

Starting PBT ViT Experiment with Timing...  
Note: This will train ViT-Small models on CIFAR-10  
Each member may have different batch sizes

Google Drive already mounted.  
Using device: cuda  
Google Drive already mounted.  
/tmp/ipython-input-123503625.py:51: FutureWarning: `torch.cuda.amp.GradScaler(args...)` is deprecated. Please use `torch.  
scaler = torch.cuda.amp.GradScaler(enabled=torch.cuda.is\_available())`  
Starting PBT Training for ViT-Small...  
Population size: 5  
Total epochs: 70  
Exploit interval: 5 epochs  
Checkpoints will be saved to: /content/drive/MyDrive/Colab\_Checkpoints

=====  
Epoch 1/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5910522937774658 seconds  
/tmp/ipython-input-228132033.py:694: FutureWarning: `torch.cuda.amp.autocast(args...)` is deprecated. Please use `torch.  
with torch.cuda.amp.autocast(enabled=torch.cuda.is\_available()):`  
LR changed during epoch: 6.92e-07 -> 1.36e-04  
total runtime to train this model was 27.158823251724243 seconds  
Hyperparameteres for model 0 at epoch 1  
lr: 0.0006782416715044019  
  
weight\_decay: 0.14890877193751148  
  
drop\_path: 0.10322556685431711  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.504591941833496 seconds  
Loss: 1.9922  
Train Accuracy: 25.74%  
Test Accuracy: 31.32%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6911201477050781 seconds  
LR changed during epoch: 8.28e-07 -> 1.63e-04  
total runtime to train this model was 27.359756469726562 seconds  
Hyperparameteres for model 1 at epoch 1  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017  
  
drop\_path: 0.1811380432809464  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5493428707122803 seconds  
Loss: 1.9807

Train Accuracy: 25.71%  
Test Accuracy: 31.69%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.777158498764038 seconds  
LR changed during epoch: 5.88e-07 -> 1.16e-04  
total runtime to train this model was 27.734370708465576 seconds  
Hyperparameteres for model 2 at epoch 1  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.17550809832244474  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.6425557136535645 seconds  
Loss: 1.9969  
Train Accuracy: 25.96%  
Test Accuracy: 32.82%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.677403450012207 seconds  
LR changed during epoch: 5.95e-07 -> 1.17e-04  
total runtime to train this model was 27.89311981201172 seconds  
Hyperparameteres for model 3 at epoch 1  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.514970541000366 seconds  
Loss: 1.9694  
Train Accuracy: 26.82%  
Test Accuracy: 30.27%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.674842119216919 seconds  
LR changed during epoch: 2.86e-07 -> 5.64e-05  
total runtime to train this model was 27.640283584594727 seconds  
Hyperparameteres for model 4 at epoch 1  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4851737022399902 seconds

Loss: 2.0149

Train Accuracy: 25.16%

Test Accuracy: 28.31%

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Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

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Epoch 1 Summary:

=====

Time: 161.11s (Avg member: 32.22s)

Population Mean Accuracy: 30.88%

Best Member Accuracy: 32.82%

Mean Batch Size: 256

Mean Learning Rate: 5.86e-04

Mean Weight Decay: 0.085

=====

Epoch 2/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6946403980255127 seconds

LR changed during epoch: 1.36e-04 -> 2.72e-04

total runtime to train this model was 27.180854320526123 seconds

Hyperparameteres for model 0 at epoch 2

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4568028450012207 seconds

Loss: 1.7671

Train Accuracy: 34.21%

Test Accuracy: 35.38%

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Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.793872356414795 seconds

LR changed during epoch: 1.63e-04 -> 3.26e-04

total runtime to train this model was 27.07610821723938 seconds

Hyperparameteres for model 1 at epoch 2

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.445119857788086 seconds

Loss: 1.7444

Train Accuracy: 35.09%

Test Accuracy: 37.57%

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Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6401865482330322 seconds

LR changed during epoch: 1.16e-04 -> 2.31e-04

total runtime to train this model was 27.21847438812256 seconds

Hyperparameteres for model 2 at epoch 2

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.17550809832244474

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.461672067642212 seconds

Loss: 1.7703

Train Accuracy: 33.92%

Test Accuracy: 36.79%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6758649349212646 seconds

LR changed during epoch: 1.17e-04 -> 2.34e-04

total runtime to train this model was 27.434163331985474 seconds

Hyperparameteres for model 3 at epoch 2

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5171732902526855 seconds

Loss: 1.7661

Train Accuracy: 34.37%

Test Accuracy: 35.85%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5928454399108887 seconds

LR changed during epoch: 5.64e-05 -> 1.12e-04

total runtime to train this model was 27.345064878463745 seconds

Hyperparameteres for model 4 at epoch 2

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.471406936645508 seconds

Loss: 1.8006

Train Accuracy: 33.32%

Test Accuracy: 34.31%

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Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

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Epoch 2 Summary:

=====

Time: 159.34s (Avg member: 31.87s)

Population Mean Accuracy: 35.98%

Best Member Accuracy: 37.57%

Mean Batch Size: 256

Mean Learning Rate: 5.86e-04

Mean Weight Decay: 0.085

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Epoch 3/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.916766881942749 seconds

LR changed during epoch: 2.72e-04 -> 4.08e-04

total runtime to train this model was 27.10176396369934 seconds

Hyperparameteres for model 0 at epoch 3

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4273741245269775 seconds

Loss: 1.6203

Train Accuracy: 40.24%

Test Accuracy: 40.94%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.585085153579712 seconds

LR changed during epoch: 3.26e-04 -> 4.88e-04

total runtime to train this model was 27.307695388793945 seconds

Hyperparameteres for model 1 at epoch 3

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4725358486175537 seconds

Loss: 1.6094

Train Accuracy: 40.65%

Test Accuracy: 43.00%

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Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6509552001953125 seconds

LR changed during epoch: 2.31e-04 -> 3.46e-04

total runtime to train this model was 27.117122411727905 seconds

Hyperparameteres for model 2 at epoch 3

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.17550809832244474

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5573484897613525 seconds

Loss: 1.6364

Train Accuracy: 39.61%

Test Accuracy: 42.72%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5776934623718262 seconds

LR changed during epoch: 2.34e-04 -> 3.51e-04

total runtime to train this model was 27.44917368888855 seconds

Hyperparameteres for model 3 at epoch 3

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.179659366607666 seconds

Loss: 1.6366

Train Accuracy: 39.48%

Test Accuracy: 39.41%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7201035022735596 seconds  
LR changed during epoch: 1.12e-04 -> 1.69e-04  
total runtime to train this model was 28.47455668449402 seconds  
Hyperparameteres for model 4 at epoch 3  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.648649215698242 seconds

Loss: 1.6862  
Train Accuracy: 37.72%  
Test Accuracy: 39.04%

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Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 3 Summary:  
=====

Time: 161.47s (Avg member: 32.29s)  
Population Mean Accuracy: 41.02%  
Best Member Accuracy: 43.00%  
Mean Batch Size: 256  
Mean Learning Rate: 5.86e-04  
Mean Weight Decay: 0.085

=====  
Epoch 4/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6149382591247559 seconds  
LR changed during epoch: 4.08e-04 -> 5.43e-04  
total runtime to train this model was 27.72934079170227 seconds  
Hyperparameteres for model 0 at epoch 4  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.578336000442505 seconds

Loss: 1.5204  
Train Accuracy: 44.50%  
Test Accuracy: 46.20%

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Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5973358154296875 seconds  
LR changed during epoch: 4.88e-04 -> 6.50e-04

total runtime to train this model was 27.484376668930054 seconds

Hyperparameteres for model 1 at epoch 4

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.9696409702301025 seconds

Loss: 1.5294

Train Accuracy: 43.87%

Test Accuracy: 45.27%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.7530162334442139 seconds

LR changed during epoch: 3.46e-04 -> 4.62e-04

total runtime to train this model was 26.50372576713562 seconds

Hyperparameteres for model 2 at epoch 4

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.17550809832244474

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.837416648864746 seconds

Loss: 1.5343

Train Accuracy: 43.89%

Test Accuracy: 47.00%

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Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.601991891860962 seconds

LR changed during epoch: 3.51e-04 -> 4.67e-04

total runtime to train this model was 27.204891204833984 seconds

Hyperparameteres for model 3 at epoch 4

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5185611248016357 seconds

Loss: 1.5218

Train Accuracy: 44.34%

Test Accuracy: 46.67%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5719139575958252 seconds  
LR changed during epoch: 1.69e-04 -> 2.25e-04  
total runtime to train this model was 27.201574563980103 seconds  
Hyperparameteres for model 4 at epoch 4  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.008655183396399702  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.547083854675293 seconds  
Loss: 1.5881  
Train Accuracy: 41.65%  
Test Accuracy: 43.20%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 4 Summary:  
=====

Time: 158.94s (Avg member: 31.79s)  
Population Mean Accuracy: 45.67%  
Best Member Accuracy: 47.00%  
Mean Batch Size: 256  
Mean Learning Rate: 5.86e-04  
Mean Weight Decay: 0.085

=====  
Epoch 5/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.743992567062378 seconds  
LR changed during epoch: 5.43e-04 -> 6.78e-04  
total runtime to train this model was 26.621628284454346 seconds  
Hyperparameteres for model 0 at epoch 5  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148  
drop\_path: 0.10322556685431711  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5237696170806885 seconds  
Loss: 1.4640  
Train Accuracy: 46.85%  
Test Accuracy: 49.18%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6135778427124023 seconds

LR changed during epoch: 6.50e-04 -> 8.12e-04

total runtime to train this model was 27.527491569519043 seconds

Hyperparameteres for model 1 at epoch 5

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4318699836730957 seconds

Loss: 1.4744

Train Accuracy: 46.28%

Test Accuracy: 49.06%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5968570709228516 seconds

LR changed during epoch: 4.62e-04 -> 5.76e-04

total runtime to train this model was 27.743157625198364 seconds

Hyperparameteres for model 2 at epoch 5

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.17550809832244474

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5249459743499756 seconds

Loss: 1.4738

Train Accuracy: 46.45%

Test Accuracy: 46.90%

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Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5923235416412354 seconds

LR changed during epoch: 4.67e-04 -> 5.83e-04

total runtime to train this model was 26.912391901016235 seconds

Hyperparameteres for model 3 at epoch 5

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7818336486816406 seconds

Loss: 1.4607

Train Accuracy: 46.58%

Test Accuracy: 48.53%

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Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7296273708343506 seconds

LR changed during epoch: 2.25e-04 -> 2.80e-04

total runtime to train this model was 26.815542936325073 seconds

Hyperparameteres for model 4 at epoch 5

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1506969928741455 seconds

Loss: 1.4882

Train Accuracy: 45.52%

Test Accuracy: 47.04%

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Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 5) ---

==== PBT Exploit & Explore ====

Top performers: [49.18]

Bottom performers: [46.9]

Member 2: lr changed from 0.0005761935801264503 to 0.0007826127442238477

Member 2: weight\_decay changed from 0.1354380062306811 to 0.11457787407074072

Member 2: drop\_path changed from 0.17550809832244474 to 0.19009135885224654

Member 2 copied from 0

LR=7.83e-04, WD=0.115, DropPath=0.190, Warmup=5 epochs, Batch=256

=====

Epoch 5 Summary:

=====

Time: 159.69s (Avg member: 31.94s)

Population Mean Accuracy: 48.14%

Best Member Accuracy: 49.18%

Mean Batch Size: 256

Mean Learning Rate: 6.27e-04

Mean Weight Decay: 0.081

=====

Epoch 6/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.5911509990692139 seconds

LR changed during epoch: 6.78e-04 -> 6.78e-04

total runtime to train this model was 26.74828863143921 seconds

Hyperparameteres for model 0 at epoch 6

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.484156608581543 seconds

Loss: 1.4135

Train Accuracy: 48.47%

Test Accuracy: 51.14%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.5794715881347656 seconds

LR changed during epoch: 8.12e-04 -> 8.11e-04

total runtime to train this model was 26.972652912139893 seconds

Hyperparameteres for model 1 at epoch 6

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4321582317352295 seconds

Loss: 1.4371

Train Accuracy: 47.81%

Test Accuracy: 50.09%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6005239486694336 seconds

LR changed during epoch: 7.99e-07 -> 1.57e-04

total runtime to train this model was 26.4976909160614 seconds

Hyperparameteres for model 2 at epoch 6

lr: 0.0007826127442238477

weight\_decay: 0.11457787407074072

drop\_path: 0.19009135885224654

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.276393175125122 seconds

Loss: 1.3438

Train Accuracy: 50.99%

Test Accuracy: 53.49%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6662497520446777 seconds

LR changed during epoch: 5.83e-04 -> 5.83e-04

total runtime to train this model was 26.67754864692688 seconds

Hyperparameteres for model 3 at epoch 6

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5376009941101074 seconds

Loss: 1.3954

Train Accuracy: 49.29%

Test Accuracy: 50.25%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5795965194702148 seconds

LR changed during epoch: 2.80e-04 -> 2.80e-04

total runtime to train this model was 27.004021406173706 seconds

Hyperparameteres for model 4 at epoch 6

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.8957180976867676 seconds

Loss: 1.4071

Train Accuracy: 48.80%

Test Accuracy: 50.53%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 6 Summary:

=====

Time: 156.78s (Avg member: 31.36s)

Population Mean Accuracy: 51.10%

Best Member Accuracy: 53.49%

Mean Batch Size: 256

Mean Learning Rate: 6.27e-04

Mean Weight Decay: 0.081

=====

Epoch 7/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6058521270751953 seconds  
LR changed during epoch: 6.78e-04 -> 6.77e-04  
total runtime to train this model was 26.819535970687866 seconds  
Hyperparameteres for model 0 at epoch 7  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8792848587036133 seconds

Loss: 1.3553

Train Accuracy: 50.77%

Test Accuracy: 50.80%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7693276405334473 seconds

LR changed during epoch: 8.11e-04 -> 8.10e-04

total runtime to train this model was 26.636987686157227 seconds

Hyperparameteres for model 1 at epoch 7

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.6796822547912598 seconds

Loss: 1.3780

Train Accuracy: 49.92%

Test Accuracy: 51.95%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6174602508544922 seconds

LR changed during epoch: 1.57e-04 -> 3.14e-04

total runtime to train this model was 26.90557336807251 seconds

Hyperparameteres for model 2 at epoch 7

lr: 0.0007826127442238477

weight\_decay: 0.11457787407074072

drop\_path: 0.19009135885224654

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4879610538482666 seconds

Loss: 1.3158

Train Accuracy: 52.26%

Test Accuracy: 52.93%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.579300880432129 seconds

LR changed during epoch: 5.83e-04 -> 5.82e-04

total runtime to train this model was 26.896100997924805 seconds

Hyperparameteres for model 3 at epoch 7

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.50844407081604 seconds

Loss: 1.3424

Train Accuracy: 51.11%

Test Accuracy: 52.85%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.657956838607788 seconds

LR changed during epoch: 2.80e-04 -> 2.80e-04

total runtime to train this model was 27.43762731552124 seconds

Hyperparameteres for model 4 at epoch 7

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 4.132427215576172 seconds

Loss: 1.3306

Train Accuracy: 51.89%

Test Accuracy: 52.64%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 7 Summary:

=====

Time: 159.87s (Avg member: 31.97s)

Population Mean Accuracy: 52.23%

Best Member Accuracy: 52.93%

Mean Batch Size: 256

Mean Learning Rate: 6.27e-04

Mean Weight Decay: 0.081

```
=====
Epoch 8/70
=====
```

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.6143269538879395 seconds
LR changed during epoch: 6.77e-04 -> 6.75e-04
total runtime to train this model was 27.57538914680481 seconds
Hyperparameteres for model 0 at epoch 8
lr: 0.0006782416715044019
```

```
weight_decay: 0.14890877193751148
```

```
drop_path: 0.10322556685431711
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.910950183868408 seconds
```

```
Loss: 1.3176
Train Accuracy: 52.16%
Test Accuracy: 53.53%
```

```
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```

```
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_217401.pt
```

```
--- Training Member 1 (Batch size: 256) ---
built data in 1.627969741821289 seconds
LR changed during epoch: 8.10e-04 -> 8.07e-04
total runtime to train this model was 27.447394132614136 seconds
Hyperparameteres for model 1 at epoch 8
lr: 0.000811751662685378
```

```
weight_decay: 0.03687161935761017
```

```
drop_path: 0.1811380432809464
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.9295902252197266 seconds
```

```
Loss: 1.3312
Train Accuracy: 51.55%
Test Accuracy: 52.76%
```

```
Google Drive already mounted.
```

```
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_1_seed_217401.pt
```

```
--- Training Member 2 (Batch size: 256) ---
built data in 1.7173008918762207 seconds
LR changed during epoch: 3.14e-04 -> 4.70e-04
total runtime to train this model was 27.393036603927612 seconds
Hyperparameteres for model 2 at epoch 8
lr: 0.0007826127442238477
```

```
weight_decay: 0.11457787407074072
```

```
drop_path: 0.19009135885224654
```

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.6729493141174316 seconds

Loss: 1.3179

Train Accuracy: 52.48%

Test Accuracy: 52.31%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5748400688171387 seconds

LR changed during epoch: 5.82e-04 -> 5.80e-04

total runtime to train this model was 27.104650735855103 seconds

Hyperparameteres for model 3 at epoch 8

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4823238849639893 seconds

Loss: 1.2997

Train Accuracy: 53.12%

Test Accuracy: 53.71%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5791566371917725 seconds

LR changed during epoch: 2.80e-04 -> 2.79e-04

total runtime to train this model was 27.31316089630127 seconds

Hyperparameteres for model 4 at epoch 8

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.440316677093506 seconds

Loss: 1.2851

Train Accuracy: 53.37%

Test Accuracy: 54.61%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 8 Summary:

=====

Time: 160.59s (Avg member: 32.12s)

Population Mean Accuracy: 53.38%  
Best Member Accuracy: 54.61%  
Mean Batch Size: 256  
Mean Learning Rate: 6.27e-04  
Mean Weight Decay: 0.081

=====  
Epoch 9/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5869107246398926 seconds  
LR changed during epoch: 6.75e-04 -> 6.72e-04  
total runtime to train this model was 27.072916269302368 seconds  
Hyperparameteres for model 0 at epoch 9  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9972188472747803 seconds

Loss: 1.2773  
Train Accuracy: 53.86%  
Test Accuracy: 54.45%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.7540583610534668 seconds  
LR changed during epoch: 8.07e-04 -> 8.04e-04  
total runtime to train this model was 27.197070121765137 seconds  
Hyperparameteres for model 1 at epoch 9  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5936319828033447 seconds

Loss: 1.2837  
Train Accuracy: 53.52%  
Test Accuracy: 55.52%  
Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5848991870880127 seconds  
LR changed during epoch: 4.70e-04 -> 6.27e-04  
total runtime to train this model was 27.4695041179657 seconds  
Hyperparameteres for model 2 at epoch 9  
lr: 0.0007826127442238477

weight\_decay: 0.11457787407074072

drop\_path: 0.19009135885224654

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.475151538848877 seconds

Loss: 1.3184

Train Accuracy: 52.23%

Test Accuracy: 54.16%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5812609195709229 seconds

LR changed during epoch: 5.80e-04 -> 5.78e-04

total runtime to train this model was 27.314087867736816 seconds

Hyperparameteres for model 3 at epoch 9

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4140803813934326 seconds

Loss: 1.2711

Train Accuracy: 54.12%

Test Accuracy: 56.11%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7104227542877197 seconds

LR changed during epoch: 2.79e-04 -> 2.78e-04

total runtime to train this model was 27.169589042663574 seconds

Hyperparameteres for model 4 at epoch 9

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.497011661529541 seconds

Loss: 1.2380

Train Accuracy: 55.46%

Test Accuracy: 56.33%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

```
=====
Epoch 9 Summary:
=====
```

Time: 159.65s (Avg member: 31.93s)  
Population Mean Accuracy: 55.31%  
Best Member Accuracy: 56.33%  
Mean Batch Size: 256  
Mean Learning Rate: 6.27e-04  
Mean Weight Decay: 0.081

```
=====
Epoch 10/70
=====
```

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6083955764770508 seconds  
LR changed during epoch: 6.72e-04 -> 6.68e-04  
total runtime to train this model was 27.454846620559692 seconds  
Hyperparameteres for model 0 at epoch 10  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4779672622680664 seconds

Loss: 1.2452  
Train Accuracy: 54.90%  
Test Accuracy: 56.22%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6651055812835693 seconds

LR changed during epoch: 8.04e-04 -> 8.00e-04  
total runtime to train this model was 27.365382194519043 seconds  
Hyperparameteres for model 1 at epoch 10

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.48547101020813 seconds

Loss: 1.2445  
Train Accuracy: 55.20%  
Test Accuracy: 56.97%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6887874603271484 seconds  
LR changed during epoch: 6.27e-04 -> 7.83e-04  
total runtime to train this model was 26.900542974472046 seconds  
Hyperparameteres for model 2 at epoch 10  
lr: 0.0007826127442238477

weight\_decay: 0.11457787407074072

drop\_path: 0.19009135885224654

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5181970596313477 seconds

Loss: 1.3197  
Train Accuracy: 52.28%  
Test Accuracy: 51.47%  
Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6611220836639404 seconds  
LR changed during epoch: 5.78e-04 -> 5.75e-04  
total runtime to train this model was 27.652992725372314 seconds  
Hyperparameteres for model 3 at epoch 10  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.543776512145996 seconds

Loss: 1.2232  
Train Accuracy: 55.87%  
Test Accuracy: 56.06%  
Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7341187000274658 seconds  
LR changed during epoch: 2.78e-04 -> 2.76e-04  
total runtime to train this model was 27.802131414413452 seconds  
Hyperparameteres for model 4 at epoch 10  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.509159564971924 seconds

Loss: 1.2000  
Train Accuracy: 56.74%  
Test Accuracy: 57.64%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 10) ---

==== PBT Exploit & Explore ====

Top performers: [57.64]

Bottom performers: [51.47]

Member 2: lr changed from 0.0007826127442238477 to 0.0009088741866817679  
Member 2: weight\_decay changed from 0.11457787407074072 to 0.10845313260928631  
Member 2: drop\_path changed from 0.19009135885224654 to 0.19308666360295473  
Member 2 copied from 4

LR=9.09e-04, WD=0.108, DropPath=0.193, Warmup=5 epochs, Batch=256

=====

Epoch 10 Summary:

=====

Time: 160.33s (Avg member: 32.06s)

Population Mean Accuracy: 55.67%

Best Member Accuracy: 57.64%

Mean Batch Size: 256

Mean Learning Rate: 6.53e-04

Mean Weight Decay: 0.080

=====

Epoch 11/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6014823913574219 seconds

LR changed during epoch: 6.68e-04 -> 6.64e-04

total runtime to train this model was 27.055909395217896 seconds

Hyperparameteres for model 0 at epoch 11

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.86065411567688 seconds

Loss: 1.2080

Train Accuracy: 56.46%

Test Accuracy: 56.61%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.765146255493164 seconds

LR changed during epoch: 8.00e-04 -> 7.95e-04

total runtime to train this model was 26.748092889785767 seconds

Hyperparameteres for model 1 at epoch 11

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9003641605377197 seconds

Loss: 1.1964

Train Accuracy: 57.06%

Test Accuracy: 59.00%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5992710590362549 seconds

LR changed during epoch: 9.27e-07 -> 1.83e-04

total runtime to train this model was 26.927343130111694 seconds

Hyperparameteres for model 2 at epoch 11

lr: 0.0009088741866817679

weight\_decay: 0.10845313260928631

drop\_path: 0.19308666360295473

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.437384843826294 seconds

Loss: 1.1342

Train Accuracy: 59.30%

Test Accuracy: 58.17%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6219513416290283 seconds

LR changed during epoch: 5.75e-04 -> 5.71e-04

total runtime to train this model was 27.423109531402588 seconds

Hyperparameteres for model 3 at epoch 11

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5439233779907227 seconds

Loss: 1.1946

Train Accuracy: 56.97%

Test Accuracy: 57.27%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6747441291809082 seconds  
LR changed during epoch: 2.76e-04 -> 2.75e-04  
total runtime to train this model was 27.259328603744507 seconds  
Hyperparameteres for model 4 at epoch 11  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.8629250526428223 seconds

Loss: 1.1581  
Train Accuracy: 58.47%

Test Accuracy: 56.19%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 11 Summary:  
=====

Time: 159.59s (Avg member: 31.92s)

Population Mean Accuracy: 57.45%

Best Member Accuracy: 59.00%

Mean Batch Size: 256

Mean Learning Rate: 6.53e-04

Mean Weight Decay: 0.080

=====  
Epoch 12/70  
=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6058509349822998 seconds

LR changed during epoch: 6.64e-04 -> 6.59e-04

total runtime to train this model was 27.80219268798828 seconds

Hyperparameteres for model 0 at epoch 12

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5385427474975586 seconds

Loss: 1.1726  
Train Accuracy: 57.92%

Test Accuracy: 59.64%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6489191055297852 seconds

LR changed during epoch: 7.95e-04 -> 7.89e-04

total runtime to train this model was 27.30382490158081 seconds

Hyperparameteres for model 1 at epoch 12

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.523550510406494 seconds

Loss: 1.1481

Train Accuracy: 59.04%

Test Accuracy: 61.40%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5917103290557861 seconds

LR changed during epoch: 1.83e-04 -> 3.64e-04

total runtime to train this model was 27.083640813827515 seconds

Hyperparameteres for model 2 at epoch 12

lr: 0.0009088741866817679

weight\_decay: 0.10845313260928631

drop\_path: 0.19308666360295473

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.0894405841827393 seconds

Loss: 1.1763

Train Accuracy: 57.65%

Test Accuracy: 57.72%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.8345260620117188 seconds

LR changed during epoch: 5.71e-04 -> 5.67e-04

total runtime to train this model was 27.394789218902588 seconds

Hyperparameteres for model 3 at epoch 12

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.604426860809326 seconds

Loss: 1.1595

Train Accuracy: 58.15%

Test Accuracy: 59.55%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6329529285430908 seconds  
LR changed during epoch: 2.75e-04 -> 2.72e-04  
total runtime to train this model was 27.398761987686157 seconds  
Hyperparameteres for model 4 at epoch 12  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.008655183396399702  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5255703926086426 seconds  
Loss: 1.1184  
Train Accuracy: 59.73%  
Test Accuracy: 59.53%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 12 Summary:  
=====

Time: 159.83s (Avg member: 31.97s)  
Population Mean Accuracy: 59.57%  
Best Member Accuracy: 61.40%  
Mean Batch Size: 256  
Mean Learning Rate: 6.53e-04  
Mean Weight Decay: 0.080

=====  
Epoch 13/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6313464641571045 seconds  
LR changed during epoch: 6.59e-04 -> 6.53e-04  
total runtime to train this model was 27.20889949798584 seconds  
Hyperparameteres for model 0 at epoch 13  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148  
drop\_path: 0.10322556685431711  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.444084882736206 seconds  
Loss: 1.1364  
Train Accuracy: 59.48%  
Test Accuracy: 60.02%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7424540519714355 seconds

LR changed during epoch: 7.89e-04 -> 7.82e-04

total runtime to train this model was 27.00206232070923 seconds

Hyperparameteres for model 1 at epoch 13

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.459904432296753 seconds

Loss: 1.1088

Train Accuracy: 60.06%

Test Accuracy: 59.76%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6400206089019775 seconds

LR changed during epoch: 3.64e-04 -> 5.46e-04

total runtime to train this model was 27.296759366989136 seconds

Hyperparameteres for model 2 at epoch 13

lr: 0.0009088741866817679

weight\_decay: 0.10845313260928631

drop\_path: 0.19308666360295473

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.628488540649414 seconds

Loss: 1.2168

Train Accuracy: 56.16%

Test Accuracy: 57.58%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6631393432617188 seconds

LR changed during epoch: 5.67e-04 -> 5.62e-04

total runtime to train this model was 27.507279872894287 seconds

Hyperparameteres for model 3 at epoch 13

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.548936367034912 seconds

Loss: 1.1148  
Train Accuracy: 59.97%  
Test Accuracy: 60.46%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.8418233394622803 seconds

LR changed during epoch: 2.72e-04 -> 2.70e-04  
total runtime to train this model was 27.043627500534058 seconds

Hyperparameteres for model 4 at epoch 13

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.536951780319214 seconds

Loss: 1.0838  
Train Accuracy: 61.12%  
Test Accuracy: 61.23%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 13 Summary:

=====

Time: 160.35s (Avg member: 32.07s)

Population Mean Accuracy: 59.81%

Best Member Accuracy: 61.23%

Mean Batch Size: 256

Mean Learning Rate: 6.53e-04

Mean Weight Decay: 0.080

=====

Epoch 14/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6063125133514404 seconds

LR changed during epoch: 6.53e-04 -> 6.47e-04  
total runtime to train this model was 27.345046043395996 seconds

Hyperparameteres for model 0 at epoch 14

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4878885746002197 seconds

Loss: 1.1097

Train Accuracy: 60.02%

Test Accuracy: 60.95%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6328787803649902 seconds

LR changed during epoch: 7.82e-04 -> 7.74e-04

total runtime to train this model was 26.973158836364746 seconds

Hyperparameteres for model 1 at epoch 14

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4710724353790283 seconds

Loss: 1.0744

Train Accuracy: 61.52%

Test Accuracy: 63.59%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6054418087005615 seconds

LR changed during epoch: 5.46e-04 -> 7.28e-04

total runtime to train this model was 27.254876852035522 seconds

Hyperparameteres for model 2 at epoch 14

lr: 0.0009088741866817679

weight\_decay: 0.10845313260928631

drop\_path: 0.19308666360295473

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.479506731033325 seconds

Loss: 1.2214

Train Accuracy: 56.24%

Test Accuracy: 52.95%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.664419174194336 seconds

LR changed during epoch: 5.62e-04 -> 5.56e-04

total runtime to train this model was 27.390233993530273 seconds

Hyperparameteres for model 3 at epoch 14

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5658817291259766 seconds

Loss: 1.0843

Train Accuracy: 61.09%

Test Accuracy: 61.13%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5920445919036865 seconds

LR changed during epoch: 2.70e-04 -> 2.67e-04

total runtime to train this model was 27.092431783676147 seconds

Hyperparameteres for model 4 at epoch 14

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.470339775085449 seconds

Loss: 1.0559

Train Accuracy: 62.20%

Test Accuracy: 61.43%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 14 Summary:

=====

Time: 158.90s (Avg member: 31.78s)

Population Mean Accuracy: 60.01%

Best Member Accuracy: 63.59%

Mean Batch Size: 256

Mean Learning Rate: 6.53e-04

Mean Weight Decay: 0.080

=====

Epoch 15/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.617793321609497 seconds

LR changed during epoch: 6.47e-04 -> 6.39e-04

total runtime to train this model was 27.053136348724365 seconds

Hyperparameteres for model 0 at epoch 15

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6537768840789795 seconds

Loss: 1.0779

Train Accuracy: 61.32%

Test Accuracy: 62.07%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.751645803451538 seconds

LR changed during epoch: 7.74e-04 -> 7.65e-04

total runtime to train this model was 27.11827325820923 seconds

Hyperparameteres for model 1 at epoch 15

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.153172016143799 seconds

Loss: 1.0389

Train Accuracy: 62.96%

Test Accuracy: 63.00%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5999393463134766 seconds

LR changed during epoch: 7.28e-04 -> 9.09e-04

total runtime to train this model was 27.73898434638977 seconds

Hyperparameteres for model 2 at epoch 15

lr: 0.0009088741866817679

weight\_decay: 0.10845313260928631

drop\_path: 0.19308666360295473

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5575876235961914 seconds

Loss: 1.2265

Train Accuracy: 56.06%

Test Accuracy: 55.92%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6121742725372314 seconds

LR changed during epoch: 5.56e-04 -> 5.50e-04

total runtime to train this model was 27.687371253967285 seconds

Hyperparameteres for model 3 at epoch 15

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.641993999481201 seconds

Loss: 1.0559

Train Accuracy: 62.27%

Test Accuracy: 63.00%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.8043360710144043 seconds

LR changed during epoch: 2.67e-04 -> 2.64e-04

total runtime to train this model was 28.388143301010132 seconds

Hyperparameteres for model 4 at epoch 15

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5391147136688232 seconds

Loss: 1.0245

Train Accuracy: 63.27%

Test Accuracy: 63.30%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 15) ---

==== PBT Exploit & Explore ===

Top performers: [63.3]

Bottom performers: [55.92]

Member 2: lr changed from 0.0009088741866817679 to 0.001000000000000000

Member 2: weight\_decay changed from 0.10845313260928631 to 0.11054682221947956

Member 2: drop\_path changed from 0.19308666360295473 to 0.19751349792131337

Member 2 copied from 4

LR=1.00e-03, WD=0.111, DropPath=0.198, Warmup=5 epochs, Batch=256

=====

Epoch 15 Summary:

=====

Time: 161.25s (Avg member: 32.25s)

Population Mean Accuracy: 61.46%

Best Member Accuracy: 63.30%

Mean Batch Size: 256

Mean Learning Rate: 6.71e-04

Mean Weight Decay: 0.080

```
=====
Epoch 16/70
=====
```

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7744531631469727 seconds  
LR changed during epoch: 6.39e-04 -> 6.31e-04  
total runtime to train this model was 29.294052839279175 seconds  
Hyperparameteres for model 0 at epoch 16  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.576540946960449 seconds

Loss: 1.0486  
Train Accuracy: 62.67%  
Test Accuracy: 64.04%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6154825687408447 seconds  
LR changed during epoch: 7.65e-04 -> 7.56e-04  
total runtime to train this model was 27.375821352005005 seconds  
Hyperparameteres for model 1 at epoch 16  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4540345668792725 seconds

Loss: 1.0016  
Train Accuracy: 64.42%  
Test Accuracy: 64.20%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7059359550476074 seconds  
LR changed during epoch: 1.02e-06 -> 2.01e-04  
total runtime to train this model was 27.373112678527832 seconds  
Hyperparameteres for model 2 at epoch 16  
lr: 0.0010000000000000002

weight\_decay: 0.11054682221947956

drop\_path: 0.19751349792131337

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5722434520721436 seconds

Loss: 0.9831

Train Accuracy: 64.97%

Test Accuracy: 64.36%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6197054386138916 seconds

LR changed during epoch: 5.50e-04 -> 5.43e-04

total runtime to train this model was 27.397501707077026 seconds

Hyperparameteres for model 3 at epoch 16

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4463016986846924 seconds

Loss: 1.0150

Train Accuracy: 63.73%

Test Accuracy: 63.71%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5791864395141602 seconds

LR changed during epoch: 2.64e-04 -> 2.61e-04

total runtime to train this model was 27.436459064483643 seconds

Hyperparameteres for model 4 at epoch 16

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6983115673065186 seconds

Loss: 0.9940

Train Accuracy: 64.62%

Test Accuracy: 63.85%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 16 Summary:

=====

Time: 162.18s (Avg member: 32.44s)

Population Mean Accuracy: 64.03%  
Best Member Accuracy: 64.36%  
Mean Batch Size: 256  
Mean Learning Rate: 6.71e-04  
Mean Weight Decay: 0.080

=====  
Epoch 17/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7939224243164062 seconds  
LR changed during epoch: 6.31e-04 -> 6.23e-04  
total runtime to train this model was 27.43129253387451 seconds  
Hyperparameteres for model 0 at epoch 17  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8716135025024414 seconds

Loss: 1.0172  
Train Accuracy: 63.86%  
Test Accuracy: 63.81%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5726299285888672 seconds  
LR changed during epoch: 7.56e-04 -> 7.45e-04  
total runtime to train this model was 27.44245672225952 seconds  
Hyperparameteres for model 1 at epoch 17  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5160555839538574 seconds

Loss: 0.9799  
Train Accuracy: 65.06%  
Test Accuracy: 65.91%  
Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6553959846496582 seconds  
LR changed during epoch: 2.01e-04 -> 4.01e-04  
total runtime to train this model was 27.013071537017822 seconds  
Hyperparameteres for model 2 at epoch 17  
lr: 0.0010000000000000002

weight\_decay: 0.11054682221947956

drop\_path: 0.19751349792131337

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4206583499908447 seconds

Loss: 1.0394

Train Accuracy: 62.86%

Test Accuracy: 62.04%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6294264793395996 seconds

LR changed during epoch: 5.43e-04 -> 5.36e-04

total runtime to train this model was 26.940176963806152 seconds

Hyperparameteres for model 3 at epoch 17

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.6698176860809326 seconds

Loss: 0.9941

Train Accuracy: 64.58%

Test Accuracy: 63.98%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6133496761322021 seconds

LR changed during epoch: 2.61e-04 -> 2.58e-04

total runtime to train this model was 27.163777828216553 seconds

Hyperparameteres for model 4 at epoch 17

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.557424306869507 seconds

Loss: 0.9684

Train Accuracy: 65.46%

Test Accuracy: 64.58%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

```
=====
Epoch 17 Summary:
=====
```

Time: 159.52s (Avg member: 31.90s)  
Population Mean Accuracy: 64.06%  
Best Member Accuracy: 65.91%  
Mean Batch Size: 256  
Mean Learning Rate: 6.71e-04  
Mean Weight Decay: 0.080

```
=====
Epoch 18/70
=====
```

--- Training Member 0 (Batch size: 256) ---  
built data in 1.635019302368164 seconds  
LR changed during epoch: 6.23e-04 -> 6.14e-04  
total runtime to train this model was 27.048292636871338 seconds  
Hyperparameteres for model 0 at epoch 18  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4451849460601807 seconds

Loss: 0.9939  
Train Accuracy: 64.60%  
Test Accuracy: 63.40%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6225502490997314 seconds

LR changed during epoch: 7.45e-04 -> 7.34e-04  
total runtime to train this model was 26.593186140060425 seconds  
Hyperparameteres for model 1 at epoch 18

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.481856107711792 seconds

Loss: 0.9447  
Train Accuracy: 66.52%  
Test Accuracy: 66.51%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6916565895080566 seconds  
LR changed during epoch: 4.01e-04 -> 6.01e-04  
total runtime to train this model was 26.96253776550293 seconds  
Hyperparameteres for model 2 at epoch 18  
lr: 0.0010000000000000002

weight\_decay: 0.11054682221947956

drop\_path: 0.19751349792131337

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.317537307739258 seconds

Loss: 1.0991  
Train Accuracy: 60.87%  
Test Accuracy: 62.20%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.577376127243042 seconds  
LR changed during epoch: 5.36e-04 -> 5.28e-04  
total runtime to train this model was 26.74933362007141 seconds  
Hyperparameteres for model 3 at epoch 18  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4205996990203857 seconds

Loss: 0.9642  
Train Accuracy: 65.55%  
Test Accuracy: 63.98%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5640869140625 seconds  
LR changed during epoch: 2.58e-04 -> 2.54e-04  
total runtime to train this model was 26.39477825164795 seconds  
Hyperparameteres for model 4 at epoch 18  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4065380096435547 seconds

Loss: 0.9398  
Train Accuracy: 66.50%  
Test Accuracy: 65.23%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 18 Summary:

=====

Time: 156.13s (Avg member: 31.23s)  
Population Mean Accuracy: 64.26%  
Best Member Accuracy: 66.51%  
Mean Batch Size: 256  
Mean Learning Rate: 6.71e-04  
Mean Weight Decay: 0.080

=====

Epoch 19/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5874385833740234 seconds  
LR changed during epoch: 6.14e-04 -> 6.04e-04  
total runtime to train this model was 26.05447483062744 seconds  
Hyperparameteres for model 0 at epoch 19  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.475278377532959 seconds

Loss: 0.9651  
Train Accuracy: 65.71%  
Test Accuracy: 65.02%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.7752759456634521 seconds  
LR changed during epoch: 7.34e-04 -> 7.22e-04  
total runtime to train this model was 25.450001001358032 seconds  
Hyperparameteres for model 1 at epoch 19  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.397829294204712 seconds

Loss: 0.9281  
Train Accuracy: 67.08%

Test Accuracy: 67.39%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.580543041229248 seconds  
LR changed during epoch: 6.01e-04 -> 8.01e-04  
total runtime to train this model was 26.588886737823486 seconds  
Hyperparameteres for model 2 at epoch 19  
lr: 0.0010000000000000002

weight\_decay: 0.11054682221947956  
drop\_path: 0.19751349792131337  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.387819766998291 seconds  
Loss: 1.1380  
Train Accuracy: 59.23%  
Test Accuracy: 60.31%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5664482116699219 seconds  
LR changed during epoch: 5.28e-04 -> 5.19e-04  
total runtime to train this model was 26.41088080406189 seconds  
Hyperparameteres for model 3 at epoch 19  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4359960556030273 seconds  
Loss: 0.9392  
Train Accuracy: 66.60%  
Test Accuracy: 65.79%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5718629360198975 seconds  
LR changed during epoch: 2.54e-04 -> 2.50e-04  
total runtime to train this model was 26.282346725463867 seconds  
Hyperparameteres for model 4 at epoch 19  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.008655183396399702  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3426647186279297 seconds

Loss: 0.9208

Train Accuracy: 67.26%

Test Accuracy: 66.70%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 19 Summary:

=====

Time: 153.12s (Avg member: 30.62s)

Population Mean Accuracy: 65.04%

Best Member Accuracy: 67.39%

Mean Batch Size: 256

Mean Learning Rate: 6.71e-04

Mean Weight Decay: 0.080

=====

Epoch 20/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.754465103149414 seconds

LR changed during epoch: 6.04e-04 -> 5.93e-04

total runtime to train this model was 27.72263264656067 seconds

Hyperparameteres for model 0 at epoch 20

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 4.06408166885376 seconds

Loss: 0.9422

Train Accuracy: 66.32%

Test Accuracy: 66.98%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6422464847564697 seconds

LR changed during epoch: 7.22e-04 -> 7.10e-04

total runtime to train this model was 28.215086936950684 seconds

Hyperparameteres for model 1 at epoch 20

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4888362884521484 seconds

Loss: 0.9072

Train Accuracy: 67.64%

Test Accuracy: 68.43%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6756975650787354 seconds

LR changed during epoch: 8.01e-04 -> 1.00e-03

total runtime to train this model was 27.687363862991333 seconds

Hyperparameteres for model 2 at epoch 20

lr: 0.00100000000000000002

weight\_decay: 0.11054682221947956

drop\_path: 0.19751349792131337

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5418753623962402 seconds

Loss: 1.1391

Train Accuracy: 59.13%

Test Accuracy: 59.40%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.7238810062408447 seconds

LR changed during epoch: 5.19e-04 -> 5.10e-04

total runtime to train this model was 27.23684310913086 seconds

Hyperparameteres for model 3 at epoch 20

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.870150566101074 seconds

Loss: 0.9130

Train Accuracy: 67.32%

Test Accuracy: 66.23%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.626664400100708 seconds

LR changed during epoch: 2.50e-04 -> 2.45e-04

total runtime to train this model was 27.476279497146606 seconds

Hyperparameteres for model 4 at epoch 20

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4943132400512695 seconds

Loss: 0.9097

Train Accuracy: 67.59%

Test Accuracy: 67.23%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 20) ---

==== PBT Exploit & Explore ===

Top performers: [68.43]

Bottom performers: [59.4]

Member 2: lr changed from 0.001000000000000002 to 0.0007311898711548193

Member 2: weight\_decay changed from 0.11054682221947956 to 0.09030465508719347

Member 2: drop\_path changed from 0.19751349792131337 to 0.16628173084551218

Member 2 copied from 1

LR=7.31e-04, WD=0.090, DropPath=0.166, Warmup=5 epochs, Batch=256

=====

Epoch 20 Summary:

=====

Time: 163.44s (Avg member: 32.69s)

Population Mean Accuracy: 65.65%

Best Member Accuracy: 68.43%

Mean Batch Size: 256

Mean Learning Rate: 6.17e-04

Mean Weight Decay: 0.076

=====

Epoch 21/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6314492225646973 seconds

LR changed during epoch: 5.93e-04 -> 5.82e-04

total runtime to train this model was 27.126174449920654 seconds

Hyperparameteres for model 0 at epoch 21

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6067183017730713 seconds

Loss: 0.9273

Train Accuracy: 67.19%

Test Accuracy: 67.27%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6601250171661377 seconds

LR changed during epoch: 7.10e-04 -> 6.96e-04

total runtime to train this model was 27.08518624305725 seconds

Hyperparameteres for model 1 at epoch 21

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.499345302581787 seconds

Loss: 0.8781

Train Accuracy: 68.94%

Test Accuracy: 68.50%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6691362857818604 seconds

LR changed during epoch: 7.46e-07 -> 1.47e-04

total runtime to train this model was 27.578226566314697 seconds

Hyperparameteres for model 2 at epoch 21

lr: 0.0007311898711548193

weight\_decay: 0.09030465508719347

drop\_path: 0.16628173084551218

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5949742794036865 seconds

Loss: 0.8036

Train Accuracy: 71.57%

Test Accuracy: 70.74%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.606435775756836 seconds

LR changed during epoch: 5.10e-04 -> 5.00e-04

total runtime to train this model was 27.856829166412354 seconds

Hyperparameteres for model 3 at epoch 21

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5476038455963135 seconds

Loss: 0.8903  
Train Accuracy: 68.24%  
Test Accuracy: 68.46%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.611407995223999 seconds  
LR changed during epoch: 2.45e-04 -> 2.41e-04

total runtime to train this model was 27.395085096359253 seconds

Hyperparameteres for model 4 at epoch 21

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8099582195281982 seconds

Loss: 0.8816  
Train Accuracy: 68.71%  
Test Accuracy: 67.26%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 21 Summary:

=====

Time: 160.61s (Avg member: 32.12s)

Population Mean Accuracy: 68.45%

Best Member Accuracy: 70.74%

Mean Batch Size: 256

Mean Learning Rate: 6.17e-04

Mean Weight Decay: 0.076

=====

Epoch 22/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.7599270343780518 seconds

LR changed during epoch: 5.82e-04 -> 5.70e-04  
total runtime to train this model was 27.264912605285645 seconds

Hyperparameteres for model 0 at epoch 22

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.8304271697998047 seconds

Loss: 0.9073

Train Accuracy: 67.56%

Test Accuracy: 67.85%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.5832037925720215 seconds

LR changed during epoch: 6.96e-04 -> 6.82e-04

total runtime to train this model was 27.897130489349365 seconds

Hyperparameteres for model 1 at epoch 22

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.516953945159912 seconds

Loss: 0.8492

Train Accuracy: 69.75%

Test Accuracy: 68.04%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6069645881652832 seconds

LR changed during epoch: 1.47e-04 -> 2.93e-04

total runtime to train this model was 28.738401412963867 seconds

Hyperparameteres for model 2 at epoch 22

lr: 0.0007311898711548193

weight\_decay: 0.09030465508719347

drop\_path: 0.16628173084551218

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.9909987449645996 seconds

Loss: 0.7811

Train Accuracy: 72.28%

Test Accuracy: 71.25%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.7504427433013916 seconds

LR changed during epoch: 5.00e-04 -> 4.90e-04

total runtime to train this model was 28.450392723083496 seconds

Hyperparameteres for model 3 at epoch 22

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4973690509796143 seconds

Loss: 0.8649

Train Accuracy: 69.25%

Test Accuracy: 68.83%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.674767017364502 seconds

LR changed during epoch: 2.41e-04 -> 2.36e-04

total runtime to train this model was 27.82166838645935 seconds

Hyperparameteres for model 4 at epoch 22

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.528963565826416 seconds

Loss: 0.8561

Train Accuracy: 69.43%

Test Accuracy: 68.22%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 22 Summary:

=====

Time: 163.20s (Avg member: 32.64s)

Population Mean Accuracy: 68.84%

Best Member Accuracy: 71.25%

Mean Batch Size: 256

Mean Learning Rate: 6.17e-04

Mean Weight Decay: 0.076

=====

Epoch 23/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6286804676055908 seconds

LR changed during epoch: 5.70e-04 -> 5.58e-04

total runtime to train this model was 27.63360071182251 seconds

Hyperparameteres for model 0 at epoch 23

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.121997356414795 seconds

Loss: 0.8826

Train Accuracy: 69.00%

Test Accuracy: 68.46%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.8391575813293457 seconds

LR changed during epoch: 6.82e-04 -> 6.68e-04

total runtime to train this model was 27.837608575820923 seconds

Hyperparameteres for model 1 at epoch 23

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.516319513320923 seconds

Loss: 0.8392

Train Accuracy: 70.18%

Test Accuracy: 70.50%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6640498638153076 seconds

LR changed during epoch: 2.93e-04 -> 4.39e-04

total runtime to train this model was 27.876657485961914 seconds

Hyperparameteres for model 2 at epoch 23

lr: 0.0007311898711548193

weight\_decay: 0.09030465508719347

drop\_path: 0.16628173084551218

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5367040634155273 seconds

Loss: 0.7902

Train Accuracy: 72.17%

Test Accuracy: 70.37%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6430578231811523 seconds

LR changed during epoch: 4.90e-04 -> 4.80e-04

total runtime to train this model was 27.59720253944397 seconds

Hyperparameteres for model 3 at epoch 23

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.9011666774749756 seconds

Loss: 0.8476

Train Accuracy: 70.19%

Test Accuracy: 68.38%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.8281033039093018 seconds

LR changed during epoch: 2.36e-04 -> 2.31e-04

total runtime to train this model was 27.830713272094727 seconds

Hyperparameteres for model 4 at epoch 23

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.644099712371826 seconds

Loss: 0.8294

Train Accuracy: 70.31%

Test Accuracy: 68.39%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 23 Summary:

=====

Time: 162.43s (Avg member: 32.49s)

Population Mean Accuracy: 69.22%

Best Member Accuracy: 70.50%

Mean Batch Size: 256

Mean Learning Rate: 6.17e-04

Mean Weight Decay: 0.076

=====

Epoch 24/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6492259502410889 seconds

LR changed during epoch: 5.58e-04 -> 5.45e-04

total runtime to train this model was 27.675156831741333 seconds

Hyperparameteres for model 0 at epoch 24

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.547028064727783 seconds

Loss: 0.8612

Train Accuracy: 69.50%

Test Accuracy: 68.93%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6404476165771484 seconds

LR changed during epoch: 6.68e-04 -> 6.52e-04

total runtime to train this model was 27.42810559272766 seconds

Hyperparameteres for model 1 at epoch 24

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9335365295410156 seconds

Loss: 0.8223

Train Accuracy: 70.87%

Test Accuracy: 71.74%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.775256872177124 seconds

LR changed during epoch: 4.39e-04 -> 5.86e-04

total runtime to train this model was 27.96640706062317 seconds

Hyperparameteres for model 2 at epoch 24

lr: 0.0007311898711548193

weight\_decay: 0.09030465508719347

drop\_path: 0.16628173084551218

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6426079273223877 seconds

Loss: 0.8152

Train Accuracy: 71.08%

Test Accuracy: 69.61%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

```
--- Training Member 3 (Batch size: 256) ---
built data in 1.627596139907837 seconds
LR changed during epoch: 4.80e-04 -> 4.69e-04
total runtime to train this model was 28.03724503517151 seconds
Hyperparameteres for model 3 at epoch 24
lr: 0.0005832876162076942

weight_decay: 0.06881561531524874

drop_path: 0.03329510856734546

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.517932653427124 seconds
Loss: 0.8239
Train Accuracy: 70.80%
Test Accuracy: 69.99%
Google Drive already mounted.
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_3_seed_217401.pt

--- Training Member 4 (Batch size: 256) ---
built data in 1.6263513565063477 seconds
LR changed during epoch: 2.31e-04 -> 2.26e-04
total runtime to train this model was 27.688438653945923 seconds
Hyperparameteres for model 4 at epoch 24
lr: 0.0002804193304595399

weight_decay: 0.03654601866836071

drop_path: 0.008655183396399702

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.6171133518218994 seconds
Loss: 0.8219
Train Accuracy: 70.83%
Test Accuracy: 70.16%
Google Drive already mounted.
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_4_seed_217401.pt

=====
Epoch 24 Summary:
=====
Time: 161.67s (Avg member: 32.33s)
Population Mean Accuracy: 70.09%
Best Member Accuracy: 71.74%
Mean Batch Size: 256
Mean Learning Rate: 6.17e-04
Mean Weight Decay: 0.076

=====
Epoch 25/70
=====

--- Training Member 0 (Batch size: 256) ---
```

built data in 1.7555878162384033 seconds  
LR changed during epoch: 5.45e-04 -> 5.32e-04  
total runtime to train this model was 27.68167781829834 seconds  
Hyperparameteres for model 0 at epoch 25  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2469754219055176 seconds

Loss: 0.8462  
Train Accuracy: 69.92%  
Test Accuracy: 69.64%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6113595962524414 seconds  
LR changed during epoch: 6.52e-04 -> 6.37e-04  
total runtime to train this model was 28.04918622970581 seconds  
Hyperparameteres for model 1 at epoch 25  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4644949436187744 seconds

Loss: 0.7988  
Train Accuracy: 71.60%  
Test Accuracy: 71.72%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6532456874847412 seconds  
LR changed during epoch: 5.86e-04 -> 7.31e-04  
total runtime to train this model was 28.006168842315674 seconds  
Hyperparameteres for model 2 at epoch 25  
lr: 0.0007311898711548193

weight\_decay: 0.09030465508719347

drop\_path: 0.16628173084551218

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5961971282958984 seconds

Loss: 0.8309  
Train Accuracy: 70.61%  
Test Accuracy: 69.06%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7974364757537842 seconds  
LR changed during epoch: 4.69e-04 -> 4.57e-04  
total runtime to train this model was 27.914124488830566 seconds  
Hyperparameteres for model 3 at epoch 25  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.191261053085327 seconds  
Loss: 0.8033  
Train Accuracy: 71.57%  
Test Accuracy: 70.12%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.627387523651123 seconds  
LR changed during epoch: 2.26e-04 -> 2.20e-04  
total runtime to train this model was 27.927078247070312 seconds  
Hyperparameteres for model 4 at epoch 25  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.008655183396399702  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.534626007080078 seconds  
Loss: 0.8011  
Train Accuracy: 71.81%  
Test Accuracy: 69.91%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 25) ---

==== PBT Exploit & Explore ====  
Top performers: [71.72]  
Bottom performers: [69.06]  
Member 2: lr changed from 0.0007311898711548193 to 0.00046980901401525734  
Member 2: weight\_decay changed from 0.09030465508719347 to 0.09667856860397339  
Member 2: drop\_path changed from 0.16628173084551218 to 0.18032196419187985  
Member 2 copied from 1  
LR=4.70e-04, WD=0.097, DropPath=0.180, Warmup=5 epochs, Batch=256

```
=====
Epoch 25 Summary:
=====
```

Time: 163.33s (Avg member: 32.66s)  
Population Mean Accuracy: 70.09%  
Best Member Accuracy: 71.72%  
Mean Batch Size: 256  
Mean Learning Rate: 5.65e-04  
Mean Weight Decay: 0.078

```
=====
Epoch 26/70
=====
```

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6043660640716553 seconds  
LR changed during epoch: 5.32e-04 -> 5.18e-04  
total runtime to train this model was 27.731329441070557 seconds  
Hyperparameteres for model 0 at epoch 26  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4852867126464844 seconds

Loss: 0.8265  
Train Accuracy: 70.81%  
Test Accuracy: 70.61%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.774423360824585 seconds  
LR changed during epoch: 6.37e-04 -> 6.20e-04  
total runtime to train this model was 28.522674083709717 seconds  
Hyperparameteres for model 1 at epoch 26  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.063753604888916 seconds

Loss: 0.7780  
Train Accuracy: 72.44%  
Test Accuracy: 72.04%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6796884536743164 seconds  
LR changed during epoch: 4.79e-07 -> 9.44e-05  
total runtime to train this model was 27.349336624145508 seconds  
Hyperparameteres for model 2 at epoch 26  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4251952171325684 seconds

Loss: 0.7193  
Train Accuracy: 74.48%  
Test Accuracy: 74.54%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.623871088027954 seconds  
LR changed during epoch: 4.57e-04 -> 4.46e-04  
total runtime to train this model was 27.376400470733643 seconds  
Hyperparameteres for model 3 at epoch 26  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.490490198135376 seconds

Loss: 0.7848  
Train Accuracy: 72.12%  
Test Accuracy: 70.78%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7377946376800537 seconds  
LR changed during epoch: 2.20e-04 -> 2.14e-04  
total runtime to train this model was 27.41043186187744 seconds  
Hyperparameteres for model 4 at epoch 26  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.431079626083374 seconds

Loss: 0.7810  
Train Accuracy: 72.25%  
Test Accuracy: 69.51%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 26 Summary:

=====

Time: 161.92s (Avg member: 32.38s)  
Population Mean Accuracy: 71.50%  
Best Member Accuracy: 74.54%  
Mean Batch Size: 256  
Mean Learning Rate: 5.65e-04  
Mean Weight Decay: 0.078

=====

Epoch 27/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6174633502960205 seconds  
LR changed during epoch: 5.18e-04 -> 5.04e-04  
total runtime to train this model was 27.43945574760437 seconds  
Hyperparameteres for model 0 at epoch 27  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5242326259613037 seconds

Loss: 0.8109  
Train Accuracy: 71.52%  
Test Accuracy: 70.06%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6431384086608887 seconds  
LR changed during epoch: 6.20e-04 -> 6.03e-04  
total runtime to train this model was 27.204219818115234 seconds  
Hyperparameteres for model 1 at epoch 27  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5709359645843506 seconds

Loss: 0.7470  
Train Accuracy: 73.35%

Test Accuracy: 72.88%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.657627820968628 seconds  
LR changed during epoch: 9.44e-05 -> 1.88e-04  
total runtime to train this model was 27.10930609703064 seconds  
Hyperparameteres for model 2 at epoch 27  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339  
drop\_path: 0.18032196419187985  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.7121753692626953 seconds  
Loss: 0.6750  
Train Accuracy: 76.11%  
Test Accuracy: 74.69%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6715245246887207 seconds  
LR changed during epoch: 4.46e-04 -> 4.34e-04  
total runtime to train this model was 27.654754877090454 seconds  
Hyperparameteres for model 3 at epoch 27  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4805402755737305 seconds  
Loss: 0.7618  
Train Accuracy: 72.90%  
Test Accuracy: 71.27%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.583996295928955 seconds  
LR changed during epoch: 2.14e-04 -> 2.09e-04  
total runtime to train this model was 27.015642881393433 seconds  
Hyperparameteres for model 4 at epoch 27  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.008655183396399702  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4650354385375977 seconds

Loss: 0.7619

Train Accuracy: 72.87%

Test Accuracy: 71.06%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 27 Summary:

=====

Time: 159.58s (Avg member: 31.92s)

Population Mean Accuracy: 71.99%

Best Member Accuracy: 74.69%

Mean Batch Size: 256

Mean Learning Rate: 5.65e-04

Mean Weight Decay: 0.078

=====

Epoch 28/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.595388412475586 seconds

LR changed during epoch: 5.04e-04 -> 4.90e-04

total runtime to train this model was 26.99118208885193 seconds

Hyperparameteres for model 0 at epoch 28

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.59840726852417 seconds

Loss: 0.7889

Train Accuracy: 72.16%

Test Accuracy: 71.91%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7459981441497803 seconds

LR changed during epoch: 6.03e-04 -> 5.86e-04

total runtime to train this model was 26.72014093399048 seconds

Hyperparameteres for model 1 at epoch 28

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.336329221725464 seconds

Loss: 0.7348

Train Accuracy: 73.81%

Test Accuracy: 72.86%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5910820960998535 seconds

LR changed during epoch: 1.88e-04 -> 2.82e-04

total runtime to train this model was 26.882269144058228 seconds

Hyperparameteres for model 2 at epoch 28

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.506495475769043 seconds

Loss: 0.6710

Train Accuracy: 76.28%

Test Accuracy: 74.45%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5894029140472412 seconds

LR changed during epoch: 4.34e-04 -> 4.21e-04

total runtime to train this model was 26.901201963424683 seconds

Hyperparameteres for model 3 at epoch 28

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.452887535095215 seconds

Loss: 0.7418

Train Accuracy: 73.65%

Test Accuracy: 70.72%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5827116966247559 seconds

LR changed during epoch: 2.09e-04 -> 2.03e-04

total runtime to train this model was 26.78516459465027 seconds

Hyperparameteres for model 4 at epoch 28

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1065452098846436 seconds

Loss: 0.7395

Train Accuracy: 73.59%

Test Accuracy: 71.88%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 28 Summary:  
=====

Time: 157.67s (Avg member: 31.53s)

Population Mean Accuracy: 72.36%

Best Member Accuracy: 74.45%

Mean Batch Size: 256

Mean Learning Rate: 5.65e-04

Mean Weight Decay: 0.078

=====  
Epoch 29/70  
=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.742720365524292 seconds

LR changed during epoch: 4.90e-04 -> 4.75e-04

total runtime to train this model was 26.83327603340149 seconds

Hyperparameteres for model 0 at epoch 29

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8240158557891846 seconds

Loss: 0.7741

Train Accuracy: 72.58%

Test Accuracy: 71.45%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.592947006225586 seconds

LR changed during epoch: 5.86e-04 -> 5.68e-04

total runtime to train this model was 26.964300394058228 seconds

Hyperparameteres for model 1 at epoch 29

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.425412893295288 seconds

Loss: 0.7204

Train Accuracy: 74.46%

Test Accuracy: 72.56%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5827603340148926 seconds

LR changed during epoch: 2.82e-04 -> 3.76e-04

total runtime to train this model was 26.67005705833435 seconds

Hyperparameteres for model 2 at epoch 29

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4742512702941895 seconds

Loss: 0.6732

Train Accuracy: 76.15%

Test Accuracy: 73.86%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6022205352783203 seconds

LR changed during epoch: 4.21e-04 -> 4.08e-04

total runtime to train this model was 26.9399197101593 seconds

Hyperparameteres for model 3 at epoch 29

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.499238967895508 seconds

Loss: 0.7310

Train Accuracy: 74.16%

Test Accuracy: 72.45%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6532838344573975 seconds

LR changed during epoch: 2.03e-04 -> 1.96e-04  
total runtime to train this model was 26.89417266845703 seconds  
Hyperparameteres for model 4 at epoch 29  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5003764629364014 seconds

Loss: 0.7271  
Train Accuracy: 74.27%  
Test Accuracy: 71.56%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 29 Summary:

=====

Time: 157.46s (Avg member: 31.49s)  
Population Mean Accuracy: 72.38%  
Best Member Accuracy: 73.86%  
Mean Batch Size: 256  
Mean Learning Rate: 5.65e-04  
Mean Weight Decay: 0.078

=====

Epoch 30/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6282875537872314 seconds  
LR changed during epoch: 4.75e-04 -> 4.60e-04  
total runtime to train this model was 26.991806745529175 seconds  
Hyperparameteres for model 0 at epoch 30  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4942638874053955 seconds

Loss: 0.7546  
Train Accuracy: 73.42%  
Test Accuracy: 72.43%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6104779243469238 seconds  
LR changed during epoch: 5.68e-04 -> 5.50e-04  
total runtime to train this model was 27.22235345840454 seconds

Hyperparameteres for model 1 at epoch 30

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.457191228866577 seconds

Loss: 0.7037

Train Accuracy: 75.04%

Test Accuracy: 74.41%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.8469700813293457 seconds

LR changed during epoch: 3.76e-04 -> 4.70e-04

total runtime to train this model was 26.73424983024597 seconds

Hyperparameteres for model 2 at epoch 30

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.2825863361358643 seconds

Loss: 0.6917

Train Accuracy: 75.47%

Test Accuracy: 73.99%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5966343879699707 seconds

LR changed during epoch: 4.08e-04 -> 3.95e-04

total runtime to train this model was 26.931654453277588 seconds

Hyperparameteres for model 3 at epoch 30

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.450963020324707 seconds

Loss: 0.7041

Train Accuracy: 74.69%

Test Accuracy: 73.02%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.618382215499878 seconds

LR changed during epoch: 1.96e-04 -> 1.90e-04

total runtime to train this model was 26.826387405395508 seconds

Hyperparameteres for model 4 at epoch 30

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.008655183396399702

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.402191400527954 seconds

Loss: 0.7115

Train Accuracy: 74.69%

Test Accuracy: 71.95%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 30) ---

==== PBT Exploit & Explore ===

Top performers: [74.41]

Bottom performers: [71.95]

Member 4: lr changed from 0.0002804193304595399 to 0.0004058603111642117

Member 4: weight\_decay changed from 0.03654601866836071 to 0.04977525351286773

Member 4: drop\_path changed from 0.008655183396399702 to 0.027005502982638718

Member 4 copied from 1

LR=4.06e-04, WD=0.050, DropPath=0.027, Warmup=5 epochs, Batch=256

=====

Epoch 30 Summary:

=====

Time: 157.37s (Avg member: 31.47s)

Population Mean Accuracy: 73.16%

Best Member Accuracy: 74.41%

Mean Batch Size: 256

Mean Learning Rate: 5.90e-04

Mean Weight Decay: 0.080

=====

Epoch 31/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6061315536499023 seconds

LR changed during epoch: 4.60e-04 -> 4.44e-04

total runtime to train this model was 26.520527839660645 seconds

Hyperparameteres for model 0 at epoch 31

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.979797124862671 seconds

Loss: 0.7377

Train Accuracy: 73.90%

Test Accuracy: 71.80%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.8234951496124268 seconds

LR changed during epoch: 5.50e-04 -> 5.32e-04

total runtime to train this model was 28.158165216445923 seconds

Hyperparameteres for model 1 at epoch 31

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4598448276519775 seconds

Loss: 0.6832

Train Accuracy: 75.82%

Test Accuracy: 74.50%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6313986778259277 seconds

LR changed during epoch: 4.70e-04 -> 4.70e-04

total runtime to train this model was 27.673150300979614 seconds

Hyperparameteres for model 2 at epoch 31

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5112946033477783 seconds

Loss: 0.7004

Train Accuracy: 75.01%

Test Accuracy: 73.68%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6132049560546875 seconds

LR changed during epoch: 3.95e-04 -> 3.82e-04

total runtime to train this model was 26.943138599395752 seconds

Hyperparameteres for model 3 at epoch 31

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.387873649597168 seconds

Loss: 0.6849

Train Accuracy: 75.53%

Test Accuracy: 73.36%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7323532104492188 seconds

LR changed during epoch: 4.14e-07 -> 8.16e-05

total runtime to train this model was 26.776688814163208 seconds

Hyperparameteres for model 4 at epoch 31

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.2761831283569336 seconds

Loss: 0.5951

Train Accuracy: 78.76%

Test Accuracy: 76.26%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 31 Summary:

=====

Time: 159.36s (Avg member: 31.87s)

Population Mean Accuracy: 73.92%

Best Member Accuracy: 76.26%

Mean Batch Size: 256

Mean Learning Rate: 5.90e-04

Mean Weight Decay: 0.080

=====

Epoch 32/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6072945594787598 seconds

LR changed during epoch: 4.44e-04 -> 4.28e-04

total runtime to train this model was 27.37604308128357 seconds

Hyperparameteres for model 0 at epoch 32

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.49151873588562 seconds

Loss: 0.7278

Train Accuracy: 74.41%

Test Accuracy: 72.76%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6523857116699219 seconds

LR changed during epoch: 5.32e-04 -> 5.13e-04

total runtime to train this model was 27.979126453399658 seconds

Hyperparameteres for model 1 at epoch 32

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.568474292755127 seconds

Loss: 0.6645

Train Accuracy: 76.32%

Test Accuracy: 75.14%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.8227312564849854 seconds

LR changed during epoch: 4.70e-04 -> 4.69e-04

total runtime to train this model was 27.245683431625366 seconds

Hyperparameteres for model 2 at epoch 32

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.595501661300659 seconds

Loss: 0.6822

Train Accuracy: 75.73%

Test Accuracy: 74.00%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

```
--- Training Member 3 (Batch size: 256) ---
built data in 1.663475513458252 seconds
LR changed during epoch: 3.82e-04 -> 3.69e-04
total runtime to train this model was 27.430500507354736 seconds
Hyperparameteres for model 3 at epoch 32
lr: 0.0005832876162076942

weight_decay: 0.06881561531524874

drop_path: 0.03329510856734546

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.5875980854034424 seconds
Loss: 0.6710
Train Accuracy: 76.15%
Test Accuracy: 73.90%
Google Drive already mounted.
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_3_seed_217401.pt

--- Training Member 4 (Batch size: 256) ---
built data in 1.5988359451293945 seconds
LR changed during epoch: 8.16e-05 -> 1.63e-04
total runtime to train this model was 27.481127977371216 seconds
Hyperparameteres for model 4 at epoch 32
lr: 0.0004058603111642117

weight_decay: 0.04977525351286773

drop_path: 0.027005502982638718

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.4914629459381104 seconds
Loss: 0.5587
Train Accuracy: 80.20%
Test Accuracy: 76.10%
Google Drive already mounted.
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_4_seed_217401.pt

=====
Epoch 32 Summary:
=====
Time: 160.82s (Avg member: 32.16s)
Population Mean Accuracy: 74.38%
Best Member Accuracy: 76.10%
Mean Batch Size: 256
Mean Learning Rate: 5.90e-04
Mean Weight Decay: 0.080

=====
Epoch 33/70
=====

--- Training Member 0 (Batch size: 256) ---
```

built data in 1.6573231220245361 seconds  
LR changed during epoch: 4.28e-04 -> 4.13e-04  
total runtime to train this model was 27.833229303359985 seconds  
Hyperparameteres for model 0 at epoch 33  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.7325174808502197 seconds

Loss: 0.7074  
Train Accuracy: 75.03%  
Test Accuracy: 73.59%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6659319400787354 seconds  
LR changed during epoch: 5.13e-04 -> 4.94e-04  
total runtime to train this model was 27.427855253219604 seconds  
Hyperparameteres for model 1 at epoch 33  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.535102367401123 seconds

Loss: 0.6441  
Train Accuracy: 77.17%  
Test Accuracy: 74.97%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6161127090454102 seconds  
LR changed during epoch: 4.69e-04 -> 4.67e-04  
total runtime to train this model was 27.920109748840332 seconds  
Hyperparameteres for model 2 at epoch 33  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.482618570327759 seconds

Loss: 0.6725  
Train Accuracy: 76.05%  
Test Accuracy: 73.84%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.689178228378296 seconds  
LR changed during epoch: 3.69e-04 -> 3.55e-04  
total runtime to train this model was 27.733620643615723 seconds  
Hyperparameters for model 3 at epoch 33  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.727874755859375 seconds  
Loss: 0.6523  
Train Accuracy: 77.07%  
Test Accuracy: 74.63%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6200973987579346 seconds  
LR changed during epoch: 1.63e-04 -> 2.44e-04  
total runtime to train this model was 27.732978582382202 seconds  
Hyperparameters for model 4 at epoch 33  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773  
drop\_path: 0.027005502982638718  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5293357372283936 seconds  
Loss: 0.5562  
Train Accuracy: 80.39%  
Test Accuracy: 76.62%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 33 Summary:  
=====

Time: 163.10s (Avg member: 32.62s)  
Population Mean Accuracy: 74.73%  
Best Member Accuracy: 76.62%  
Mean Batch Size: 256  
Mean Learning Rate: 5.90e-04  
Mean Weight Decay: 0.080

```
=====
Epoch 34/70
=====
```

--- Training Member 0 (Batch size: 256) ---  
built data in 1.645763635635376 seconds  
LR changed during epoch: 4.13e-04 -> 3.97e-04  
total runtime to train this model was 27.594489097595215 seconds  
Hyperparameteres for model 0 at epoch 34  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.572075843811035 seconds

Loss: 0.6920  
Train Accuracy: 75.39%  
Test Accuracy: 73.48%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.649820327758789 seconds  
LR changed during epoch: 4.94e-04 -> 4.75e-04  
total runtime to train this model was 27.19060444831848 seconds  
Hyperparameteres for model 1 at epoch 34  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.7764358520507812 seconds

Loss: 0.6292  
Train Accuracy: 77.57%  
Test Accuracy: 75.73%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.659134864807129 seconds  
LR changed during epoch: 4.67e-04 -> 4.65e-04  
total runtime to train this model was 27.16121196746826 seconds  
Hyperparameteres for model 2 at epoch 34  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4549238681793213 seconds

Loss: 0.6583

Train Accuracy: 76.73%

Test Accuracy: 74.56%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5954735279083252 seconds

LR changed during epoch: 3.55e-04 -> 3.41e-04

total runtime to train this model was 27.524726152420044 seconds

Hyperparameteres for model 3 at epoch 34

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4220378398895264 seconds

Loss: 0.6268

Train Accuracy: 77.71%

Test Accuracy: 73.69%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6389257907867432 seconds

LR changed during epoch: 2.44e-04 -> 3.25e-04

total runtime to train this model was 26.92386531829834 seconds

Hyperparameteres for model 4 at epoch 34

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.893977403640747 seconds

Loss: 0.5569

Train Accuracy: 80.23%

Test Accuracy: 75.88%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 34 Summary:

=====

Time: 159.97s (Avg member: 31.99s)

Population Mean Accuracy: 74.67%

Best Member Accuracy: 75.88%

Mean Batch Size: 256

Mean Learning Rate: 5.90e-04

Mean Weight Decay: 0.080

=====

Epoch 35/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.7877168655395508 seconds

LR changed during epoch: 3.97e-04 -> 3.80e-04

total runtime to train this model was 26.683876991271973 seconds

Hyperparameteres for model 0 at epoch 35

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.10322556685431711

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.9254188537597656 seconds

Loss: 0.6757

Train Accuracy: 76.19%

Test Accuracy: 73.45%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6450557708740234 seconds

LR changed during epoch: 4.75e-04 -> 4.55e-04

total runtime to train this model was 27.16965103149414 seconds

Hyperparameteres for model 1 at epoch 35

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.469341993331909 seconds

Loss: 0.6123

Train Accuracy: 78.32%

Test Accuracy: 75.12%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.605590581893921 seconds

LR changed during epoch: 4.65e-04 -> 4.63e-04

total runtime to train this model was 26.957106590270996 seconds

Hyperparameteres for model 2 at epoch 35

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4720845222473145 seconds

Loss: 0.6508

Train Accuracy: 77.30%

Test Accuracy: 75.07%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.7357816696166992 seconds

LR changed during epoch: 3.41e-04 -> 3.27e-04

total runtime to train this model was 26.745667934417725 seconds

Hyperparameteres for model 3 at epoch 35

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.8588032722473145 seconds

Loss: 0.6096

Train Accuracy: 78.19%

Test Accuracy: 74.03%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5980539321899414 seconds

LR changed during epoch: 3.25e-04 -> 4.06e-04

total runtime to train this model was 27.19073987007141 seconds

Hyperparameteres for model 4 at epoch 35

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.476233959197998 seconds

Loss: 0.5653

Train Accuracy: 79.69%

Test Accuracy: 75.08%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 35) ---

==== PBT Exploit & Explore ====

Top performers: [75.12]

Bottom performers: [73.45]

Member 0: lr changed from 0.0006782416715044019 to 0.0007764718898669612

Member 0: weight\_decay changed from 0.14890877193751148 to 0.15

Member 0: drop\_path changed from 0.10322556685431711 to 0.0693948401275121

Member 0 copied from 1

LR=7.76e-04, WD=0.150, DropPath=0.069, Warmup=5 epochs, Batch=256

=====

Epoch 35 Summary:

=====

Time: 158.51s (Avg member: 31.70s)

Population Mean Accuracy: 74.55%

Best Member Accuracy: 75.12%

Mean Batch Size: 256

Mean Learning Rate: 6.09e-04

Mean Weight Decay: 0.080

=====

Epoch 36/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.656679391860962 seconds

LR changed during epoch: 7.92e-07 -> 1.56e-04

total runtime to train this model was 27.201841831207275 seconds

Hyperparameteres for model 0 at epoch 36

lr: 0.0007764718898669612

weight\_decay: 0.15

drop\_path: 0.0693948401275121

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.487744092941284 seconds

Loss: 0.5176

Train Accuracy: 81.64%

Test Accuracy: 77.42%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.606769323348999 seconds

LR changed during epoch: 4.55e-04 -> 4.36e-04

total runtime to train this model was 26.943486213684082 seconds

Hyperparameteres for model 1 at epoch 36

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.741011381149292 seconds

Loss: 0.5956

Train Accuracy: 78.83%

Test Accuracy: 77.07%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.8542003631591797 seconds

LR changed during epoch: 4.63e-04 -> 4.60e-04

total runtime to train this model was 27.061458587646484 seconds

Hyperparameteres for model 2 at epoch 36

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.154064178466797 seconds

Loss: 0.6382

Train Accuracy: 77.35%

Test Accuracy: 74.99%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5828273296356201 seconds

LR changed during epoch: 3.27e-04 -> 3.13e-04

total runtime to train this model was 27.276391744613647 seconds

Hyperparameteres for model 3 at epoch 36

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4845244884490967 seconds

Loss: 0.5944

Train Accuracy: 78.92%

Test Accuracy: 75.40%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6352875232696533 seconds

LR changed during epoch: 4.06e-04 -> 4.06e-04

total runtime to train this model was 27.217371940612793 seconds

Hyperparameteres for model 4 at epoch 36

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.439028024673462 seconds

Loss: 0.5675

Train Accuracy: 79.71%

Test Accuracy: 74.86%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 36 Summary:  
=====

Time: 158.60s (Avg member: 31.72s)

Population Mean Accuracy: 75.95%

Best Member Accuracy: 77.42%

Mean Batch Size: 256

Mean Learning Rate: 6.09e-04

Mean Weight Decay: 0.080

=====  
Epoch 37/70  
=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6804635524749756 seconds

LR changed during epoch: 1.56e-04 -> 3.11e-04

total runtime to train this model was 27.246028900146484 seconds

Hyperparameteres for model 0 at epoch 37

lr: 0.0007764718898669612

weight\_decay: 0.15

drop\_path: 0.0693948401275121

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4113032817840576 seconds

Loss: 0.5079

Train Accuracy: 82.04%

Test Accuracy: 77.21%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6105127334594727 seconds

LR changed during epoch: 4.36e-04 -> 4.16e-04

total runtime to train this model was 27.208756685256958 seconds

Hyperparameteres for model 1 at epoch 37

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.531592607498169 seconds

Loss: 0.5705

Train Accuracy: 79.65%

Test Accuracy: 76.48%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5809051990509033 seconds

LR changed during epoch: 4.60e-04 -> 4.57e-04

total runtime to train this model was 27.58814311027527 seconds

Hyperparameteres for model 2 at epoch 37

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5215227603912354 seconds

Loss: 0.6210

Train Accuracy: 78.11%

Test Accuracy: 75.53%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6151378154754639 seconds

LR changed during epoch: 3.13e-04 -> 2.99e-04

total runtime to train this model was 27.435739517211914 seconds

Hyperparameteres for model 3 at epoch 37

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1880905628204346 seconds

Loss: 0.5751

Train Accuracy: 79.43%

Test Accuracy: 74.52%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7154712677001953 seconds

LR changed during epoch: 4.06e-04 -> 4.05e-04  
total runtime to train this model was 27.195378303527832 seconds  
Hyperparameteres for model 4 at epoch 37  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5620694160461426 seconds

Loss: 0.5564  
Train Accuracy: 80.12%  
Test Accuracy: 75.44%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 37 Summary:

=====  
Time: 160.34s (Avg member: 32.07s)  
Population Mean Accuracy: 75.84%  
Best Member Accuracy: 77.21%  
Mean Batch Size: 256  
Mean Learning Rate: 6.09e-04  
Mean Weight Decay: 0.080

=====

Epoch 38/70

=====  
--- Training Member 0 (Batch size: 256) ---  
built data in 1.6335992813110352 seconds  
LR changed during epoch: 3.11e-04 -> 4.67e-04  
total runtime to train this model was 27.38429880142212 seconds  
Hyperparameteres for model 0 at epoch 38  
lr: 0.0007764718898669612

weight\_decay: 0.15

drop\_path: 0.0693948401275121

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4861068725585938 seconds

Loss: 0.5405  
Train Accuracy: 80.81%  
Test Accuracy: 75.83%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.5860693454742432 seconds

LR changed during epoch: 4.16e-04 -> 3.96e-04

total runtime to train this model was 27.228044033050537 seconds

Hyperparameteres for model 1 at epoch 38

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.7334046363830566 seconds

Loss: 0.5626

Train Accuracy: 80.18%

Test Accuracy: 76.63%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.7541873455047607 seconds

LR changed during epoch: 4.57e-04 -> 4.52e-04

total runtime to train this model was 26.558210372924805 seconds

Hyperparameteres for model 2 at epoch 38

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.3405771255493164 seconds

Loss: 0.6124

Train Accuracy: 78.22%

Test Accuracy: 75.44%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5839314460754395 seconds

LR changed during epoch: 2.99e-04 -> 2.85e-04

total runtime to train this model was 27.338284969329834 seconds

Hyperparameteres for model 3 at epoch 38

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.483092784881592 seconds

Loss: 0.5558

Train Accuracy: 80.29%

Test Accuracy: 75.60%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6204755306243896 seconds

LR changed during epoch: 4.05e-04 -> 4.04e-04

total runtime to train this model was 27.270164251327515 seconds

Hyperparameteres for model 4 at epoch 38

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5407700538635254 seconds

Loss: 0.5443

Train Accuracy: 80.81%

Test Accuracy: 75.27%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 38 Summary:

=====

Time: 158.77s (Avg member: 31.75s)

Population Mean Accuracy: 75.75%

Best Member Accuracy: 76.63%

Mean Batch Size: 256

Mean Learning Rate: 6.09e-04

Mean Weight Decay: 0.080

=====

Epoch 39/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.646244764328003 seconds

LR changed during epoch: 4.67e-04 -> 6.22e-04

total runtime to train this model was 27.23594856262207 seconds

Hyperparameteres for model 0 at epoch 39

lr: 0.0007764718898669612

weight\_decay: 0.15

drop\_path: 0.0693948401275121

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.7520203590393066 seconds

Loss: 0.5771

Train Accuracy: 79.39%

Test Accuracy: 74.87%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6371068954467773 seconds  
LR changed during epoch: 3.96e-04 -> 3.77e-04  
total runtime to train this model was 27.066648721694946 seconds  
Hyperparameteres for model 1 at epoch 39  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4553966522216797 seconds  
Loss: 0.5420  
Train Accuracy: 80.62%  
Test Accuracy: 77.41%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6137003898620605 seconds  
LR changed during epoch: 4.52e-04 -> 4.48e-04  
total runtime to train this model was 27.397364377975464 seconds  
Hyperparameteres for model 2 at epoch 39  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.484471321105957 seconds  
Loss: 0.5960  
Train Accuracy: 78.68%  
Test Accuracy: 75.57%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6588976383209229 seconds  
LR changed during epoch: 2.85e-04 -> 2.71e-04  
total runtime to train this model was 27.21453309059143 seconds  
Hyperparameteres for model 3 at epoch 39  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6093385219573975 seconds

Loss: 0.5482  
Train Accuracy: 80.64%  
Test Accuracy: 75.82%  
Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.827033519744873 seconds  
LR changed during epoch: 4.04e-04 -> 4.02e-04  
total runtime to train this model was 27.052210569381714 seconds  
Hyperparameteres for model 4 at epoch 39

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3007497787475586 seconds

Loss: 0.5229  
Train Accuracy: 81.24%  
Test Accuracy: 75.42%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 39 Summary:  
=====

Time: 160.27s (Avg member: 32.05s)  
Population Mean Accuracy: 75.82%  
Best Member Accuracy: 77.41%  
Mean Batch Size: 256  
Mean Learning Rate: 6.09e-04  
Mean Weight Decay: 0.080

=====  
Epoch 40/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6167032718658447 seconds  
LR changed during epoch: 6.22e-04 -> 7.76e-04  
total runtime to train this model was 27.351734161376953 seconds  
Hyperparameteres for model 0 at epoch 40  
lr: 0.0007764718898669612

weight\_decay: 0.15

drop\_path: 0.0693948401275121

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5311219692230225 seconds

Loss: 0.6208  
Train Accuracy: 77.96%  
Test Accuracy: 73.22%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.686762809753418 seconds  
LR changed during epoch: 3.77e-04 -> 3.57e-04  
total runtime to train this model was 27.369251251220703 seconds  
Hyperparameteres for model 1 at epoch 40  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017  
drop\_path: 0.1811380432809464  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4286048412323 seconds  
Loss: 0.5259  
Train Accuracy: 81.21%  
Test Accuracy: 77.21%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.707167625427246 seconds  
LR changed during epoch: 4.48e-04 -> 4.43e-04  
total runtime to train this model was 26.978705406188965 seconds  
Hyperparameteres for model 2 at epoch 40  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339  
drop\_path: 0.18032196419187985  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.912187099456787 seconds  
Loss: 0.5924  
Train Accuracy: 78.90%  
Test Accuracy: 76.45%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6081275939941406 seconds  
LR changed during epoch: 2.71e-04 -> 2.57e-04  
total runtime to train this model was 27.293663263320923 seconds  
Hyperparameteres for model 3 at epoch 40  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6029489040374756 seconds

Loss: 0.5197

Train Accuracy: 81.36%

Test Accuracy: 75.99%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6315040588378906 seconds

LR changed during epoch: 4.02e-04 -> 4.00e-04

total runtime to train this model was 27.165891885757446 seconds

Hyperparameteres for model 4 at epoch 40

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.433657169342041 seconds

Loss: 0.5139

Train Accuracy: 81.70%

Test Accuracy: 76.34%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 40) ---

==== PBT Exploit & Explore ====

Top performers: [77.21]

Bottom performers: [73.22]

Member 0: lr changed from 0.0007764718898669612 to 0.0009491849758535866

Member 0: weight\_decay changed from 0.15 to 0.1251263379559215

Member 0: drop\_path changed from 0.0693948401275121 to 0.04674424727362794

Member 0 copied from 1

LR=9.49e-04, WD=0.125, DropPath=0.047, Warmup=5 epochs, Batch=256

=====

Epoch 40 Summary:

=====

Time: 159.54s (Avg member: 31.91s)

Population Mean Accuracy: 75.84%

Best Member Accuracy: 77.21%

Mean Batch Size: 256

Mean Learning Rate: 6.44e-04

Mean Weight Decay: 0.075

=====

Epoch 41/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.5883591175079346 seconds  
LR changed during epoch: 9.69e-07 -> 1.91e-04  
total runtime to train this model was 27.207897901535034 seconds  
Hyperparameteres for model 0 at epoch 41  
lr: 0.0009491849758535866

weight\_decay: 0.1251263379559215

drop\_path: 0.04674424727362794

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0123672485351562 seconds

Loss: 0.4386  
Train Accuracy: 84.34%  
Test Accuracy: 77.87%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7728323936462402 seconds  
LR changed during epoch: 3.57e-04 -> 3.38e-04  
total runtime to train this model was 27.024970769882202 seconds  
Hyperparameteres for model 1 at epoch 41  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7395179271698 seconds

Loss: 0.5043  
Train Accuracy: 82.17%  
Test Accuracy: 77.07%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6247093677520752 seconds  
LR changed during epoch: 4.43e-04 -> 4.37e-04  
total runtime to train this model was 26.86979365348816 seconds  
Hyperparameteres for model 2 at epoch 41  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4164812564849854 seconds

Loss: 0.5751  
Train Accuracy: 79.58%  
Test Accuracy: 75.79%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5963480472564697 seconds  
LR changed during epoch: 2.57e-04 -> 2.43e-04  
total runtime to train this model was 26.41228675842285 seconds  
Hyperparameteres for model 3 at epoch 41  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4254534244537354 seconds  
Loss: 0.5105  
Train Accuracy: 81.93%  
Test Accuracy: 76.32%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5575809478759766 seconds  
LR changed during epoch: 4.00e-04 -> 3.97e-04  
total runtime to train this model was 26.54916524887085 seconds  
Hyperparameteres for model 4 at epoch 41  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773  
drop\_path: 0.027005502982638718  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7428462505340576 seconds  
Loss: 0.4969  
Train Accuracy: 82.15%  
Test Accuracy: 75.95%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 41 Summary:  
=====

Time: 156.83s (Avg member: 31.37s)  
Population Mean Accuracy: 76.60%  
Best Member Accuracy: 77.87%  
Mean Batch Size: 256  
Mean Learning Rate: 6.44e-04  
Mean Weight Decay: 0.075

```
=====
Epoch 42/70
=====
```

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.7870886325836182 seconds
LR changed during epoch: 1.91e-04 -> 3.81e-04
total runtime to train this model was 26.247016191482544 seconds
Hyperparameteres for model 0 at epoch 42
lr: 0.0009491849758535866
```

```
weight_decay: 0.1251263379559215
```

```
drop_path: 0.04674424727362794
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 3.1487550735473633 seconds
```

```
Loss: 0.4519
Train Accuracy: 83.83%
Test Accuracy: 77.45%
```

```
Google Drive already mounted.
```

```
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_217401.pt
```

```
--- Training Member 1 (Batch size: 256) ---
```

```
built data in 1.5973527431488037 seconds
LR changed during epoch: 3.38e-04 -> 3.19e-04
total runtime to train this model was 26.908952713012695 seconds
Hyperparameteres for model 1 at epoch 42
lr: 0.000811751662685378
```

```
weight_decay: 0.03687161935761017
```

```
drop_path: 0.1811380432809464
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.399388074874878 seconds
```

```
Loss: 0.4899
Train Accuracy: 82.52%
Test Accuracy: 77.62%
```

```
Google Drive already mounted.
```

```
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_1_seed_217401.pt
```

```
--- Training Member 2 (Batch size: 256) ---
```

```
built data in 1.5874147415161133 seconds
LR changed during epoch: 4.37e-04 -> 4.31e-04
total runtime to train this model was 26.60100793838501 seconds
Hyperparameteres for model 2 at epoch 42
lr: 0.00046980901401525734
```

```
weight_decay: 0.09667856860397339
```

```
drop_path: 0.18032196419187985
```

```
warmup_epochs: 5
```

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5101943016052246 seconds

Loss: 0.5664

Train Accuracy: 79.79%

Test Accuracy: 76.98%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5525760650634766 seconds

LR changed during epoch: 2.43e-04 -> 2.29e-04

total runtime to train this model was 26.61304998397827 seconds

Hyperparameteres for model 3 at epoch 42

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8768253326416016 seconds

Loss: 0.4873

Train Accuracy: 82.57%

Test Accuracy: 76.79%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7441468238830566 seconds

LR changed during epoch: 3.97e-04 -> 3.94e-04

total runtime to train this model was 26.43885636329651 seconds

Hyperparameteres for model 4 at epoch 42

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.117290496826172 seconds

Loss: 0.4898

Train Accuracy: 82.37%

Test Accuracy: 76.77%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 42 Summary:

=====

Time: 156.35s (Avg member: 31.27s)

Population Mean Accuracy: 77.12%

Best Member Accuracy: 77.62%

Mean Batch Size: 256

Mean Learning Rate: 6.44e-04

Mean Weight Decay: 0.075

=====

Epoch 43/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.5998568534851074 seconds

LR changed during epoch: 3.81e-04 -> 5.70e-04

total runtime to train this model was 27.575770139694214 seconds

Hyperparameteres for model 0 at epoch 43

lr: 0.0009491849758535866

weight\_decay: 0.1251263379559215

drop\_path: 0.04674424727362794

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4392764568328857 seconds

Loss: 0.5055

Train Accuracy: 81.96%

Test Accuracy: 75.92%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6112282276153564 seconds

LR changed during epoch: 3.19e-04 -> 3.00e-04

total runtime to train this model was 26.835798263549805 seconds

Hyperparameteres for model 1 at epoch 43

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.410588026046753 seconds

Loss: 0.4718

Train Accuracy: 83.19%

Test Accuracy: 77.67%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5927317142486572 seconds

LR changed during epoch: 4.31e-04 -> 4.25e-04

total runtime to train this model was 27.09941816329956 seconds

Hyperparameteres for model 2 at epoch 43

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1141693592071533 seconds

Loss: 0.5483

Train Accuracy: 80.47%

Test Accuracy: 76.14%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.7101478576660156 seconds

LR changed during epoch: 2.29e-04 -> 2.16e-04

total runtime to train this model was 27.00327706336975 seconds

Hyperparameteres for model 3 at epoch 43

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4786694049835205 seconds

Loss: 0.4699

Train Accuracy: 83.23%

Test Accuracy: 76.86%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.571500539779663 seconds

LR changed during epoch: 3.94e-04 -> 3.91e-04

total runtime to train this model was 27.191307306289673 seconds

Hyperparameteres for model 4 at epoch 43

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5089099407196045 seconds

Loss: 0.4747

Train Accuracy: 82.99%

Test Accuracy: 76.27%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

```
=====
Epoch 43 Summary:
=====
```

Time: 157.97s (Avg member: 31.59s)  
Population Mean Accuracy: 76.57%  
Best Member Accuracy: 77.67%  
Mean Batch Size: 256  
Mean Learning Rate: 6.44e-04  
Mean Weight Decay: 0.075

```
=====
Epoch 44/70
=====
```

--- Training Member 0 (Batch size: 256) ---

built data in 1.6607143878936768 seconds  
LR changed during epoch: 5.70e-04 -> 7.60e-04  
total runtime to train this model was 27.146894454956055 seconds  
Hyperparameteres for model 0 at epoch 44  
lr: 0.0009491849758535866

weight\_decay: 0.1251263379559215

drop\_path: 0.04674424727362794

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5624501705169678 seconds

Loss: 0.5533  
Train Accuracy: 80.36%  
Test Accuracy: 73.52%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7664275169372559 seconds  
LR changed during epoch: 3.00e-04 -> 2.81e-04  
total runtime to train this model was 27.612103939056396 seconds  
Hyperparameteres for model 1 at epoch 44  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2938828468322754 seconds

Loss: 0.4524  
Train Accuracy: 83.79%  
Test Accuracy: 78.13%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6363394260406494 seconds

LR changed during epoch: 4.25e-04 -> 4.18e-04  
total runtime to train this model was 27.430182933807373 seconds  
Hyperparameteres for model 2 at epoch 44  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.411712884902954 seconds

Loss: 0.5429  
Train Accuracy: 80.72%  
Test Accuracy: 76.53%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5998456478118896 seconds

LR changed during epoch: 2.16e-04 -> 2.02e-04  
total runtime to train this model was 27.233795881271362 seconds  
Hyperparameteres for model 3 at epoch 44  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.457197666168213 seconds

Loss: 0.4552  
Train Accuracy: 83.76%  
Test Accuracy: 77.13%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7075307369232178 seconds

LR changed during epoch: 3.91e-04 -> 3.87e-04  
total runtime to train this model was 26.640259265899658 seconds  
Hyperparameteres for model 4 at epoch 44  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.8341832160949707 seconds  
Loss: 0.4565

Train Accuracy: 83.74%  
Test Accuracy: 76.33%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 44 Summary:  
=====

Time: 160.24s (Avg member: 32.05s)  
Population Mean Accuracy: 76.33%  
Best Member Accuracy: 78.13%  
Mean Batch Size: 256  
Mean Learning Rate: 6.44e-04  
Mean Weight Decay: 0.075

=====  
Epoch 45/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5832312107086182 seconds  
LR changed during epoch: 7.60e-04 -> 9.49e-04  
total runtime to train this model was 26.729231357574463 seconds  
Hyperparameteres for model 0 at epoch 45  
lr: 0.0009491849758535866

weight\_decay: 0.1251263379559215

drop\_path: 0.04674424727362794

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.455991268157959 seconds

Loss: 0.6086  
Train Accuracy: 78.33%  
Test Accuracy: 74.66%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6210761070251465 seconds  
LR changed during epoch: 2.81e-04 -> 2.63e-04  
total runtime to train this model was 27.068116903305054 seconds  
Hyperparameteres for model 1 at epoch 45  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.492227077484131 seconds  
Loss: 0.4394  
Train Accuracy: 84.31%  
Test Accuracy: 78.19%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.631998062133789 seconds

LR changed during epoch: 4.18e-04 -> 4.11e-04

total runtime to train this model was 27.46005868911743 seconds

Hyperparameteres for model 2 at epoch 45

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.8060190677642822 seconds

Loss: 0.5325

Train Accuracy: 81.01%

Test Accuracy: 76.78%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.8072772026062012 seconds

LR changed during epoch: 2.02e-04 -> 1.89e-04

total runtime to train this model was 27.253987550735474 seconds

Hyperparameteres for model 3 at epoch 45

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.8927881717681885 seconds

Loss: 0.4353

Train Accuracy: 84.43%

Test Accuracy: 76.42%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6108534336090088 seconds

LR changed during epoch: 3.87e-04 -> 3.83e-04

total runtime to train this model was 27.527302980422974 seconds

Hyperparameteres for model 4 at epoch 45

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4698891639709473 seconds

Loss: 0.4404

Train Accuracy: 84.27%

Test Accuracy: 76.37%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 45) ---

==== PBT Exploit & Explore ===

Top performers: [78.19]

Bottom performers: [74.66]

Member 0: lr changed from 0.0009491849758535866 to 0.0008236220515686955

Member 0: weight\_decay changed from 0.1251263379559215 to 0.14376323050752654

Member 0: drop\_path changed from 0.04674424727362794 to 0.03566181033783931

Member 0 copied from 1

LR=8.24e-04, WD=0.144, DropPath=0.036, Warmup=5 epochs, Batch=256

=====

Epoch 45 Summary:

=====

Time: 158.72s (Avg member: 31.74s)

Population Mean Accuracy: 76.48%

Best Member Accuracy: 78.19%

Mean Batch Size: 256

Mean Learning Rate: 6.19e-04

Mean Weight Decay: 0.079

=====

Epoch 46/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.600677728652954 seconds

LR changed during epoch: 8.40e-07 -> 1.66e-04

total runtime to train this model was 26.82002019882202 seconds

Hyperparameteres for model 0 at epoch 46

lr: 0.0008236220515686955

weight\_decay: 0.14376323050752654

drop\_path: 0.03566181033783931

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5064117908477783 seconds

Loss: 0.3647

Train Accuracy: 87.14%

Test Accuracy: 78.76%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6771371364593506 seconds

LR changed during epoch: 2.63e-04 -> 2.44e-04

total runtime to train this model was 26.875413417816162 seconds

Hyperparameteres for model 1 at epoch 46

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 4.015235424041748 seconds

Loss: 0.4215

Train Accuracy: 84.75%

Test Accuracy: 78.36%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5953280925750732 seconds

LR changed during epoch: 4.11e-04 -> 4.03e-04

total runtime to train this model was 27.260749101638794 seconds

Hyperparameteres for model 2 at epoch 46

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.8085665702819824 seconds

Loss: 0.5080

Train Accuracy: 81.91%

Test Accuracy: 77.04%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5793380737304688 seconds

LR changed during epoch: 1.89e-04 -> 1.76e-04

total runtime to train this model was 27.146435260772705 seconds

Hyperparameteres for model 3 at epoch 46

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.7733564376831055 seconds

Loss: 0.4123

Train Accuracy: 85.36%

Test Accuracy: 77.24%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6791925430297852 seconds

LR changed during epoch: 3.83e-04 -> 3.78e-04

total runtime to train this model was 27.529873609542847 seconds

Hyperparameteres for model 4 at epoch 46

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.920974016189575 seconds

Loss: 0.4257

Train Accuracy: 84.75%

Test Accuracy: 76.07%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 46 Summary:

=====

Time: 161.16s (Avg member: 32.23s)

Population Mean Accuracy: 77.49%

Best Member Accuracy: 78.76%

Mean Batch Size: 256

Mean Learning Rate: 6.19e-04

Mean Weight Decay: 0.079

=====

Epoch 47/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.5809612274169922 seconds

LR changed during epoch: 1.66e-04 -> 3.30e-04

total runtime to train this model was 27.38120126724243 seconds

Hyperparameteres for model 0 at epoch 47

lr: 0.0008236220515686955

weight\_decay: 0.14376323050752654

drop\_path: 0.03566181033783931

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.557929039001465 seconds

Loss: 0.3811

Train Accuracy: 86.43%

Test Accuracy: 77.46%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

```
--- Training Member 1 (Batch size: 256) ---
built data in 1.5984959602355957 seconds
LR changed during epoch: 2.44e-04 -> 2.27e-04
total runtime to train this model was 26.86367106437683 seconds
Hyperparameteres for model 1 at epoch 47
lr: 0.000811751662685378

weight_decay: 0.03687161935761017
drop_path: 0.1811380432809464
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.455965518951416 seconds
Loss: 0.4034
Train Accuracy: 85.62%
Test Accuracy: 78.71%
Google Drive already mounted.
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_1_seed_217401.pt

--- Training Member 2 (Batch size: 256) ---
built data in 1.5595519542694092 seconds
LR changed during epoch: 4.03e-04 -> 3.95e-04
total runtime to train this model was 27.1020724773407 seconds
Hyperparameteres for model 2 at epoch 47
lr: 0.00046980901401525734

weight_decay: 0.09667856860397339
drop_path: 0.18032196419187985
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.9612510204315186 seconds
Loss: 0.5016
Train Accuracy: 81.97%
Test Accuracy: 76.73%
Google Drive already mounted.
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_2_seed_217401.pt

--- Training Member 3 (Batch size: 256) ---
built data in 1.7347736358642578 seconds
LR changed during epoch: 1.76e-04 -> 1.63e-04
total runtime to train this model was 26.97678256034851 seconds
Hyperparameteres for model 3 at epoch 47
lr: 0.0005832876162076942

weight_decay: 0.06881561531524874
drop_path: 0.03329510856734546
warmup_epochs: 5
batch_size: 256
```

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6272387504577637 seconds

Loss: 0.3979  
Train Accuracy: 85.79%

Test Accuracy: 77.45%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5884087085723877 seconds

LR changed during epoch: 3.78e-04 -> 3.73e-04

total runtime to train this model was 27.617919206619263 seconds

Hyperparameteres for model 4 at epoch 47

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4344868659973145 seconds

Loss: 0.4161  
Train Accuracy: 85.04%

Test Accuracy: 76.95%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====  
Epoch 47 Summary:  
=====

Time: 158.32s (Avg member: 31.66s)

Population Mean Accuracy: 77.46%

Best Member Accuracy: 78.71%

Mean Batch Size: 256

Mean Learning Rate: 6.19e-04

Mean Weight Decay: 0.079

=====  
Epoch 48/70  
=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6131160259246826 seconds

LR changed during epoch: 3.30e-04 -> 4.95e-04

total runtime to train this model was 27.115147829055786 seconds

Hyperparameteres for model 0 at epoch 48

lr: 0.0008236220515686955

weight\_decay: 0.14376323050752654

drop\_path: 0.03566181033783931

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.438689947128296 seconds

Loss: 0.4320  
Train Accuracy: 84.57%  
Test Accuracy: 77.29%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.71437406539917 seconds  
LR changed during epoch: 2.27e-04 -> 2.09e-04  
total runtime to train this model was 27.170074939727783 seconds  
Hyperparameteres for model 1 at epoch 48  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017  
drop\_path: 0.1811380432809464  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3185794353485107 seconds  
Loss: 0.3831  
Train Accuracy: 86.45%  
Test Accuracy: 78.44%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6154940128326416 seconds  
LR changed during epoch: 3.95e-04 -> 3.87e-04  
total runtime to train this model was 27.07691717147827 seconds  
Hyperparameteres for model 2 at epoch 48  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339  
drop\_path: 0.18032196419187985  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.489406108856201 seconds  
Loss: 0.4872  
Train Accuracy: 82.75%  
Test Accuracy: 76.78%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6292109489440918 seconds  
LR changed during epoch: 1.63e-04 -> 1.51e-04  
total runtime to train this model was 27.114115953445435 seconds  
Hyperparameteres for model 3 at epoch 48  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4912116527557373 seconds

Loss: 0.3845

Train Accuracy: 86.19%

Test Accuracy: 76.77%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6346054077148438 seconds

LR changed during epoch: 3.73e-04 -> 3.67e-04

total runtime to train this model was 27.146989583969116 seconds

Hyperparameteres for model 4 at epoch 48

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3778486251831055 seconds

Loss: 0.3965

Train Accuracy: 85.86%

Test Accuracy: 76.39%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 48 Summary:

=====

Time: 159.18s (Avg member: 31.84s)

Population Mean Accuracy: 77.13%

Best Member Accuracy: 78.44%

Mean Batch Size: 256

Mean Learning Rate: 6.19e-04

Mean Weight Decay: 0.079

=====

Epoch 49/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6789734363555908 seconds

LR changed during epoch: 4.95e-04 -> 6.60e-04

total runtime to train this model was 27.43859553337097 seconds

Hyperparameteres for model 0 at epoch 49

lr: 0.0008236220515686955

weight\_decay: 0.14376323050752654

drop\_path: 0.03566181033783931

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4952573776245117 seconds

Loss: 0.4841

Train Accuracy: 82.68%

Test Accuracy: 75.46%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.632185459136963 seconds

LR changed during epoch: 2.09e-04 -> 1.92e-04

total runtime to train this model was 27.40803813934326 seconds

Hyperparameteres for model 1 at epoch 49

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5149097442626953 seconds

Loss: 0.3723

Train Accuracy: 86.78%

Test Accuracy: 78.59%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5875904560089111 seconds

LR changed during epoch: 3.87e-04 -> 3.78e-04

total runtime to train this model was 27.89241337776184 seconds

Hyperparameteres for model 2 at epoch 49

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.1383652687072754 seconds

Loss: 0.4783

Train Accuracy: 82.86%

Test Accuracy: 77.41%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.8085932731628418 seconds

LR changed during epoch: 1.51e-04 -> 1.38e-04

total runtime to train this model was 27.51996350288391 seconds

Hyperparameteres for model 3 at epoch 49

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5302116870880127 seconds

Loss: 0.3654

Train Accuracy: 87.03%

Test Accuracy: 77.50%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5710909366607666 seconds

LR changed during epoch: 3.67e-04 -> 3.61e-04

total runtime to train this model was 27.046756505966187 seconds

Hyperparameteres for model 4 at epoch 49

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5323984622955322 seconds

Loss: 0.3828

Train Accuracy: 86.28%

Test Accuracy: 76.16%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 49 Summary:

=====

Time: 160.06s (Avg member: 32.01s)

Population Mean Accuracy: 77.02%

Best Member Accuracy: 78.59%

Mean Batch Size: 256

Mean Learning Rate: 6.19e-04

Mean Weight Decay: 0.079

=====

Epoch 50/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6270411014556885 seconds

LR changed during epoch: 6.60e-04 -> 8.24e-04

total runtime to train this model was 27.38369131088257 seconds

Hyperparameteres for model 0 at epoch 50

lr: 0.0008236220515686955

weight\_decay: 0.14376323050752654

drop\_path: 0.03566181033783931

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5896518230438232 seconds

Loss: 0.5280

Train Accuracy: 81.16%

Test Accuracy: 74.74%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.8092188835144043 seconds

LR changed during epoch: 1.92e-04 -> 1.76e-04

total runtime to train this model was 28.733774423599243 seconds

Hyperparameteres for model 1 at epoch 50

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9614453315734863 seconds

Loss: 0.3559

Train Accuracy: 87.25%

Test Accuracy: 78.38%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6591527462005615 seconds

LR changed during epoch: 3.78e-04 -> 3.69e-04

total runtime to train this model was 28.0012686252594 seconds

Hyperparameteres for model 2 at epoch 50

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6053364276885986 seconds

Loss: 0.4682

Train Accuracy: 83.19%

Test Accuracy: 77.36%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt



Best Member Accuracy: 78.38%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.078

=====

Epoch 51/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.5959863662719727 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 27.533108711242676 seconds

Hyperparameteres for model 0 at epoch 51

lr: 0.00100000000000000002

weight\_decay: 0.1371285373278264

drop\_path: 0.020544764443548295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4400012493133545 seconds

Loss: 0.3013

Train Accuracy: 89.17%

Test Accuracy: 78.33%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6814606189727783 seconds

LR changed during epoch: 1.76e-04 -> 1.60e-04

total runtime to train this model was 27.448786735534668 seconds

Hyperparameteres for model 1 at epoch 51

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5013670921325684 seconds

Loss: 0.3437

Train Accuracy: 87.73%

Test Accuracy: 78.58%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6592919826507568 seconds

LR changed during epoch: 3.69e-04 -> 3.59e-04

total runtime to train this model was 26.919899702072144 seconds

Hyperparameteres for model 2 at epoch 51

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.8666086196899414 seconds

Loss: 0.4518

Train Accuracy: 83.61%

Test Accuracy: 77.35%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.638415813446045 seconds

LR changed during epoch: 1.27e-04 -> 1.15e-04

total runtime to train this model was 27.342639446258545 seconds

Hyperparameteres for model 3 at epoch 51

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.514878273010254 seconds

Loss: 0.3349

Train Accuracy: 87.95%

Test Accuracy: 77.55%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5771420001983643 seconds

LR changed during epoch: 3.55e-04 -> 3.48e-04

total runtime to train this model was 27.03151226043701 seconds

Hyperparameteres for model 4 at epoch 51

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4560999870300293 seconds

Loss: 0.3611

Train Accuracy: 87.15%

Test Accuracy: 76.43%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

```
=====
Epoch 51 Summary:
=====
```

Time: 159.44s (Avg member: 31.89s)  
Population Mean Accuracy: 77.65%  
Best Member Accuracy: 78.58%  
Mean Batch Size: 256  
Mean Learning Rate: 6.54e-04  
Mean Weight Decay: 0.078

```
=====
Epoch 52/70
=====
```

--- Training Member 0 (Batch size: 256) ---

built data in 1.601926565170288 seconds  
LR changed during epoch: 2.01e-04 -> 4.01e-04  
total runtime to train this model was 27.184990882873535 seconds  
Hyperparameteres for model 0 at epoch 52  
lr: 0.0010000000000000002

weight\_decay: 0.1371285373278264

drop\_path: 0.020544764443548295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.739562749862671 seconds

Loss: 0.3513  
Train Accuracy: 87.34%  
Test Accuracy: 77.45%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7318413257598877 seconds  
LR changed during epoch: 1.60e-04 -> 1.45e-04  
total runtime to train this model was 27.111318826675415 seconds  
Hyperparameteres for model 1 at epoch 52  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.105858087539673 seconds

Loss: 0.3267  
Train Accuracy: 88.37%  
Test Accuracy: 78.81%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6335690021514893 seconds

LR changed during epoch: 3.59e-04 -> 3.49e-04  
total runtime to train this model was 27.26439332962036 seconds  
Hyperparameteres for model 2 at epoch 52  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4546520709991455 seconds

Loss: 0.4354  
Train Accuracy: 84.46%  
Test Accuracy: 78.40%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5647907257080078 seconds  
LR changed during epoch: 1.15e-04 -> 1.04e-04  
total runtime to train this model was 27.338951349258423 seconds  
Hyperparameteres for model 3 at epoch 52  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.447582960128784 seconds

Loss: 0.3198  
Train Accuracy: 88.62%  
Test Accuracy: 77.78%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6529126167297363 seconds  
LR changed during epoch: 3.48e-04 -> 3.41e-04  
total runtime to train this model was 27.0837299823761 seconds  
Hyperparameteres for model 4 at epoch 52  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4726572036743164 seconds

Loss: 0.3450

Train Accuracy: 87.62%

Test Accuracy: 77.04%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 52 Summary:

=====

Time: 159.70s (Avg member: 31.94s)

Population Mean Accuracy: 77.90%

Best Member Accuracy: 78.81%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.078

=====

Epoch 53/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6290028095245361 seconds

LR changed during epoch: 4.01e-04 -> 6.01e-04

total runtime to train this model was 27.33075451850891 seconds

Hyperparameteres for model 0 at epoch 53

lr: 0.00100000000000000002

weight\_decay: 0.1371285373278264

drop\_path: 0.020544764443548295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4884212017059326 seconds

Loss: 0.4220

Train Accuracy: 84.77%

Test Accuracy: 77.12%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6218974590301514 seconds

LR changed during epoch: 1.45e-04 -> 1.30e-04

total runtime to train this model was 27.205893516540527 seconds

Hyperparameteres for model 1 at epoch 53

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.471869945526123 seconds

Loss: 0.3096

Train Accuracy: 88.95%

Test Accuracy: 78.77%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6437232494354248 seconds

LR changed during epoch: 3.49e-04 -> 3.39e-04

total runtime to train this model was 27.187283515930176 seconds

Hyperparameteres for model 2 at epoch 53

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.6409056186676025 seconds

Loss: 0.4269

Train Accuracy: 84.81%

Test Accuracy: 77.16%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.8188674449920654 seconds

LR changed during epoch: 1.04e-04 -> 9.38e-05

total runtime to train this model was 27.210131645202637 seconds

Hyperparameteres for model 3 at epoch 53

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.117887496948242 seconds

Loss: 0.3086

Train Accuracy: 88.94%

Test Accuracy: 77.83%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6165130138397217 seconds

LR changed during epoch: 3.41e-04 -> 3.34e-04

total runtime to train this model was 27.415743827819824 seconds

Hyperparameteres for model 4 at epoch 53

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4524338245391846 seconds

Loss: 0.3319  
Train Accuracy: 88.06%  
Test Accuracy: 76.81%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 53 Summary:

=====

Time: 159.16s (Avg member: 31.83s)  
Population Mean Accuracy: 77.54%  
Best Member Accuracy: 78.77%  
Mean Batch Size: 256  
Mean Learning Rate: 6.54e-04  
Mean Weight Decay: 0.078

=====

Epoch 54/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6039626598358154 seconds  
LR changed during epoch: 6.01e-04 -> 8.01e-04  
total runtime to train this model was 27.0730082988739 seconds  
Hyperparameteres for model 0 at epoch 54  
lr: 0.001000000000000002

weight\_decay: 0.1371285373278264

drop\_path: 0.020544764443548295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.576997756958008 seconds

Loss: 0.4931  
Train Accuracy: 82.44%  
Test Accuracy: 75.43%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6608507633209229 seconds  
LR changed during epoch: 1.30e-04 -> 1.16e-04  
total runtime to train this model was 27.084540605545044 seconds  
Hyperparameteres for model 1 at epoch 54  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.7275826930999756 seconds

Loss: 0.3004

Train Accuracy: 89.22%

Test Accuracy: 79.02%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6039936542510986 seconds

LR changed during epoch: 3.39e-04 -> 3.29e-04

total runtime to train this model was 26.93233561515808 seconds

Hyperparameteres for model 2 at epoch 54

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4501428604125977 seconds

Loss: 0.4130

Train Accuracy: 85.14%

Test Accuracy: 78.23%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5978643894195557 seconds

LR changed during epoch: 9.38e-05 -> 8.38e-05

total runtime to train this model was 27.168530702590942 seconds

Hyperparameteres for model 3 at epoch 54

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.454130172729492 seconds

Loss: 0.2913

Train Accuracy: 89.63%

Test Accuracy: 78.16%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6199486255645752 seconds

LR changed during epoch: 3.34e-04 -> 3.26e-04

total runtime to train this model was 27.223352432250977 seconds

Hyperparameteres for model 4 at epoch 54

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5949816703796387 seconds

Loss: 0.3109

Train Accuracy: 88.83%

Test Accuracy: 76.91%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 54 Summary:

=====

Time: 158.59s (Avg member: 31.72s)

Population Mean Accuracy: 77.55%

Best Member Accuracy: 79.02%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.078

=====

Epoch 55/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.9774830341339111 seconds

LR changed during epoch: 8.01e-04 -> 1.00e-03

total runtime to train this model was 26.82048773765564 seconds

Hyperparameteres for model 0 at epoch 55

lr: 0.0010000000000000002

weight\_decay: 0.1371285373278264

drop\_path: 0.020544764443548295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0239322185516357 seconds

Loss: 0.5520

Train Accuracy: 80.08%

Test Accuracy: 75.04%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.630293607711792 seconds

LR changed during epoch: 1.16e-04 -> 1.03e-04

total runtime to train this model was 27.118269443511963 seconds

Hyperparameteres for model 1 at epoch 55

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4897732734680176 seconds

Loss: 0.2929

Train Accuracy: 89.63%

Test Accuracy: 79.12%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6738522052764893 seconds

LR changed during epoch: 3.29e-04 -> 3.18e-04

total runtime to train this model was 27.135504245758057 seconds

Hyperparameteres for model 2 at epoch 55

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4805409908294678 seconds

Loss: 0.3996

Train Accuracy: 85.51%

Test Accuracy: 77.92%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6687042713165283 seconds

LR changed during epoch: 8.38e-05 -> 7.42e-05

total runtime to train this model was 26.911441802978516 seconds

Hyperparameteres for model 3 at epoch 55

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5258641242980957 seconds

Loss: 0.2829

Train Accuracy: 89.87%

Test Accuracy: 78.46%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5720913410186768 seconds

LR changed during epoch: 3.26e-04 -> 3.18e-04

total runtime to train this model was 27.517569541931152 seconds

Hyperparameteres for model 4 at epoch 55

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.499199628829956 seconds

Loss: 0.3000

Train Accuracy: 89.26%

Test Accuracy: 76.97%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 55) ---

==== PBT Exploit & Explore ====

Top performers: [79.12]

Bottom performers: [75.04]

Member 0: weight\_decay changed from 0.1371285373278264 to 0.15

Member 0: drop\_path changed from 0.020544764443548295 to 0.013838386051600385

Member 0 copied from 1

LR=1.00e-03, WD=0.150, DropPath=0.014, Warmup=5 epochs, Batch=256

=====

Epoch 55 Summary:

=====

Time: 159.32s (Avg member: 31.86s)

Population Mean Accuracy: 77.50%

Best Member Accuracy: 79.12%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 56/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6100513935089111 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 27.343130826950073 seconds

Hyperparameteres for model 0 at epoch 56

lr: 0.0010000000000000002

weight\_decay: 0.15

drop\_path: 0.013838386051600385

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.583671808242798 seconds

Loss: 0.2528

Train Accuracy: 91.08%  
Test Accuracy: 78.67%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5737214088439941 seconds  
LR changed during epoch: 1.03e-04 -> 9.03e-05  
total runtime to train this model was 27.396987676620483 seconds  
Hyperparameteres for model 1 at epoch 56  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017  
drop\_path: 0.1811380432809464  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0804781913757324 seconds  
Loss: 0.2845  
Train Accuracy: 89.88%  
Test Accuracy: 79.17%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7762131690979004 seconds  
LR changed during epoch: 3.18e-04 -> 3.08e-04  
total runtime to train this model was 26.88456153869629 seconds  
Hyperparameteres for model 2 at epoch 56  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339  
drop\_path: 0.18032196419187985  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.959728240966797 seconds  
Loss: 0.3943  
Train Accuracy: 85.97%  
Test Accuracy: 78.59%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6441729068756104 seconds  
LR changed during epoch: 7.42e-05 -> 6.51e-05  
total runtime to train this model was 27.51205062866211 seconds  
Hyperparameteres for model 3 at epoch 56  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5038444995880127 seconds

Loss: 0.2690

Train Accuracy: 90.45%

Test Accuracy: 77.71%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6020896434783936 seconds

LR changed during epoch: 3.18e-04 -> 3.10e-04

total runtime to train this model was 26.987300872802734 seconds

Hyperparameteres for model 4 at epoch 56

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4418678283691406 seconds

Loss: 0.2856

Train Accuracy: 89.71%

Test Accuracy: 77.45%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 56 Summary:

=====

Time: 159.16s (Avg member: 31.83s)

Population Mean Accuracy: 78.32%

Best Member Accuracy: 79.17%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 57/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.7787275314331055 seconds

LR changed during epoch: 2.01e-04 -> 4.01e-04

total runtime to train this model was 26.500290632247925 seconds

Hyperparameteres for model 0 at epoch 57

lr: 0.001000000000000002

weight\_decay: 0.15

drop\_path: 0.013838386051600385

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.53045654296875 seconds

Loss: 0.3239

Train Accuracy: 88.36%

Test Accuracy: 76.98%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6083338260650635 seconds

LR changed during epoch: 9.03e-05 -> 7.84e-05

total runtime to train this model was 26.940497875213623 seconds

Hyperparameteres for model 1 at epoch 57

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4810397624969482 seconds

Loss: 0.2666

Train Accuracy: 90.53%

Test Accuracy: 79.24%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5684328079223633 seconds

LR changed during epoch: 3.08e-04 -> 2.97e-04

total runtime to train this model was 27.04878568649292 seconds

Hyperparameteres for model 2 at epoch 57

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.456494092941284 seconds

Loss: 0.3736

Train Accuracy: 86.46%

Test Accuracy: 78.40%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.673051357269287 seconds

LR changed during epoch: 6.51e-05 -> 5.66e-05

total runtime to train this model was 26.82813262939453 seconds

Hyperparameteres for model 3 at epoch 57

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4569036960601807 seconds

Loss: 0.2575

Train Accuracy: 90.78%

Test Accuracy: 78.19%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7575185298919678 seconds

LR changed during epoch: 3.10e-04 -> 3.02e-04

total runtime to train this model was 27.41941237449646 seconds

Hyperparameteres for model 4 at epoch 57

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2131505012512207 seconds

Loss: 0.2746

Train Accuracy: 90.14%

Test Accuracy: 76.92%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 57 Summary:

=====

Time: 158.52s (Avg member: 31.70s)

Population Mean Accuracy: 77.95%

Best Member Accuracy: 79.24%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 58/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.666874885559082 seconds

LR changed during epoch: 4.01e-04 -> 6.01e-04

total runtime to train this model was 27.57940149307251 seconds

Hyperparameteres for model 0 at epoch 58

lr: 0.001000000000000002

weight\_decay: 0.15

drop\_path: 0.013838386051600385

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5186355113983154 seconds

Loss: 0.3990

Train Accuracy: 85.65%

Test Accuracy: 76.01%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.615279197692871 seconds

LR changed during epoch: 7.84e-05 -> 6.72e-05

total runtime to train this model was 27.596556186676025 seconds

Hyperparameteres for model 1 at epoch 58

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4819095134735107 seconds

Loss: 0.2599

Train Accuracy: 90.74%

Test Accuracy: 79.30%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.8229148387908936 seconds

LR changed during epoch: 2.97e-04 -> 2.86e-04

total runtime to train this model was 27.117112398147583 seconds

Hyperparameteres for model 2 at epoch 58

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.409165382385254 seconds

Loss: 0.3584

Train Accuracy: 87.34%

Test Accuracy: 78.60%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6588215827941895 seconds  
LR changed during epoch: 5.66e-05 -> 4.86e-05  
total runtime to train this model was 27.51719570159912 seconds  
Hyperparameteres for model 3 at epoch 58  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.493788480758667 seconds

Loss: 0.2507

Train Accuracy: 91.12%

Test Accuracy: 78.32%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6573295593261719 seconds

LR changed during epoch: 3.02e-04 -> 2.93e-04

total runtime to train this model was 26.696741342544556 seconds

Hyperparameteres for model 4 at epoch 58

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5252885818481445 seconds

Loss: 0.2599

Train Accuracy: 90.61%

Test Accuracy: 77.12%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 58 Summary:

=====

Time: 159.56s (Avg member: 31.91s)

Population Mean Accuracy: 77.87%

Best Member Accuracy: 79.30%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 59/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6186208724975586 seconds

LR changed during epoch: 6.01e-04 -> 8.01e-04

total runtime to train this model was 26.943761825561523 seconds

Hyperparameteres for model 0 at epoch 59

lr: 0.0010000000000000002

weight\_decay: 0.15

drop\_path: 0.013838386051600385

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.4076480865478516 seconds

Loss: 0.4679

Train Accuracy: 83.17%

Test Accuracy: 75.13%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7138252258300781 seconds

LR changed during epoch: 6.72e-05 -> 5.69e-05

total runtime to train this model was 26.98272442817688 seconds

Hyperparameteres for model 1 at epoch 59

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.568505048751831 seconds

Loss: 0.2531

Train Accuracy: 91.02%

Test Accuracy: 79.34%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.5523624420166016 seconds

LR changed during epoch: 2.86e-04 -> 2.75e-04

total runtime to train this model was 27.3903386592865 seconds

Hyperparameteres for model 2 at epoch 59

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.489473819732666 seconds

Loss: 0.3486

Train Accuracy: 87.48%

Test Accuracy: 78.68%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6525366306304932 seconds  
LR changed during epoch: 4.86e-05 -> 4.12e-05  
total runtime to train this model was 27.295709371566772 seconds  
Hyperparameteres for model 3 at epoch 59  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4545328617095947 seconds  
Loss: 0.2397  
Train Accuracy: 91.59%  
Test Accuracy: 78.30%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6931407451629639 seconds  
LR changed during epoch: 2.93e-04 -> 2.84e-04  
total runtime to train this model was 27.18596839904785 seconds  
Hyperparameteres for model 4 at epoch 59  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3463618755340576 seconds  
Loss: 0.2426  
Train Accuracy: 91.22%  
Test Accuracy: 77.24%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 59 Summary:

=====

Time: 159.53s (Avg member: 31.91s)  
Population Mean Accuracy: 77.74%  
Best Member Accuracy: 79.34%  
Mean Batch Size: 256  
Mean Learning Rate: 6.54e-04  
Mean Weight Decay: 0.080

=====

Epoch 60/70

```
=====
--- Training Member 0 (Batch size: 256) ---
built data in 1.7004098892211914 seconds
LR changed during epoch: 8.01e-04 -> 1.00e-03
total runtime to train this model was 27.020085334777832 seconds
Hyperparameteres for model 0 at epoch 60
lr: 0.00100000000000000002

weight_decay: 0.15

drop_path: 0.013838386051600385

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.445868968963623 seconds
Loss: 0.5275
Train Accuracy: 81.15%
Test Accuracy: 75.02%
Google Drive already mounted.
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_217401.pt

--- Training Member 1 (Batch size: 256) ---
built data in 1.5486831665039062 seconds
LR changed during epoch: 5.69e-05 -> 4.74e-05
total runtime to train this model was 27.218782901763916 seconds
Hyperparameteres for model 1 at epoch 60
lr: 0.000811751662685378

weight_decay: 0.03687161935761017

drop_path: 0.1811380432809464

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.48097562789917 seconds
Loss: 0.2431
Train Accuracy: 91.28%
Test Accuracy: 79.36%
Google Drive already mounted.
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_1_seed_217401.pt

--- Training Member 2 (Batch size: 256) ---
built data in 1.6784400939941406 seconds
LR changed during epoch: 2.75e-04 -> 2.64e-04
total runtime to train this model was 26.821542978286743 seconds
Hyperparameteres for model 2 at epoch 60
lr: 0.00046980901401525734

weight_decay: 0.09667856860397339

drop_path: 0.18032196419187985

warmup_epochs: 5

batch_size: 256
```

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0744903087615967 seconds

Loss: 0.3366

Train Accuracy: 88.02%

Test Accuracy: 78.31%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6955878734588623 seconds

LR changed during epoch: 4.12e-05 -> 3.43e-05

total runtime to train this model was 27.210849046707153 seconds

Hyperparameteres for model 3 at epoch 60

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.431130886077881 seconds

Loss: 0.2277

Train Accuracy: 91.98%

Test Accuracy: 78.31%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6618001461029053 seconds

LR changed during epoch: 2.84e-04 -> 2.75e-04

total runtime to train this model was 27.02775740623474 seconds

Hyperparameteres for model 4 at epoch 60

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.432849645614624 seconds

Loss: 0.2359

Train Accuracy: 91.66%

Test Accuracy: 77.29%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 60) ---

==== PBT Exploit & Explore ===

Top performers: [79.36]

Bottom performers: [75.02]

Member 0: drop\_path changed from 0.013838386051600385 to 0.035200198616847034

Member 0 copied from 1

LR=1.00e-03, WD=0.150, DropPath=0.035, Warmup=5 epochs, Batch=256

=====

Epoch 60 Summary:

=====

Time: 157.68s (Avg member: 31.53s)

Population Mean Accuracy: 77.66%

Best Member Accuracy: 79.36%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 61/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.572352409362793 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 27.21329092979431 seconds

Hyperparameteres for model 0 at epoch 61

lr: 0.0010000000000000002

weight\_decay: 0.15

drop\_path: 0.035200198616847034

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.377577543258667 seconds

Loss: 0.2253

Train Accuracy: 91.95%

Test Accuracy: 78.69%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7932806015014648 seconds

LR changed during epoch: 4.74e-05 -> 3.87e-05

total runtime to train this model was 26.461801052093506 seconds

Hyperparameteres for model 1 at epoch 61

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.637204170227051 seconds

Loss: 0.2353

Train Accuracy: 91.48%

Test Accuracy: 79.44%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5868582725524902 seconds  
LR changed during epoch: 2.64e-04 -> 2.52e-04  
total runtime to train this model was 26.847035884857178 seconds  
Hyperparameteres for model 2 at epoch 61  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4212021827697754 seconds  
Loss: 0.3220  
Train Accuracy: 88.45%  
Test Accuracy: 78.37%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6505858898162842 seconds  
LR changed during epoch: 3.43e-05 -> 2.81e-05  
total runtime to train this model was 27.044898986816406 seconds  
Hyperparameteres for model 3 at epoch 61  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4013302326202393 seconds  
Loss: 0.2224  
Train Accuracy: 92.17%  
Test Accuracy: 78.52%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5691957473754883 seconds  
LR changed during epoch: 2.75e-04 -> 2.66e-04  
total runtime to train this model was 27.114981174468994 seconds  
Hyperparameteres for model 4 at epoch 61  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.332963466644287 seconds

Loss: 0.2209

Train Accuracy: 92.15%

Test Accuracy: 76.67%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 61 Summary:

=====

Time: 158.27s (Avg member: 31.65s)

Population Mean Accuracy: 78.34%

Best Member Accuracy: 79.44%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 62/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.7529122829437256 seconds

LR changed during epoch: 2.01e-04 -> 4.01e-04

total runtime to train this model was 26.921783208847046 seconds

Hyperparameteres for model 0 at epoch 62

lr: 0.001000000000000002

weight\_decay: 0.15

drop\_path: 0.035200198616847034

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.477032423019409 seconds

Loss: 0.3028

Train Accuracy: 89.18%

Test Accuracy: 77.61%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.5595686435699463 seconds

LR changed during epoch: 3.87e-05 -> 3.09e-05

total runtime to train this model was 27.02243208885193 seconds

Hyperparameteres for model 1 at epoch 62

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4972259998321533 seconds

Loss: 0.2266

Train Accuracy: 91.97%  
Test Accuracy: 79.58%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6859543323516846 seconds  
LR changed during epoch: 2.52e-04 -> 2.41e-04  
total runtime to train this model was 27.20440697669983 seconds  
Hyperparameteres for model 2 at epoch 62  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.426490068435669 seconds  
Loss: 0.3053  
Train Accuracy: 89.03%  
Test Accuracy: 78.80%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6633718013763428 seconds  
LR changed during epoch: 2.81e-05 -> 2.25e-05  
total runtime to train this model was 27.129011631011963 seconds  
Hyperparameteres for model 3 at epoch 62  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4986507892608643 seconds  
Loss: 0.2130  
Train Accuracy: 92.29%  
Test Accuracy: 78.61%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.7046637535095215 seconds  
LR changed during epoch: 2.66e-04 -> 2.57e-04  
total runtime to train this model was 26.67910075187683 seconds  
Hyperparameteres for model 4 at epoch 62  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.455923557281494 seconds

Loss: 0.2089

Train Accuracy: 92.43%

Test Accuracy: 76.60%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 62 Summary:

=====

Time: 157.88s (Avg member: 31.58s)

Population Mean Accuracy: 78.24%

Best Member Accuracy: 79.58%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 63/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.5665655136108398 seconds

LR changed during epoch: 4.01e-04 -> 6.01e-04

total runtime to train this model was 27.02950406074524 seconds

Hyperparameteres for model 0 at epoch 63

lr: 0.0010000000000000002

weight\_decay: 0.15

drop\_path: 0.035200198616847034

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4745471477508545 seconds

Loss: 0.3822

Train Accuracy: 86.25%

Test Accuracy: 75.82%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6656734943389893 seconds

LR changed during epoch: 3.09e-05 -> 2.39e-05

total runtime to train this model was 26.739758253097534 seconds

Hyperparameteres for model 1 at epoch 63

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.577702045440674 seconds

Loss: 0.2253

Train Accuracy: 92.11%

Test Accuracy: 79.34%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.7073540687561035 seconds

LR changed during epoch: 2.41e-04 -> 2.30e-04

total runtime to train this model was 26.61384892463684 seconds

Hyperparameteres for model 2 at epoch 63

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.200620412826538 seconds

Loss: 0.3009

Train Accuracy: 89.30%

Test Accuracy: 78.53%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6735477447509766 seconds

LR changed during epoch: 2.25e-05 -> 1.75e-05

total runtime to train this model was 26.755712747573853 seconds

Hyperparameteres for model 3 at epoch 63

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4521427154541016 seconds

Loss: 0.2097

Train Accuracy: 92.55%

Test Accuracy: 78.50%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.566131830215454 seconds

LR changed during epoch: 2.57e-04 -> 2.47e-04

total runtime to train this model was 26.63818669319153 seconds

Hyperparameteres for model 4 at epoch 63

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5594258308410645 seconds

Loss: 0.2000

Train Accuracy: 92.86%

Test Accuracy: 76.81%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 63 Summary:

=====

Time: 156.49s (Avg member: 31.30s)

Population Mean Accuracy: 77.80%

Best Member Accuracy: 79.34%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 64/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6602075099945068 seconds

LR changed during epoch: 6.01e-04 -> 8.01e-04

total runtime to train this model was 26.872604370117188 seconds

Hyperparameteres for model 0 at epoch 64

lr: 0.001000000000000002

weight\_decay: 0.15

drop\_path: 0.035200198616847034

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.840959310531616 seconds

Loss: 0.4605

Train Accuracy: 83.57%

Test Accuracy: 75.28%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7353825569152832 seconds

LR changed during epoch: 2.39e-05 -> 1.79e-05

total runtime to train this model was 26.699525356292725 seconds

Hyperparameteres for model 1 at epoch 64

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9869956970214844 seconds

Loss: 0.2229

Train Accuracy: 92.17%

Test Accuracy: 79.27%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6387670040130615 seconds

LR changed during epoch: 2.30e-04 -> 2.18e-04

total runtime to train this model was 27.029602527618408 seconds

Hyperparameteres for model 2 at epoch 64

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5380053520202637 seconds

Loss: 0.2859

Train Accuracy: 89.80%

Test Accuracy: 78.62%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.5496411323547363 seconds

LR changed during epoch: 1.75e-05 -> 1.31e-05

total runtime to train this model was 27.05021047592163 seconds

Hyperparameteres for model 3 at epoch 64

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5767717361450195 seconds

Loss: 0.2049

Train Accuracy: 92.80%

Test Accuracy: 78.32%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.7957568168640137 seconds  
LR changed during epoch: 2.47e-04 -> 2.37e-04  
total runtime to train this model was 26.61016058921814 seconds  
Hyperparameteres for model 4 at epoch 64  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4696052074432373 seconds

Loss: 0.1877

Train Accuracy: 93.43%

Test Accuracy: 77.21%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 64 Summary:

=====

Time: 158.35s (Avg member: 31.67s)

Population Mean Accuracy: 77.74%

Best Member Accuracy: 79.27%

Mean Batch Size: 256

Mean Learning Rate: 6.54e-04

Mean Weight Decay: 0.080

=====

Epoch 65/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6738386154174805 seconds

LR changed during epoch: 8.01e-04 -> 1.00e-03

total runtime to train this model was 27.4832820892334 seconds

Hyperparameteres for model 0 at epoch 65

lr: 0.001000000000000002

weight\_decay: 0.15

drop\_path: 0.035200198616847034

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4941177368164062 seconds

Loss: 0.5247

Train Accuracy: 81.05%

Test Accuracy: 74.06%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6507620811462402 seconds

LR changed during epoch: 1.79e-05 -> 1.28e-05

total runtime to train this model was 27.17183017730713 seconds

Hyperparameteres for model 1 at epoch 65

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.495757818222046 seconds

Loss: 0.2168

Train Accuracy: 92.22%

Test Accuracy: 79.53%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6241278648376465 seconds

LR changed during epoch: 2.18e-04 -> 2.07e-04

total runtime to train this model was 27.69656991958618 seconds

Hyperparameteres for model 2 at epoch 65

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.7395987510681152 seconds

Loss: 0.2749

Train Accuracy: 90.07%

Test Accuracy: 78.67%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.8354034423828125 seconds

LR changed during epoch: 1.31e-05 -> 9.44e-06

total runtime to train this model was 26.957952976226807 seconds

Hyperparameteres for model 3 at epoch 65

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.9443180561065674 seconds

Loss: 0.2012

Train Accuracy: 92.84%

Test Accuracy: 78.36%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.632338285446167 seconds  
LR changed during epoch: 2.37e-04 -> 2.28e-04  
total runtime to train this model was 27.274366855621338 seconds  
Hyperparameteres for model 4 at epoch 65  
lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773  
drop\_path: 0.027005502982638718  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5071589946746826 seconds  
Loss: 0.1760  
Train Accuracy: 93.77%  
Test Accuracy: 77.45%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 65) ---

==== PBT Exploit & Explore ====  
Top performers: [79.53]  
Bottom performers: [74.06]  
Member 0: lr changed from 0.001000000000000002 to 0.0007014734000586536  
Member 0: weight\_decay changed from 0.15 to 0.12473030843194598  
Member 0: drop\_path changed from 0.035200198616847034 to 0.0685309988374442  
Member 0 copied from 1  
LR=7.01e-04, WD=0.125, DropPath=0.069, Warmup=5 epochs, Batch=256

=====  
Epoch 65 Summary:  
=====

Time: 159.48s (Avg member: 31.89s)  
Population Mean Accuracy: 77.61%  
Best Member Accuracy: 79.53%  
Mean Batch Size: 256  
Mean Learning Rate: 5.94e-04  
Mean Weight Decay: 0.075

=====  
Epoch 66/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6465764045715332 seconds  
LR changed during epoch: 7.16e-07 -> 1.41e-04  
total runtime to train this model was 27.532206535339355 seconds  
Hyperparameteres for model 0 at epoch 66  
lr: 0.0007014734000586536

weight\_decay: 0.12473030843194598  
drop\_path: 0.0685309988374442

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.442272186279297 seconds

Loss: 0.2024

Train Accuracy: 92.78%

Test Accuracy: 78.98%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.7459843158721924 seconds

LR changed during epoch: 1.28e-05 -> 8.53e-06

total runtime to train this model was 27.310035705566406 seconds

Hyperparameteres for model 1 at epoch 66

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4174458980560303 seconds

Loss: 0.2195

Train Accuracy: 92.17%

Test Accuracy: 79.70%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6582560539245605 seconds

LR changed during epoch: 2.07e-04 -> 1.96e-04

total runtime to train this model was 27.76296067237854 seconds

Hyperparameteres for model 2 at epoch 66

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.532609224319458 seconds

Loss: 0.2650

Train Accuracy: 90.51%

Test Accuracy: 78.88%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6031091213226318 seconds

LR changed during epoch: 9.44e-06 -> 6.41e-06

total runtime to train this model was 27.022154808044434 seconds

Hyperparameteres for model 3 at epoch 66

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.444729804992676 seconds

Loss: 0.1987

Train Accuracy: 92.96%

Test Accuracy: 78.35%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.64719820022583 seconds

LR changed during epoch: 2.28e-04 -> 2.18e-04

total runtime to train this model was 27.20831274986267 seconds

Hyperparameteres for model 4 at epoch 66

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.6047205924987793 seconds

Loss: 0.1660

Train Accuracy: 94.13%

Test Accuracy: 77.09%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 66 Summary:

=====

Time: 160.86s (Avg member: 32.17s)

Population Mean Accuracy: 78.60%

Best Member Accuracy: 79.70%

Mean Batch Size: 256

Mean Learning Rate: 5.94e-04

Mean Weight Decay: 0.075

=====

Epoch 67/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6628165245056152 seconds

LR changed during epoch: 1.41e-04 -> 2.81e-04

total runtime to train this model was 27.32648468017578 seconds

Hyperparameteres for model 0 at epoch 67

lr: 0.0007014734000586536

weight\_decay: 0.12473030843194598

drop\_path: 0.0685309988374442

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.485690116882324 seconds

Loss: 0.2578

Train Accuracy: 90.80%

Test Accuracy: 78.14%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.6372027397155762 seconds

LR changed during epoch: 8.53e-06 -> 5.24e-06

total runtime to train this model was 27.009433031082153 seconds

Hyperparameteres for model 1 at epoch 67

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.423447370529175 seconds

Loss: 0.2096

Train Accuracy: 92.49%

Test Accuracy: 79.52%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6014940738677979 seconds

LR changed during epoch: 1.96e-04 -> 1.85e-04

total runtime to train this model was 26.93956732749939 seconds

Hyperparameteres for model 2 at epoch 67

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.489858627319336 seconds

Loss: 0.2485

Train Accuracy: 91.18%

Test Accuracy: 78.81%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.907217264175415 seconds

LR changed during epoch: 6.41e-06 -> 4.04e-06

total runtime to train this model was 26.91216778755188 seconds

Hyperparameteres for model 3 at epoch 67

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 3.1202993392944336 seconds

Loss: 0.1940

Train Accuracy: 93.20%

Test Accuracy: 78.48%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.5773060321807861 seconds

LR changed during epoch: 2.18e-04 -> 2.08e-04

total runtime to train this model was 27.34154176712036 seconds

Hyperparameteres for model 4 at epoch 67

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.424004077911377 seconds

Loss: 0.1576

Train Accuracy: 94.36%

Test Accuracy: 77.61%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 67 Summary:

=====

Time: 158.11s (Avg member: 31.62s)

Population Mean Accuracy: 78.51%

Best Member Accuracy: 79.52%

Mean Batch Size: 256

Mean Learning Rate: 5.94e-04

Mean Weight Decay: 0.075

=====

Epoch 68/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.685805320739746 seconds  
LR changed during epoch: 2.81e-04 -> 4.22e-04  
total runtime to train this model was 27.105875730514526 seconds  
Hyperparameteres for model 0 at epoch 68  
lr: 0.0007014734000586536

weight\_decay: 0.12473030843194598

drop\_path: 0.0685309988374442

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4620535373687744 seconds  
Loss: 0.3158  
Train Accuracy: 88.63%  
Test Accuracy: 77.38%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.615971326828003 seconds  
LR changed during epoch: 5.24e-06 -> 2.88e-06  
total runtime to train this model was 26.93149209022522 seconds  
Hyperparameteres for model 1 at epoch 68  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5885610580444336 seconds  
Loss: 0.2144  
Train Accuracy: 92.43%  
Test Accuracy: 79.48%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.6760756969451904 seconds  
LR changed during epoch: 1.85e-04 -> 1.74e-04  
total runtime to train this model was 27.662909030914307 seconds  
Hyperparameteres for model 2 at epoch 68  
lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4876675605773926 seconds

Loss: 0.2381

Train Accuracy: 91.53%

Test Accuracy: 79.60%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6509404182434082 seconds

LR changed during epoch: 4.04e-06 -> 2.35e-06

total runtime to train this model was 27.103885650634766 seconds

Hyperparameteres for model 3 at epoch 68

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.5162065029144287 seconds

Loss: 0.1886

Train Accuracy: 93.32%

Test Accuracy: 78.39%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6246135234832764 seconds

LR changed during epoch: 2.08e-04 -> 1.98e-04

total runtime to train this model was 26.850671768188477 seconds

Hyperparameteres for model 4 at epoch 68

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.7371268272399902 seconds

Loss: 0.1420

Train Accuracy: 95.03%

Test Accuracy: 77.65%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 68 Summary:

=====

Time: 159.02s (Avg member: 31.80s)

Population Mean Accuracy: 78.50%

Best Member Accuracy: 79.60%

Mean Batch Size: 256

Mean Learning Rate: 5.94e-04

Mean Weight Decay: 0.075

```
=====
Epoch 69/70
=====
```

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.780683994293213 seconds
LR changed during epoch: 4.22e-04 -> 5.62e-04
total runtime to train this model was 26.20844602584839 seconds
Hyperparameteres for model 0 at epoch 69
lr: 0.0007014734000586536
```

```
weight_decay: 0.12473030843194598
```

```
drop_path: 0.0685309988374442
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 3.2568798065185547 seconds
```

```
Loss: 0.3724
Train Accuracy: 86.50%
Test Accuracy: 76.14%
```

```
Google Drive already mounted.
```

```
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_217401.pt
```

```
--- Training Member 1 (Batch size: 256) ---
built data in 1.6327078342437744 seconds
LR changed during epoch: 2.88e-06 -> 1.47e-06
total runtime to train this model was 26.927679777145386 seconds
Hyperparameteres for model 1 at epoch 69
lr: 0.000811751662685378
```

```
weight_decay: 0.03687161935761017
```

```
drop_path: 0.1811380432809464
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.405421495437622 seconds
```

```
Loss: 0.2101
Train Accuracy: 92.61%
Test Accuracy: 79.61%
```

```
Google Drive already mounted.
```

```
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_1_seed_217401.pt
```

```
--- Training Member 2 (Batch size: 256) ---
built data in 1.5971965789794922 seconds
LR changed during epoch: 1.74e-04 -> 1.63e-04
total runtime to train this model was 27.221917390823364 seconds
Hyperparameteres for model 2 at epoch 69
lr: 0.00046980901401525734
```

```
weight_decay: 0.09667856860397339
```

```
drop_path: 0.18032196419187985
```

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.492466688156128 seconds

Loss: 0.2335

Train Accuracy: 91.69%

Test Accuracy: 79.37%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.6682395935058594 seconds

LR changed during epoch: 2.35e-06 -> 1.34e-06

total runtime to train this model was 27.395376920700073 seconds

Hyperparameteres for model 3 at epoch 69

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5947492122650146 seconds

Loss: 0.1906

Train Accuracy: 93.36%

Test Accuracy: 78.42%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.611968755722046 seconds

LR changed during epoch: 1.98e-04 -> 1.89e-04

total runtime to train this model was 27.476344108581543 seconds

Hyperparameteres for model 4 at epoch 69

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.471928834915161 seconds

Loss: 0.1338

Train Accuracy: 95.26%

Test Accuracy: 77.40%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

=====

Epoch 69 Summary:

=====

Time: 158.96s (Avg member: 31.79s)

Population Mean Accuracy: 78.19%

Best Member Accuracy: 79.61%

Mean Batch Size: 256

Mean Learning Rate: 5.94e-04

Mean Weight Decay: 0.075

=====

Epoch 70/70

=====

--- Training Member 0 (Batch size: 256) ---

built data in 1.6779506206512451 seconds

LR changed during epoch: 5.62e-04 -> 7.01e-04

total runtime to train this model was 26.80803346633911 seconds

Hyperparameteres for model 0 at epoch 70

lr: 0.0007014734000586536

weight\_decay: 0.12473030843194598

drop\_path: 0.0685309988374442

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.4596328735351562 seconds

Loss: 0.4226

Train Accuracy: 84.84%

Test Accuracy: 75.91%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_217401.pt

--- Training Member 1 (Batch size: 256) ---

built data in 1.5820541381835938 seconds

LR changed during epoch: 1.47e-06 -> 1.00e-06

total runtime to train this model was 26.605138540267944 seconds

Hyperparameteres for model 1 at epoch 70

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.1811380432809464

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_

evaluation in 2.917020082473755 seconds

Loss: 0.2091

Train Accuracy: 92.65%

Test Accuracy: 79.57%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_217401.pt

--- Training Member 2 (Batch size: 256) ---

built data in 1.8336410522460938 seconds

LR changed during epoch: 1.63e-04 -> 1.52e-04

total runtime to train this model was 26.64570665359497 seconds

Hyperparameteres for model 2 at epoch 70

lr: 0.00046980901401525734

weight\_decay: 0.09667856860397339

drop\_path: 0.18032196419187985

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6245460510253906 seconds

Loss: 0.2199

Train Accuracy: 92.13%

Test Accuracy: 79.42%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_217401.pt

--- Training Member 3 (Batch size: 256) ---

built data in 1.597137689590454 seconds

LR changed during epoch: 1.34e-06 -> 1.00e-06

total runtime to train this model was 27.290546417236328 seconds

Hyperparameteres for model 3 at epoch 70

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.03329510856734546

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5912067890167236 seconds

Loss: 0.1919

Train Accuracy: 93.18%

Test Accuracy: 78.50%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_217401.pt

--- Training Member 4 (Batch size: 256) ---

built data in 1.6059744358062744 seconds

LR changed during epoch: 1.89e-04 -> 1.79e-04

total runtime to train this model was 27.08226990699768 seconds

Hyperparameteres for model 4 at epoch 70

lr: 0.0004058603111642117

weight\_decay: 0.04977525351286773

drop\_path: 0.027005502982638718

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4541642665863037 seconds

Loss: 0.1277

Train Accuracy: 95.45%

Test Accuracy: 77.30%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

--- Population Update (Epoch 70) ---

==== PBT Exploit & Explore ====

Top performers: [79.57]

Bottom performers: [75.91]

Member 0: lr changed from 0.0007014734000586536 to 0.0007488852210148119

Member 0: weight\_decay changed from 0.12473030843194598 to 0.1291694225656309

Member 0: drop\_path changed from 0.0685309988374442 to 0.07358146894631483

Member 0 copied from 1

LR=7.49e-04, WD=0.129, DropPath=0.074, Warmup=5 epochs, Batch=256

=====

Epoch 70 Summary:

=====

Time: 157.06s (Avg member: 31.41s)

Population Mean Accuracy: 78.14%

Best Member Accuracy: 79.57%

Mean Batch Size: 256

Mean Learning Rate: 6.04e-04

Mean Weight Decay: 0.076

=====

PBT TRAINING COMPLETE

=====

Best member: 1

Best accuracy: 79.57%

Best hyperparameters:

Learning Rate: 8.12e-04

Weight Decay: 0.037

Drop Path Rate: 0.181

Warmup Epochs: 5

Batch Size: 256

=====

PBT TIMING REPORT

=====

Overall Statistics Value

---

Total runtime 11163.69s (186.06 min)

Number of epochs 70

Number of population updates 14

Epoch Timing Value

---

Average epoch time 159.47s

Std epoch time 1.85s

Min epoch time 153.12s (epoch 19)

Max epoch time 163.44s (epoch 20)

Member Training Timing Value

---

Average member time per epoch 31.89s

Total training time 11163.01s

Training efficiency 100.0%

Population Update Timing Value

---

Average update time 0.01s

Total update time 0.18s

Update efficiency 0.0%

Batch Size Analysis Avg Time Samples

---

Batch size 256 31.89s 350

Per-Member Statistics Avg Time Total Time

---

Member 0	31.86s	2230.03s
Member 1	31.93s	2234.93s
Member 2	31.92s	2234.50s
Member 3	31.86s	2230.12s
Member 4	31.91s	2233.42s

---

Experiment completed successfully!

Results saved to: pbt\_vit\_timing\_results.png

Detailed timing saved to: pbt\_detailed\_timing.png