

AI6126: Advance Computer Vision

Project 1 – CelebAMask Face Parsing

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Model Used

PSPNet, ResNet 50, based on config file:

[pspnet_r50-d8_512x512_20k_voc12aug.py](#)

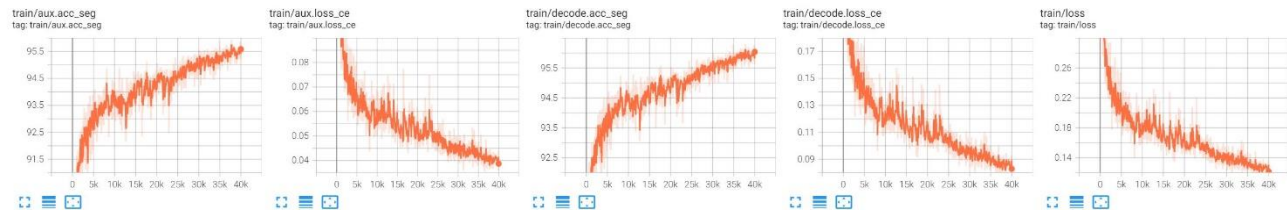
with modifications

Loss Functions

CrossEntropyLoss

Training Curves (based on previous training results), latest results were too rush to have training curve output

train



Number of parameters of model:

48975494

Specs of training machine (number of GPUs, GPU Model)

All experiments were running on Google Colab Pro+ account.

```
# Check nvcc version
!nvcc -V
# Check GCC version
!gcc --version
```

```
nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2020 NVIDIA Corporation
Built on Mon_Oct_12_20:09:46_PDT_2020
Cuda compilation tools, release 11.1, V11.1.105
Build cuda_11.1.TC455_06.29190527_0
gcc (Ubuntu 7.5.0-3ubuntu1~18.04) 7.5.0
Copyright (C) 2017 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

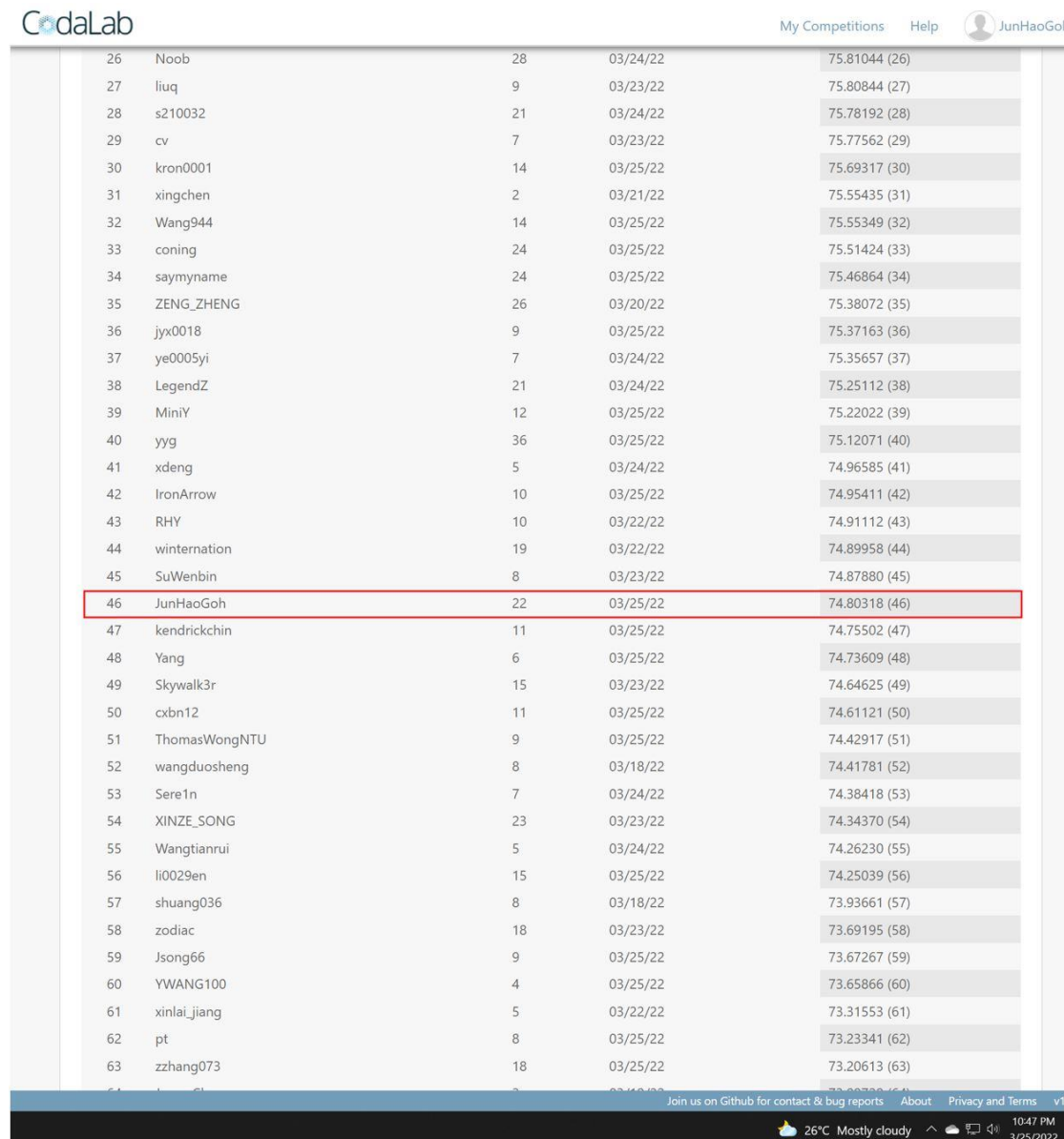
What did not work:

- Running PSPnet on resnet101 architecture, best result from 20,000 iteration is mIoU score of 50+ to low 60s, could be too deep network with too little training data
- ORCNet tried on the last day, not enough GPU and time to tune for best performance

Slight adjustments through the competition for better results

- Config previously was based on PSPNet for 512x1024, which is for Cityscape dataset. Performance on leaderboard was 72+ with 20,000 iterations. Switched to PSPnet config based on 512x512 image size, score is improved to 74+ with RandomRotate
- Added validation data to training data, total amounting to 6000 images for training, observed slight improvement in scores (by 1 decimal point)

Screenshot of Codalab score achieved



The screenshot shows the CodaLab leaderboard for a competition. The table lists participants, their scores, and the number of votes. The entry for JunHaoGoh is highlighted with a red box.

Rank	Participant	Score	Votes
26	Noob	75.81044	(26)
27	liuq	75.80844	(27)
28	s210032	75.78192	(28)
29	cv	75.77562	(29)
30	kron0001	75.69317	(30)
31	xingchen	75.55435	(31)
32	Wang944	75.55349	(32)
33	coning	75.51424	(33)
34	saymyname	75.46864	(34)
35	ZENG_ZHENG	75.38072	(35)
36	jyx0018	75.37163	(36)
37	ye0005yi	75.35657	(37)
38	LegendZ	75.25112	(38)
39	MiniY	75.22022	(39)
40	yyg	75.12071	(40)
41	xdeng	74.96585	(41)
42	IronArrow	74.95411	(42)
43	RHY	74.91112	(43)
44	winternation	74.89958	(44)
45	SuWenbin	74.87880	(45)
46	JunHaoGoh	74.80318	(46)
47	kendrickchin	74.75502	(47)
48	Yang	74.73609	(48)
49	Skywalk3r	74.64625	(49)
50	cxbn12	74.61121	(50)
51	ThomasWongNTU	74.42917	(51)
52	wangduosheng	74.41781	(52)
53	Sere1n	74.38418	(53)
54	XINZE_SONG	74.34370	(54)
55	Wangtianrui	74.26230	(55)
56	li0029en	74.25039	(56)
57	shuang036	73.93661	(57)
58	zodiac	73.69195	(58)
59	Jsong66	73.67267	(59)
60	YWANG100	73.65866	(60)
61	xinlai_jiang	73.31553	(61)
62	pt	73.23341	(62)
63	zzhang073	73.20613	(63)