

# Dynamic sampling pointnet notes

xyz

Feb 2018

# 1 Quick notes for important events while using one file to test

## 1.1 batch size

### 1.1.1 bs=27 vs bs=81

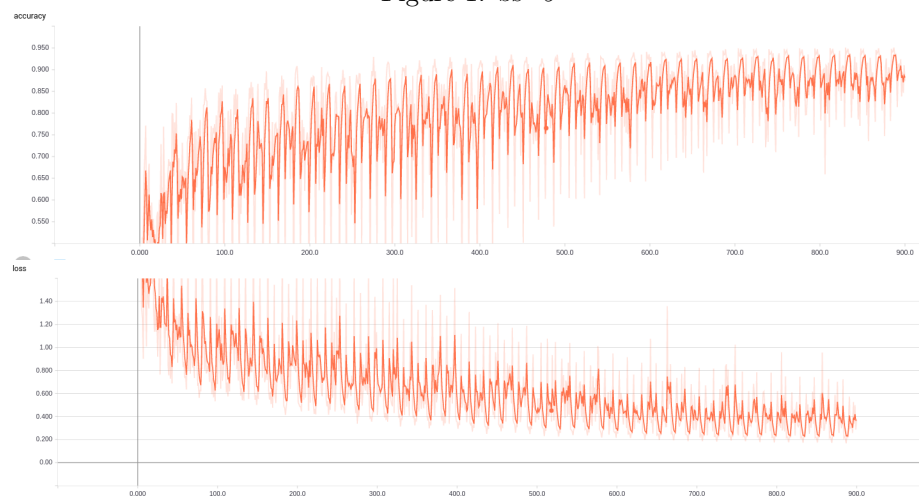
batch size: 9,27,81

data: xyz-color\_1norm

model: 1AG

sampling & grouping: stride\_0d1\_step\_0d1\_bmap\_nh5\_2048\_0d5\_1\_fmnl-160\_32-32\_12-0d2\_0d6-0d2\_0d6

Figure 1: bs=9



## 1.2 feed elements

epoch num = 100

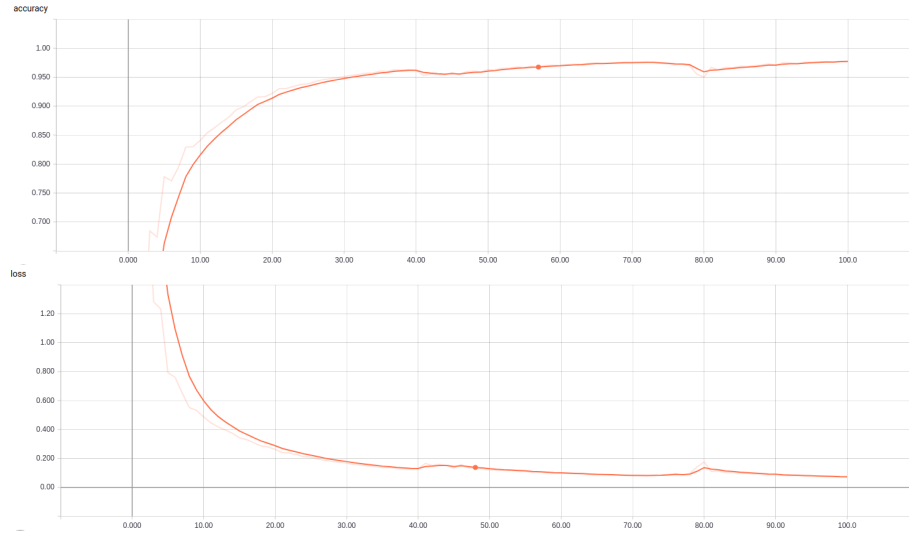
stride\_0d1\_step\_0d1\_bmap\_nh5\_2048\_0d5\_1\_fmnl-160\_32-32\_12-0d2\_0d6-0d2\_0d6

Figure 2: bs=27



model	batch size	data elements	acc	loss
1AG	9	xyz color	0.890	0.356
1AG	27	xyz color	0.920	0.240
3AG	27	xyz color	0.912	0.273
2A	27	xyz color	0.908	0.294
2AG	27	xyz color	0.902	0.293
1A	27	xyz color	0.883	0.351
1AG	81	xyz color	0.978	0.072
1AG	9	xyz	0.861	0.427
1AG	27	xyz	0.907	0.257
1AG	81	xyz	0.975	0.078
1A	27	xyzmid color	0.889	0.357
3AG	27	xyzmid color	0.933	0.193
2A	27	xyzmid color	0.939	0.177
2AG	27	xyzmid color	0.929	0.208
3AG	27	xyz xyzmid color	0.924	0.230
2A	27	xyz xyzmid color	0.898	0.317
2AG	27	xyz xyzmid color	0.908	0.280
1A	27	xyz xyzmid color	0.910	0.281
1AG	27	xyz xyzmid color	0.944	0.163
1AG	81	xyz xyzmid color	0.976	0.078
2A	81	xyz xyzmid color	0.942	0.173
3AG	81	xyz xyzmid color	0.949	0.147

Figure 3: bs=81



1. large batch size is better
  2.  $1AG(0.92) > 3AG(0.912) > 2A(0.908) > 2AG(0.902) > 1A(883)$   
1AG is much better than 1A  
**1AG is a bit better than 3AG ???**
  3. xyz-color is only a bit better than xyz
  4. xyzmid-color is much better than xyz-color
  5. **xyzmid-color is normally much better than xyz-xyzmid-color**
- ???

### 1.3 model

batch size: 50

data: xyz\_midnorm\_block-color\_1norm

epoch\_num = 600

sampling & grouping: stride\_0d1\_step\_0d1\_bmap\_nh5\_12800\_1d6\_2\_fmn3-600\_64\_24-60\_16\_12-0d2\_0d6\_1d2-0d2\_0d6\_1d2

model	acc	loss
3A	0.909	0.248
3AG	0.913	0.231
4AG	0.912	0.232

batch size: 32

data: xyz\_midnorm\_block-color\_1norm

sampling & grouping: stride\_0d1\_step\_0d1\_bmap\_nh5\_12800\_1d6\_2\_fmn6-2048\_256\_64-32\_32\_16-0d2\_0d6\_1d2-0d1\_0d3\_0d6

```

matterport3d
feed_data_elements:['xyz_midnorm_block', 'color_1norm']
feed_label_elements:['label_category', 'label_instance']
train data shape: [ 362 12800 6]
test data shape: [ 384 12800 6]
max epoch = 500

```

model	acc	loss
1AG	0.944/0.431	0.161/4.633
4AG	0.835/0.401	0.520/3.644