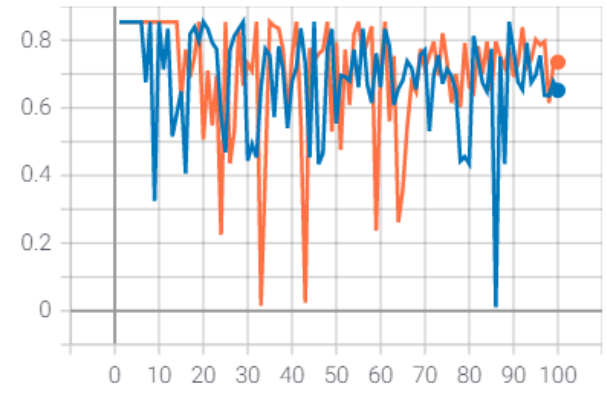
test_miza_IoU



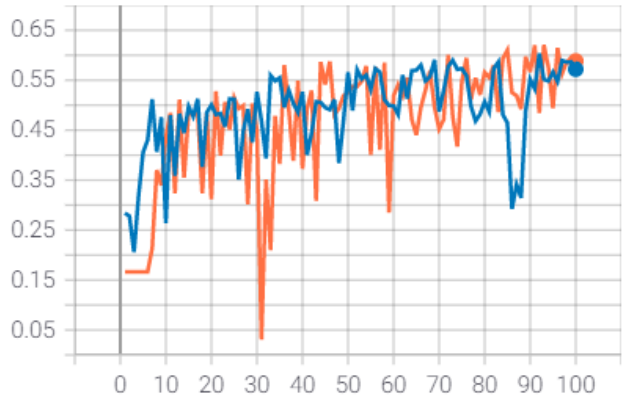
test_plaisa_IoU



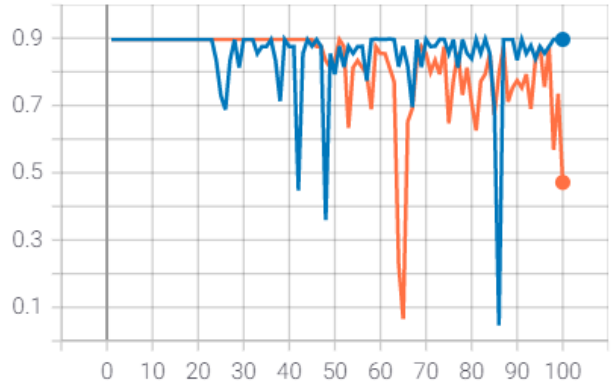
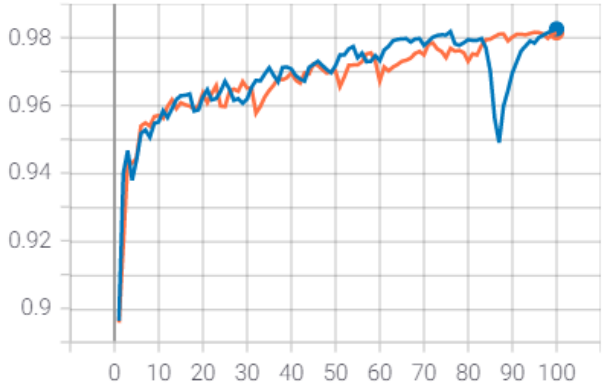
test_trupe_IoU



test_zars_IoU



test_zilejums_IoU



train_background_IoU