Version 0

results of first run

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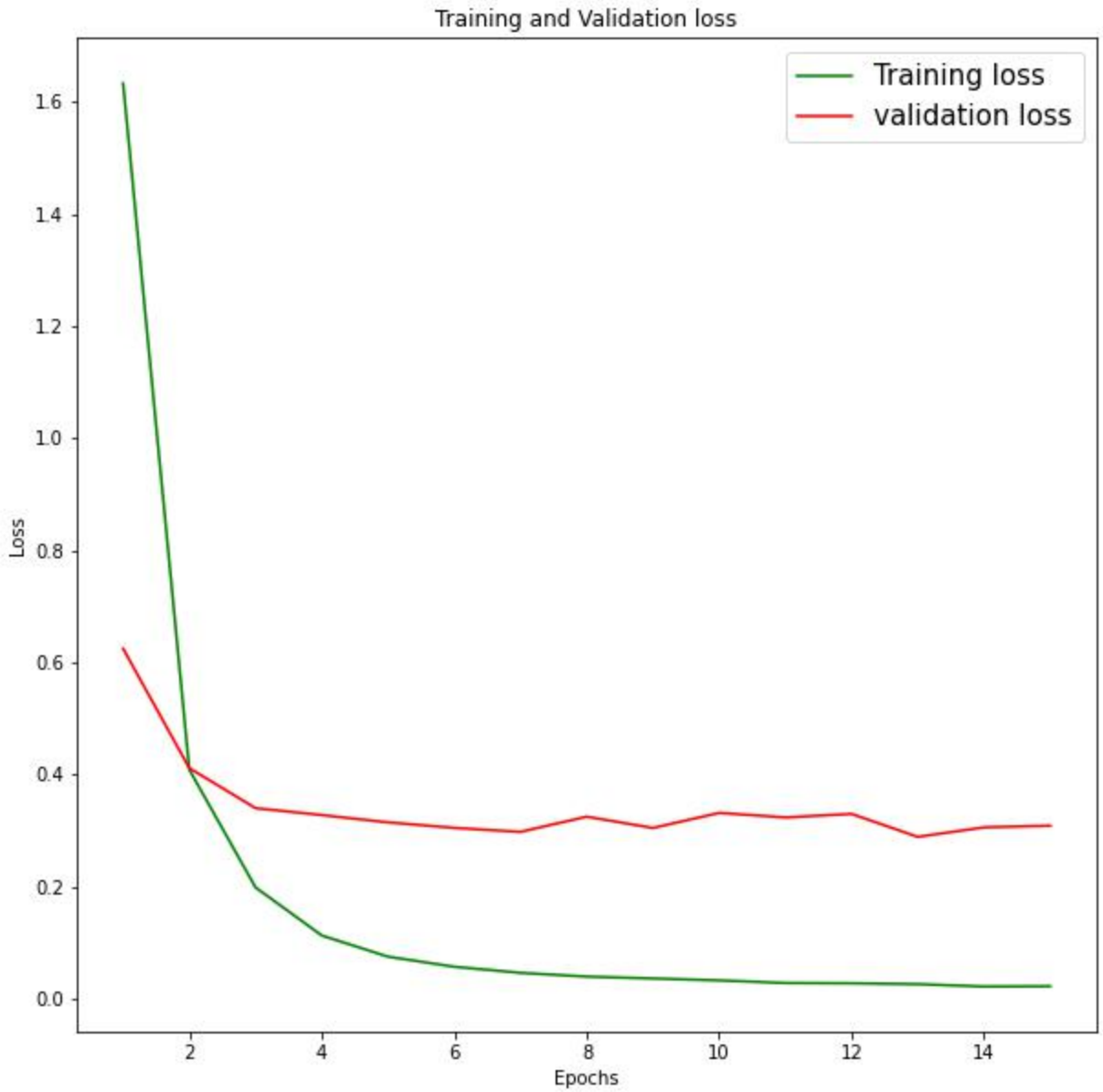
For version 0 which is first run, i used simple model with pretrained weights on imagenet, which is also why i normalized my input by mean and std of imagenet, image size was 386x386 without any data augmentation and constant learning rate.Our training error was pretty damn good reaching about ~0.02.That means that our model is fitting training distribution pretty well but since our validation error is much higher about 0.2 that means that we are dealing with over-fitting.I trained for 15 epochs and noticed that after epochs 7 there were no improvements of validation error.Possible solutions to deal with over-fitting are adding more data, data augmentation, increasing regularization such as weight decay, early stopping(which in our case seems like good option, but dont do early stopping at the beginning), reduce model size.

TODO V1.

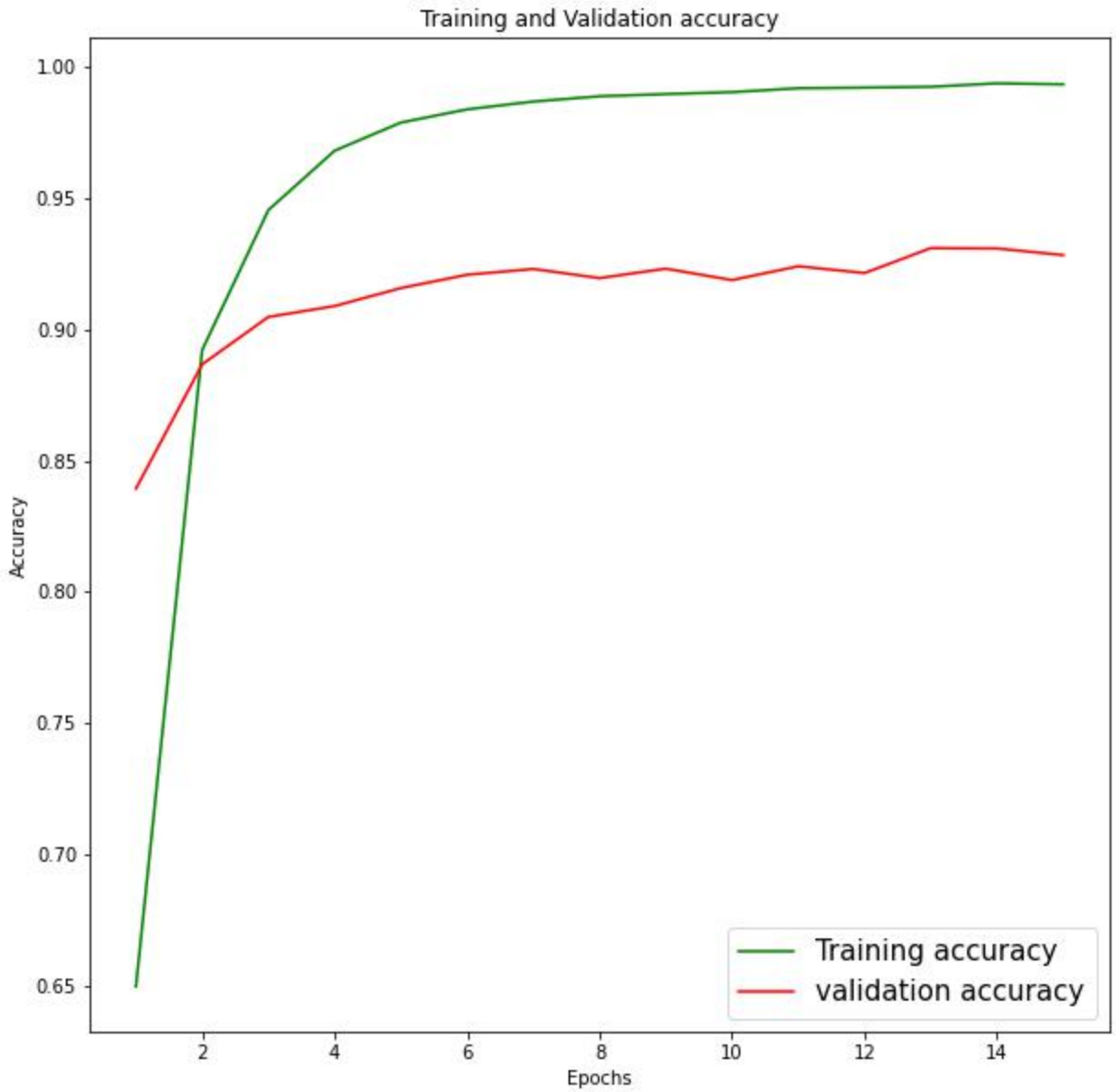
Best solution for over-fitting is of course more data, but since i dont want to scrape images for minority classes, im down on two options.You cant get wrong with data augmentations but dont go too heavy on it.We could use weight decay to penalize big large weights.Also since my validation error is not improving after 7th epoch, that is called loss plateau.Solution for this is to use scheduler.Since this will be my second version i dont want to introduce scheduler right now.I will go for data augmentation.

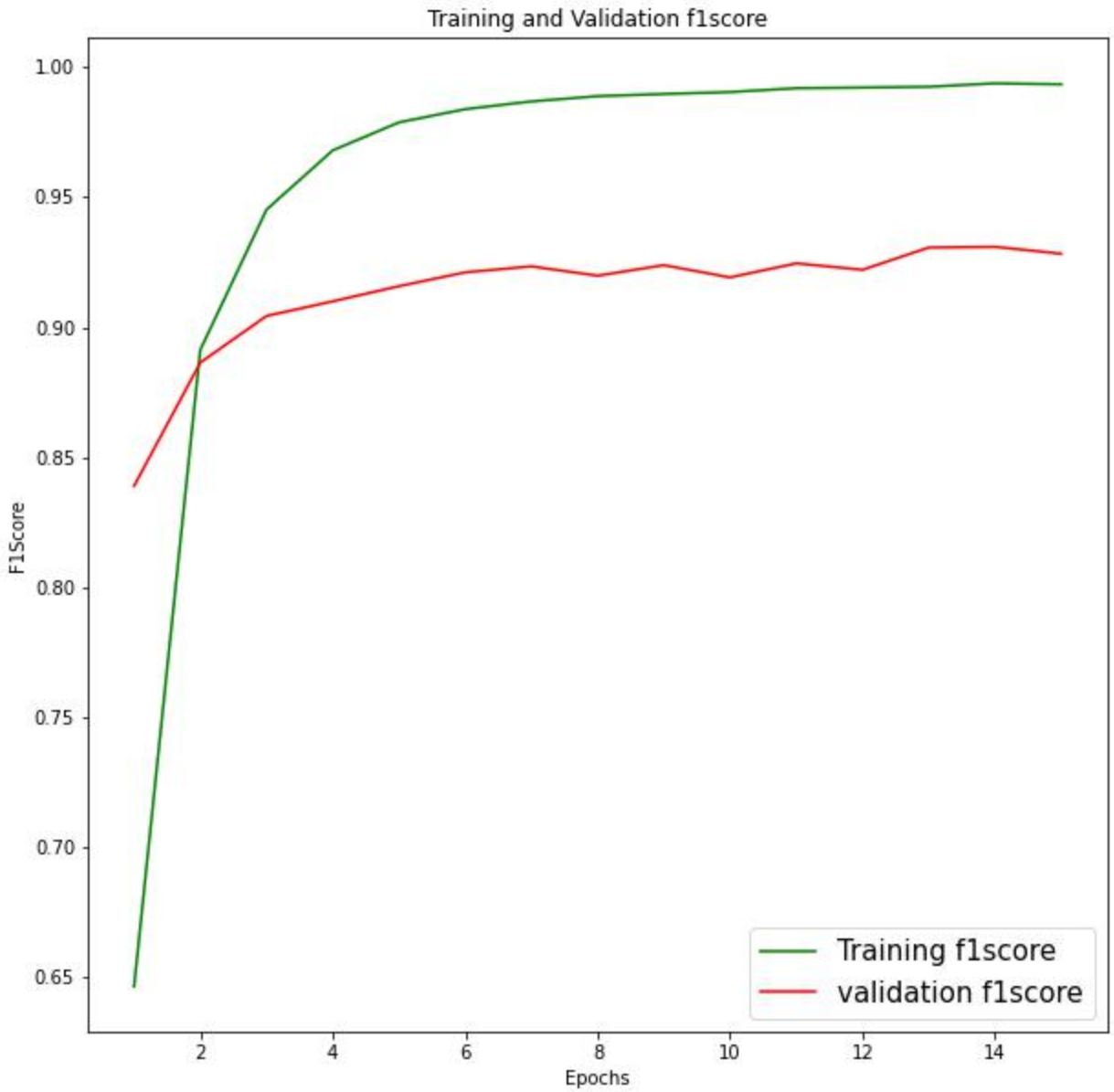
▾ Configuration parameters for Version 0(first iteration)

	params
seed	13
df_path	s3://landmarkdataset/csv_files/processed.csv
valid_split	0.2
size	386
mean	0.485,0.456,0.406
std	0.229,0.224,0.225
train_batch	48
valid_batch	48
workers	4
device	cuda
model	resnet50
pretrained	true
num_classes	491
lr	0.0003
num_epochs	15
log_freq	100


Training and Validation loss
Training loss
validation loss
Loss
Epochs
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
2
4
6
8
10
12
14

Minimum training loss is about 0.02 while minimum validation loss is about 0.2.This means that we are fitting our training distribution pretty well, but there is an over-fitting between training and validation.


Training and Validation accuracy
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
Accuracy
2
4
6
8
10
12
14
Epochs
Training accuracy
validation accuracy


Training and Validation f1score
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
F1Score
2
4
6
8
10
12
14
Epochs
Training f1score
validation f1score