Fuse Net

This is the report on hyperparameter tuning of the fuse net deep neural network. The implementation of the model was a part of assignment 3 of the course CS6886.

Shreyas Shandilya

Run Metrics

The following charts depict the logged metrics and hyperparameters. A total of 9 run were performed over a total run time of 14 hours and 57 minutes. The hyperparameters involved were:

- batch size
- learning rate
- optimizer
- optimizer specific hyperparameters
- learning rate reduction factor

The optimizers used were:

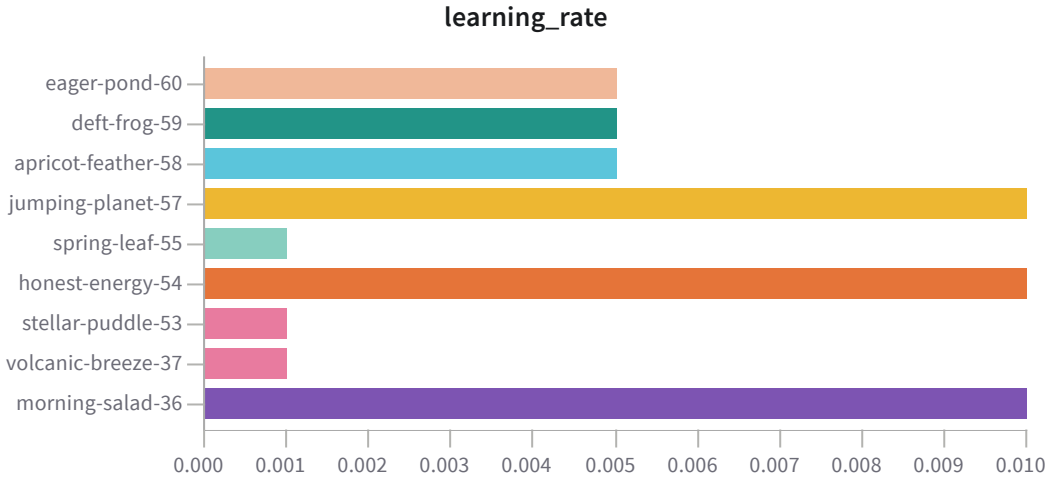
- Adam
- SGD

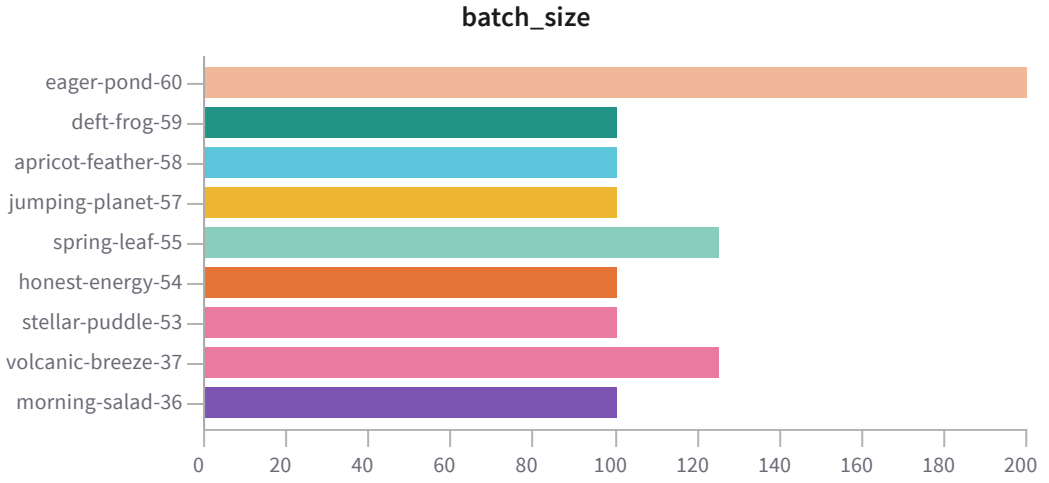
SGD has specific hyperparameter called momentum. Adam has 3 specific hyperparameters for numerical stability and weighing of gradients.

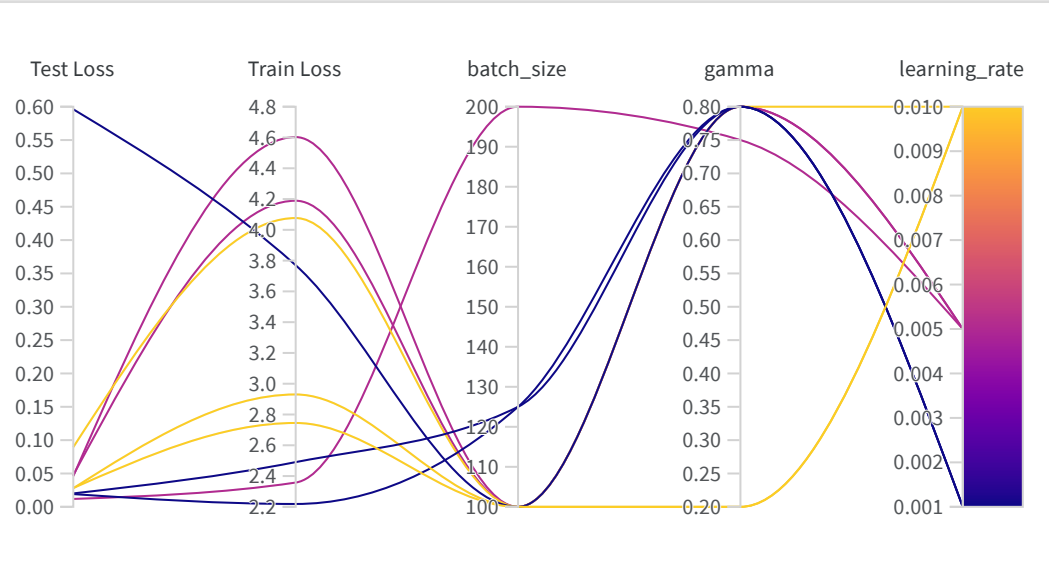
All 9 instances of training involved the use of a "Reduce on Plateau" Learning Rate Scheduler.

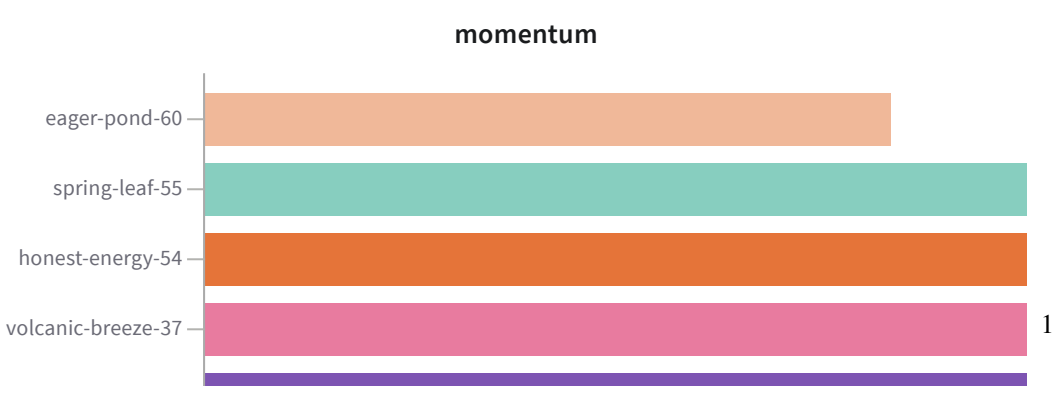
The following metrics were logged:

- Train loss
- Average Train loss across an epoch
- Test loss
- Learning Rate


learning_rate
eager-pond-60
deft-frog-59
apricot-feather-58
jumping-planet-57
spring-leaf-55
honest-energy-54
stellar-puddle-53
volcanic-breeze-37
morning-salad-36
0.000
0.001
0.002
0.003
0.004
0.005
0.006
0.007
0.008
0.009
0.010


batch_size
eager-pond-60
deft-frog-59
apricot-feather-58
jumping-planet-57
spring-leaf-55
honest-energy-54
stellar-puddle-53
volcanic-breeze-37
morning-salad-36
0
20
40
60
80
100
120
140
160
180
200


Test Loss
Train Loss
batch_size
gamma
learning_rate


momentum
eager-pond-60
spring-leaf-55
honest-energy-54
volcanic-breeze-37

Run set 9

Name (9 visualized)	State	Notes	User	Tag
eager-pond-60	finished	-	shandil	
deft-frog-59	crashed	-	shandil	
apricot-feather-58	crashed	-	shandil	
jumping-planet-57	crashed	-	shandil	
spring-leaf-55	finished	-	shandil	
honest-energy-54	crashed	-	shandil	
stellar-puddle-53	crashed	-	shandil	
volcanic-breeze-37	finished	-	shandil	
morning-salad-36	crashed	-	shandil	

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The best model obtained was able to reach a maximum accuracy of 40% (39.92%) on the test set of CIFAR100 dataset.

Created with ❤️ on Weights & Biases.

https://wandb.ai/shandilya1998/assignment3-pytorch/reports/Fuse-Net---VmlldzoyODM2MDQ