

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 1.6919138431549072 seconds  
/tmp/ipython-input-2963768052.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 25.833407163619995 seconds  
Hyperparameteres for model 0 at epoch 1  
lr: 0.0006782416715044019  
  
weight\_decay: 0.14890877193751148  
  
drop\_path: 0.25806391713579274  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6624915599823 seconds  
Loss: 1.9873  
Train Accuracy: 25.80%  
Test Accuracy: 32.41%  
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 1.586134910583496 seconds  
LR changed during epoch: 8.28e-07 -> 1.63e-04  
total runtime to train this model was 25.979796648025513 seconds  
Hyperparameteres for model 1 at epoch 1  
lr: 0.000811751662685378

weight\_decay: 0.03687161935761017  
  
drop\_path: 0.45284510820236595  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4258623123168945 seconds  
Loss: 1.9871

Train Accuracy: 25.76%  
Test Accuracy: 32.59%  
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 1.5804352760314941 seconds  
LR changed during epoch: 5.88e-07 -> 1.16e-04  
total runtime to train this model was 25.830768585205078 seconds  
Hyperparameteres for model 2 at epoch 1  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2550671100616455 seconds  
Loss: 2.0038  
Train Accuracy: 25.08%  
Test Accuracy: 30.23%  
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 1.5688889026641846 seconds  
LR changed during epoch: 5.95e-07 -> 1.17e-04  
total runtime to train this model was 25.89645004272461 seconds  
Hyperparameteres for model 3 at epoch 1  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2634971141815186 seconds  
Loss: 1.9812  
Train Accuracy: 25.95%  
Test Accuracy: 30.23%  
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 1.6448323726654053 seconds  
LR changed during epoch: 2.86e-07 -> 5.64e-05  
total runtime to train this model was 26.070683002471924 seconds  
Hyperparameteres for model 4 at epoch 1  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3731234073638916 seconds

Loss: 2.0290

Train Accuracy: 24.34%

Test Accuracy: 27.79%

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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: 171.90s (Avg member: 34.38s)

Population Mean Accuracy: 30.65%

Best Member Accuracy: 32.59%

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 1.6437246799468994 seconds

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

total runtime to train this model was 26.081754207611084 seconds

Hyperparameteres for model 0 at epoch 2

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2612972259521484 seconds

Loss: 1.7751

Train Accuracy: 33.54%

Test Accuracy: 35.96%

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 1.5760819911956787 seconds

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

total runtime to train this model was 25.960672616958618 seconds

Hyperparameteres for model 1 at epoch 2

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.45284510820236595

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.358870506286621 seconds

Loss: 1.7722

Train Accuracy: 33.69%

Test Accuracy: 37.27%

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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 1.6039643287658691 seconds

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

total runtime to train this model was 25.714087963104248 seconds

Hyperparameteres for model 2 at epoch 2

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.301558256149292 seconds

Loss: 1.7887

Train Accuracy: 33.36%

Test Accuracy: 35.56%

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 1.7652361392974854 seconds

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

total runtime to train this model was 25.15988540649414 seconds

Hyperparameteres for model 3 at epoch 2

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.999027967453003 seconds

Loss: 1.7532

Train Accuracy: 34.78%

Test Accuracy: 37.94%

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 1.769418478012085 seconds

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

total runtime to train this model was 25.522276401519775 seconds

Hyperparameteres for model 4 at epoch 2

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9165914058685303 seconds

Loss: 1.8016

Train Accuracy: 33.22%

Test Accuracy: 33.50%

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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:

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Time: 150.82s (Avg member: 30.16s)

Population Mean Accuracy: 36.05%

Best Member Accuracy: 37.94%

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 1.626849889755249 seconds

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

total runtime to train this model was 26.144084930419922 seconds

Hyperparameteres for model 0 at epoch 3

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3410637378692627 seconds

Loss: 1.6517

Train Accuracy: 38.86%

Test Accuracy: 40.95%

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 1.652125358581543 seconds

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

total runtime to train this model was 25.98789143562317 seconds

Hyperparameteres for model 1 at epoch 3

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.45284510820236595

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2804737091064453 seconds

Loss: 1.6551

Train Accuracy: 38.84%

Test Accuracy: 42.30%

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 1.5632431507110596 seconds

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

total runtime to train this model was 25.859275579452515 seconds

Hyperparameteres for model 2 at epoch 3

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.285099744796753 seconds

Loss: 1.6662

Train Accuracy: 38.15%

Test Accuracy: 40.82%

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 1.6463253498077393 seconds

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

total runtime to train this model was 25.786818504333496 seconds

Hyperparameteres for model 3 at epoch 3

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.531130075454712 seconds

Loss: 1.6215

Train Accuracy: 40.25%

Test Accuracy: 44.30%

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 1.6917047500610352 seconds  
LR changed during epoch: 1.12e-04 -> 1.69e-04  
total runtime to train this model was 25.05616569519043 seconds  
Hyperparameteres for model 4 at epoch 3  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3760414123535156 seconds

Loss: 1.6834  
Train Accuracy: 37.75%

Test Accuracy: 38.32%

Google Drive already mounted.

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

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Epoch 3 Summary:

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Time: 151.09s (Avg member: 30.22s)

Population Mean Accuracy: 41.34%

Best Member Accuracy: 44.30%

Mean Batch Size: 256

Mean Learning Rate: 5.86e-04

Mean Weight Decay: 0.085

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Epoch 4/70

=====

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

built data in 1.6251251697540283 seconds

LR changed during epoch: 4.08e-04 -> 5.43e-04

total runtime to train this model was 25.74191975593567 seconds

Hyperparameteres for model 0 at epoch 4

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.49668550491333 seconds

Loss: 1.5468

Train Accuracy: 43.27%

Test Accuracy: 46.71%

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 1.6145355701446533 seconds

LR changed during epoch: 4.88e-04 -> 6.50e-04

total runtime to train this model was 25.865478038787842 seconds

Hyperparameteres for model 1 at epoch 4

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.45284510820236595

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2328953742980957 seconds

Loss: 1.5664

Train Accuracy: 42.75%

Test Accuracy: 45.34%

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 1.6734824180603027 seconds

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

total runtime to train this model was 25.91616463661194 seconds

Hyperparameteres for model 2 at epoch 4

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2715985774993896 seconds

Loss: 1.5701

Train Accuracy: 42.41%

Test Accuracy: 44.15%

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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 1.629948377609253 seconds

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

total runtime to train this model was 25.999375820159912 seconds

Hyperparameteres for model 3 at epoch 4

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3285937309265137 seconds

Loss: 1.5139

Train Accuracy: 44.42%

Test Accuracy: 45.31%  
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 1.7286925315856934 seconds  
LR changed during epoch: 1.69e-04 -> 2.25e-04  
total runtime to train this model was 25.574727773666382 seconds  
Hyperparameteres for model 4 at epoch 4  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.838993787765503 seconds  
Loss: 1.5748  
Train Accuracy: 41.90%  
Test Accuracy: 43.23%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_217401.pt

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Epoch 4 Summary:  
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Time: 150.74s (Avg member: 30.15s)  
Population Mean Accuracy: 44.95%  
Best Member Accuracy: 46.71%  
Mean Batch Size: 256  
Mean Learning Rate: 5.86e-04  
Mean Weight Decay: 0.085

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Epoch 5/70  
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--- Training Member 0 (Batch size: 256) ---  
built data in 1.7420506477355957 seconds  
LR changed during epoch: 5.43e-04 -> 6.78e-04  
total runtime to train this model was 25.068902492523193 seconds  
Hyperparameteres for model 0 at epoch 5  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148  
drop\_path: 0.25806391713579274  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.157244920730591 seconds  
Loss: 1.4855  
Train Accuracy: 45.81%  
Test Accuracy: 48.26%  
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 1.5815834999084473 seconds

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

total runtime to train this model was 25.96678352355957 seconds

Hyperparameteres for model 1 at epoch 5

lr: 0.000811751662685378

weight\_decay: 0.03687161935761017

drop\_path: 0.45284510820236595

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3256711959838867 seconds

Loss: 1.5197

Train Accuracy: 44.18%

Test Accuracy: 46.80%

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 1.6074323654174805 seconds

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

total runtime to train this model was 25.638521432876587 seconds

Hyperparameteres for model 2 at epoch 5

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.276790142059326 seconds

Loss: 1.5010

Train Accuracy: 45.28%

Test Accuracy: 49.57%

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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 1.623399019241333 seconds

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

total runtime to train this model was 25.509873390197754 seconds

Hyperparameteres for model 3 at epoch 5

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256



lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.898775339126587 seconds

Loss: 1.4472

Train Accuracy: 47.38%

Test Accuracy: 49.82%

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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 1.766437292098999 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 25.16938805580139 seconds

Hyperparameteres for model 1 at epoch 6

lr: 0.0010000000000000002

weight\_decay: 0.02

drop\_path: 0.4893032595268705

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9497737884521484 seconds

Loss: 1.3789

Train Accuracy: 50.01%

Test Accuracy: 49.06%

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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 1.5809040069580078 seconds

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

total runtime to train this model was 25.94533133506775 seconds

Hyperparameteres for model 2 at epoch 6

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2639269828796387 seconds

Loss: 1.4547

Train Accuracy: 47.14%

Test Accuracy: 48.83%

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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 1.5732975006103516 seconds

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

total runtime to train this model was 25.80690312385559 seconds

Hyperparameteres for model 3 at epoch 6

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3302793502807617 seconds

Loss: 1.3982

Train Accuracy: 49.34%

Test Accuracy: 52.05%

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 1.5822513103485107 seconds

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

total runtime to train this model was 25.750970363616943 seconds

Hyperparameteres for model 4 at epoch 6

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3586337566375732 seconds

Loss: 1.3930

Train Accuracy: 49.46%

Test Accuracy: 49.88%

Google Drive already mounted.

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

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Epoch 6 Summary:

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Time: 150.04s (Avg member: 30.01s)

Population Mean Accuracy: 49.93%

Best Member Accuracy: 52.05%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

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Epoch 7/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.560492992401123 seconds  
LR changed during epoch: 6.78e-04 -> 6.77e-04  
total runtime to train this model was 25.57135009765625 seconds  
Hyperparameteres for model 0 at epoch 7  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2707009315490723 seconds

Loss: 1.3888

Train Accuracy: 49.49%

Test Accuracy: 51.87%

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 1.683716058731079 seconds

LR changed during epoch: 2.01e-04 -> 4.01e-04

total runtime to train this model was 24.85843324661255 seconds

Hyperparameteres for model 1 at epoch 7

lr: 0.00100000000000000002

weight\_decay: 0.02

drop\_path: 0.4893032595268705

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0387089252471924 seconds

Loss: 1.3817

Train Accuracy: 49.57%

Test Accuracy: 51.45%

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 1.7041311264038086 seconds

LR changed during epoch: 5.76e-04 -> 5.75e-04

total runtime to train this model was 24.876935482025146 seconds

Hyperparameteres for model 2 at epoch 7

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.9326181411743164 seconds

Loss: 1.4009

Train Accuracy: 49.28%

Test Accuracy: 51.02%

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 1.6531987190246582 seconds

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

total runtime to train this model was 25.70171070098877 seconds

Hyperparameteres for model 3 at epoch 7

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.238970994949341 seconds

Loss: 1.3346

Train Accuracy: 51.58%

Test Accuracy: 53.58%

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 1.6022915840148926 seconds

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

total runtime to train this model was 25.998486757278442 seconds

Hyperparameteres for model 4 at epoch 7

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3221144676208496 seconds

Loss: 1.3291

Train Accuracy: 51.56%

Test Accuracy: 52.73%

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: 149.26s (Avg member: 29.85s)

Population Mean Accuracy: 52.13%

Best Member Accuracy: 53.58%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

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

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

built data in 1.6107447147369385 seconds

LR changed during epoch: 6.77e-04 -> 6.75e-04

total runtime to train this model was 25.777488231658936 seconds

Hyperparameteres for model 0 at epoch 8

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.332327365875244 seconds

Loss: 1.3448

Train Accuracy: 51.39%

Test Accuracy: 50.25%

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 1.5746548175811768 seconds

LR changed during epoch: 4.01e-04 -> 6.01e-04

total runtime to train this model was 25.947195529937744 seconds

Hyperparameteres for model 1 at epoch 8

lr: 0.001000000000000002

weight\_decay: 0.02

drop\_path: 0.4893032595268705

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.289241313934326 seconds

Loss: 1.3845

Train Accuracy: 49.71%

Test Accuracy: 51.61%

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 1.7630300521850586 seconds

LR changed during epoch: 5.75e-04 -> 5.73e-04

total runtime to train this model was 25.281235456466675 seconds

Hyperparameteres for model 2 at epoch 8

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.260560989379883 seconds

Loss: 1.3532

Train Accuracy: 50.73%

Test Accuracy: 52.71%

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 1.6237502098083496 seconds

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

total runtime to train this model was 25.36982011795044 seconds

Hyperparameteres for model 3 at epoch 8

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.751882791519165 seconds

Loss: 1.2980

Train Accuracy: 53.15%

Test Accuracy: 53.85%

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 1.6829450130462646 seconds

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

total runtime to train this model was 25.879215717315674 seconds

Hyperparameteres for model 4 at epoch 8

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.324047327041626 seconds

Loss: 1.2770

Train Accuracy: 53.83%

Test Accuracy: 52.88%

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: 150.75s (Avg member: 30.15s)

Population Mean Accuracy: 52.26%  
Best Member Accuracy: 53.85%  
Mean Batch Size: 256  
Mean Learning Rate: 6.24e-04  
Mean Weight Decay: 0.082

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6323177814483643 seconds  
LR changed during epoch: 6.75e-04 -> 6.72e-04  
total runtime to train this model was 26.19608473777771 seconds  
Hyperparameteres for model 0 at epoch 9  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5834479331970215 seconds

Loss: 1.3057  
Train Accuracy: 52.60%  
Test Accuracy: 54.62%

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 1.6493184566497803 seconds  
LR changed during epoch: 6.01e-04 -> 8.01e-04  
total runtime to train this model was 26.40341591835022 seconds  
Hyperparameteres for model 1 at epoch 9  
lr: 0.0010000000000000002

weight\_decay: 0.02

drop\_path: 0.4893032595268705

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3211538791656494 seconds

Loss: 1.3805  
Train Accuracy: 49.92%  
Test Accuracy: 50.95%

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 1.6950063705444336 seconds  
LR changed during epoch: 5.73e-04 -> 5.71e-04  
total runtime to train this model was 25.334271907806396 seconds  
Hyperparameteres for model 2 at epoch 9  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.126959800720215 seconds

Loss: 1.3140

Train Accuracy: 52.53%

Test Accuracy: 53.58%

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 1.7042853832244873 seconds

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

total runtime to train this model was 26.066995859146118 seconds

Hyperparameteres for model 3 at epoch 9

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.598289728164673 seconds

Loss: 1.2498

Train Accuracy: 55.29%

Test Accuracy: 56.28%

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 1.5866656303405762 seconds

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

total runtime to train this model was 25.74759340286255 seconds

Hyperparameteres for model 4 at epoch 9

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2772703170776367 seconds

Loss: 1.2336

Train Accuracy: 55.70%

Test Accuracy: 55.78%

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: 152.25s (Avg member: 30.45s)  
Population Mean Accuracy: 54.24%  
Best Member Accuracy: 56.28%  
Mean Batch Size: 256  
Mean Learning Rate: 6.24e-04  
Mean Weight Decay: 0.082

```
=====
```

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6486890316009521 seconds  
LR changed during epoch: 6.72e-04 -> 6.68e-04  
total runtime to train this model was 25.64124059677124 seconds  
Hyperparameteres for model 0 at epoch 10  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2676784992218018 seconds

Loss: 1.2590  
Train Accuracy: 54.58%  
Test Accuracy: 55.75%

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 1.6216113567352295 seconds

LR changed during epoch: 8.01e-04 -> 1.00e-03  
total runtime to train this model was 25.538049697875977 seconds  
Hyperparameteres for model 1 at epoch 10  
lr: 0.0010000000000000002

weight\_decay: 0.02

drop\_path: 0.4893032595268705

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2850701808929443 seconds

Loss: 1.3718  
Train Accuracy: 50.43%  
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 1.6344707012176514 seconds  
LR changed during epoch: 5.71e-04 -> 5.68e-04  
total runtime to train this model was 25.371559858322144 seconds  
Hyperparameteres for model 2 at epoch 10  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5522799491882324 seconds

Loss: 1.2778

Train Accuracy: 53.73%

Test Accuracy: 55.20%

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 1.7749881744384766 seconds

LR changed during epoch: 5.78e-04 -> 5.75e-04

total runtime to train this model was 24.667507648468018 seconds

Hyperparameteres for model 3 at epoch 10

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4223363399505615 seconds

Loss: 1.2138

Train Accuracy: 56.54%

Test Accuracy: 57.07%

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 1.6138644218444824 seconds

LR changed during epoch: 2.78e-04 -> 2.76e-04

total runtime to train this model was 25.678158283233643 seconds

Hyperparameteres for model 4 at epoch 10

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.304084300994873 seconds

Loss: 1.1939  
Train Accuracy: 57.12%  
Test Accuracy: 55.66%  
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: [57.07]

Bottom performers: [51.95]

Member 1: drop\_path changed from 0.4893032595268705 to 0.496791521403641

Member 1 copied from 3

LR=1.00e-03, WD=0.020, DropPath=0.497, Warmup=5 epochs, Batch=256

=====

Epoch 10 Summary:

=====

Time: 149.30s (Avg member: 29.86s)

Population Mean Accuracy: 55.13%

Best Member Accuracy: 57.07%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

=====

Epoch 11/70

=====

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

built data in 1.6189708709716797 seconds

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

total runtime to train this model was 25.791166305541992 seconds

Hyperparameteres for model 0 at epoch 11

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3149523735046387 seconds

Loss: 1.2280

Train Accuracy: 55.74%

Test Accuracy: 56.59%

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 1.6712076663970947 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 26.31054711341858 seconds

Hyperparameteres for model 1 at epoch 11

lr: 0.0010000000000000002

weight\_decay: 0.02

drop\_path: 0.496791521403641

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.310032367706299 seconds

Loss: 1.1656

Train Accuracy: 58.34%

Test Accuracy: 59.89%

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 1.5875627994537354 seconds

LR changed during epoch: 5.68e-04 -> 5.64e-04

total runtime to train this model was 25.703471422195435 seconds

Hyperparameteres for model 2 at epoch 11

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.283114194869995 seconds

Loss: 1.2413

Train Accuracy: 55.36%

Test Accuracy: 56.25%

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 1.762253761291504 seconds

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

total runtime to train this model was 25.258997440338135 seconds

Hyperparameteres for model 3 at epoch 11

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0718400478363037 seconds

Loss: 1.1738

Train Accuracy: 57.84%

Test Accuracy: 58.41%

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 1.6723856925964355 seconds

LR changed during epoch: 2.76e-04 -> 2.75e-04

total runtime to train this model was 24.43582034111023 seconds

Hyperparameteres for model 4 at epoch 11

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.958782911300659 seconds

Loss: 1.1647

Train Accuracy: 57.98%

Test Accuracy: 57.58%

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: 150.05s (Avg member: 30.01s)

Population Mean Accuracy: 57.74%

Best Member Accuracy: 59.89%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

=====

Epoch 12/70

=====

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

built data in 1.5863986015319824 seconds

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

total runtime to train this model was 25.963204622268677 seconds

Hyperparameteres for model 0 at epoch 12

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2776827812194824 seconds

Loss: 1.1881

Train Accuracy: 57.32%

Test Accuracy: 58.19%

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 1.5663061141967773 seconds

LR changed during epoch: 2.01e-04 -> 4.01e-04

total runtime to train this model was 25.759471654891968 seconds

Hyperparameteres for model 1 at epoch 12



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 1.7502267360687256 seconds

LR changed during epoch: 2.75e-04 -> 2.72e-04

total runtime to train this model was 25.115456581115723 seconds

Hyperparameteres for model 4 at epoch 12

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.4669573307037354 seconds

Loss: 1.1279

Train Accuracy: 59.32%

Test Accuracy: 60.07%

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: 150.76s (Avg member: 30.15s)

Population Mean Accuracy: 59.36%

Best Member Accuracy: 60.11%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

=====

Epoch 13/70

=====

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

built data in 1.6386706829071045 seconds

LR changed during epoch: 6.59e-04 -> 6.53e-04

total runtime to train this model was 26.15270161628723 seconds

Hyperparameteres for model 0 at epoch 13

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3870818614959717 seconds

Loss: 1.1479

Train Accuracy: 59.01%

Test Accuracy: 60.23%

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 1.5682921409606934 seconds  
LR changed during epoch: 4.01e-04 -> 6.01e-04  
total runtime to train this model was 26.225027561187744 seconds  
Hyperparameteres for model 1 at epoch 13  
lr: 0.0010000000000000002

weight\_decay: 0.02  
drop\_path: 0.496791521403641  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3702197074890137 seconds  
Loss: 1.1855  
Train Accuracy: 57.53%  
Test Accuracy: 58.97%  
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 1.5548827648162842 seconds  
LR changed during epoch: 5.60e-04 -> 5.55e-04  
total runtime to train this model was 25.864996433258057 seconds  
Hyperparameteres for model 2 at epoch 13  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3150229454040527 seconds  
Loss: 1.1601  
Train Accuracy: 58.61%  
Test Accuracy: 59.61%  
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 1.576930046081543 seconds  
LR changed during epoch: 5.67e-04 -> 5.62e-04  
total runtime to train this model was 25.925549268722534 seconds  
Hyperparameteres for model 3 at epoch 13  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

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

evaluation in 2.295154094696045 seconds

Loss: 1.0977

Train Accuracy: 60.73%

Test Accuracy: 60.60%

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 1.7206246852874756 seconds

LR changed during epoch: 2.72e-04 -> 2.70e-04

total runtime to train this model was 25.60221028327942 seconds

Hyperparameteres for model 4 at epoch 13

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.3639936447143555 seconds

Loss: 1.1002

Train Accuracy: 60.78%

Test Accuracy: 60.25%

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: 151.85s (Avg member: 30.37s)

Population Mean Accuracy: 59.93%

Best Member Accuracy: 60.60%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

=====

Epoch 14/70

=====

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

built data in 1.622349739074707 seconds

LR changed during epoch: 6.53e-04 -> 6.47e-04

total runtime to train this model was 26.146259784698486 seconds

Hyperparameteres for model 0 at epoch 14

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.35790753364563 seconds

Loss: 1.1180

Train Accuracy: 59.90%  
Test Accuracy: 62.11%  
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 1.5757994651794434 seconds  
LR changed during epoch: 6.01e-04 -> 8.01e-04  
total runtime to train this model was 26.13399839401245 seconds  
Hyperparameteres for model 1 at epoch 14  
lr: 0.0010000000000000002

weight\_decay: 0.02  
drop\_path: 0.496791521403641  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2609732151031494 seconds  
Loss: 1.1989  
Train Accuracy: 57.02%  
Test Accuracy: 58.28%  
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 1.5720300674438477 seconds  
LR changed during epoch: 5.55e-04 -> 5.49e-04  
total runtime to train this model was 26.036015272140503 seconds  
Hyperparameteres for model 2 at epoch 14  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.264655351638794 seconds  
Loss: 1.1368  
Train Accuracy: 59.37%  
Test Accuracy: 60.58%  
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 1.571617603302002 seconds  
LR changed during epoch: 5.62e-04 -> 5.56e-04  
total runtime to train this model was 25.974379777908325 seconds  
Hyperparameteres for model 3 at epoch 14  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.273362874984741 seconds

Loss: 1.0672

Train Accuracy: 61.77%

Test Accuracy: 62.77%

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 1.6766562461853027 seconds

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

total runtime to train this model was 25.643794775009155 seconds

Hyperparameteres for model 4 at epoch 14

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.188666343688965 seconds

Loss: 1.0609

Train Accuracy: 62.03%

Test Accuracy: 61.51%

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: 151.54s (Avg member: 30.31s)

Population Mean Accuracy: 61.05%

Best Member Accuracy: 62.77%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

=====

Epoch 15/70

=====

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

built data in 1.6337010860443115 seconds

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

total runtime to train this model was 25.58342409133911 seconds

Hyperparameteres for model 0 at epoch 15

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8082408905029297 seconds

Loss: 1.0937

Train Accuracy: 61.03%

Test Accuracy: 62.74%

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 1.5889692306518555 seconds

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

total runtime to train this model was 26.175517320632935 seconds

Hyperparameteres for model 1 at epoch 15

lr: 0.0010000000000000002

weight\_decay: 0.02

drop\_path: 0.496791521403641

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3618721961975098 seconds

Loss: 1.2102

Train Accuracy: 56.76%

Test Accuracy: 56.16%

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 1.5675578117370605 seconds

LR changed during epoch: 5.49e-04 -> 5.43e-04

total runtime to train this model was 26.23214077949524 seconds

Hyperparameteres for model 2 at epoch 15

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3339791297912598 seconds

Loss: 1.1034

Train Accuracy: 60.72%

Test Accuracy: 61.03%

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 1.5694243907928467 seconds

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

total runtime to train this model was 25.916330814361572 seconds

Hyperparameteres for model 3 at epoch 15

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3631575107574463 seconds

Loss: 1.0357

Train Accuracy: 63.10%

Test Accuracy: 63.18%

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 1.6547472476959229 seconds

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

total runtime to train this model was 25.9216365814209 seconds

Hyperparameteres for model 4 at epoch 15

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.160236358642578 seconds

Loss: 1.0358

Train Accuracy: 62.95%

Test Accuracy: 63.78%

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: [63.78]

Bottom performers: [56.16]

Member 1: weight\_decay changed from 0.02 to 0.022093689610193257

Member 1: drop\_path changed from 0.496791521403641 to 0.5

Member 1 copied from 4

LR=1.00e-03, WD=0.022, DropPath=0.500, Warmup=5 epochs, Batch=256

=====

Epoch 15 Summary:

=====

Time: 152.17s (Avg member: 30.43s)

Population Mean Accuracy: 61.38%

Best Member Accuracy: 63.78%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

=====

Epoch 16/70

=====

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

built data in 1.6458373069763184 seconds

LR changed during epoch: 6.39e-04 -> 6.31e-04

total runtime to train this model was 26.23675560951233 seconds

Hyperparameteres for model 0 at epoch 16

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.5765109062194824 seconds

Loss: 1.0543

Train Accuracy: 62.51%

Test Accuracy: 63.75%

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 1.5748176574707031 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 26.185375928878784 seconds

Hyperparameteres for model 1 at epoch 16

lr: 0.0010000000000000002

weight\_decay: 0.022093689610193257

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2706034183502197 seconds

Loss: 1.0723

Train Accuracy: 61.49%

Test Accuracy: 63.60%

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 1.5799064636230469 seconds

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

total runtime to train this model was 26.069209337234497 seconds

Hyperparameteres for model 2 at epoch 16

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3219797611236572 seconds

Loss: 1.0685  
Train Accuracy: 61.76%  
Test Accuracy: 63.23%

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 1.5675404071807861 seconds  
LR changed during epoch: 5.50e-04 -> 5.43e-04  
total runtime to train this model was 26.382171630859375 seconds  
Hyperparameteres for model 3 at epoch 16  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3215136528015137 seconds

Loss: 1.0007  
Train Accuracy: 64.59%  
Test Accuracy: 64.14%

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 1.700272560119629 seconds  
LR changed during epoch: 2.64e-04 -> 2.61e-04  
total runtime to train this model was 25.8234281539917 seconds  
Hyperparameteres for model 4 at epoch 16  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.620042562484741 seconds

Loss: 1.0080  
Train Accuracy: 63.90%  
Test Accuracy: 63.93%

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: 153.14s (Avg member: 30.63s)  
Population Mean Accuracy: 63.73%  
Best Member Accuracy: 64.14%  
Mean Batch Size: 256

Mean Learning Rate: 6.24e-04  
Mean Weight Decay: 0.082

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5915298461914062 seconds  
LR changed during epoch: 6.31e-04 -> 6.23e-04  
total runtime to train this model was 25.788291692733765 seconds  
Hyperparameteres for model 0 at epoch 17  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.30635929107666 seconds  
Loss: 1.0280  
Train Accuracy: 63.40%  
Test Accuracy: 63.99%  
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 1.5725224018096924 seconds  
LR changed during epoch: 2.01e-04 -> 4.01e-04  
total runtime to train this model was 25.756119966506958 seconds  
Hyperparameteres for model 1 at epoch 17  
lr: 0.0010000000000000002

weight\_decay: 0.022093689610193257

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2951772212982178 seconds  
Loss: 1.1079  
Train Accuracy: 60.44%  
Test Accuracy: 62.77%  
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 1.5709145069122314 seconds  
LR changed during epoch: 5.36e-04 -> 5.29e-04  
total runtime to train this model was 25.682820320129395 seconds  
Hyperparameteres for model 2 at epoch 17  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.376976251602173 seconds

Loss: 1.0373

Train Accuracy: 62.98%

Test Accuracy: 64.02%

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 1.5668113231658936 seconds

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

total runtime to train this model was 25.80858874320984 seconds

Hyperparameteres for model 3 at epoch 17

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3073041439056396 seconds

Loss: 0.9695

Train Accuracy: 65.52%

Test Accuracy: 65.31%

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 1.6150758266448975 seconds

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

total runtime to train this model was 25.362993955612183 seconds

Hyperparameteres for model 4 at epoch 17

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.531956672668457 seconds

Loss: 0.9862

Train Accuracy: 64.74%

Test Accuracy: 65.13%

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: 149.35s (Avg member: 29.87s)
Population Mean Accuracy: 64.24%
Best Member Accuracy: 65.31%
Mean Batch Size: 256
Mean Learning Rate: 6.24e-04
Mean Weight Decay: 0.082
```

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

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.8404250144958496 seconds
LR changed during epoch: 6.23e-04 -> 6.14e-04
total runtime to train this model was 24.893032550811768 seconds
Hyperparameteres for model 0 at epoch 18
lr: 0.0006782416715044019
```

```
weight_decay: 0.14890877193751148
```

```
drop_path: 0.25806391713579274
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 3.3776304721832275 seconds
```

```
Loss: 0.9963
Train Accuracy: 64.48%
Test Accuracy: 64.02%
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 1.586646556854248 seconds
LR changed during epoch: 4.01e-04 -> 6.01e-04
total runtime to train this model was 25.880388736724854 seconds
Hyperparameteres for model 1 at epoch 18
lr: 0.0010000000000000002
```

```
weight_decay: 0.022093689610193257
```

```
drop_path: 0.5
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.3322901725769043 seconds
```

```
Loss: 1.1594
Train Accuracy: 58.46%
Test Accuracy: 59.72%
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 1.5863327980041504 seconds
LR changed during epoch: 5.29e-04 -> 5.21e-04
total runtime to train this model was 25.871023178100586 seconds
```

Hyperparameteres for model 2 at epoch 18

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3537659645080566 seconds

Loss: 1.0070

Train Accuracy: 64.04%

Test Accuracy: 63.50%

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 1.5693836212158203 seconds

LR changed during epoch: 5.36e-04 -> 5.28e-04

total runtime to train this model was 26.455508708953857 seconds

Hyperparameteres for model 3 at epoch 18

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3720407485961914 seconds

Loss: 0.9517

Train Accuracy: 66.19%

Test Accuracy: 66.59%

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 1.6259822845458984 seconds

LR changed during epoch: 2.58e-04 -> 2.54e-04

total runtime to train this model was 25.96298313140869 seconds

Hyperparameteres for model 4 at epoch 18

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.628342866897583 seconds

Loss: 0.9548

Train Accuracy: 66.05%

Test Accuracy: 66.67%

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: 151.57s (Avg member: 30.31s)

Population Mean Accuracy: 64.10%

Best Member Accuracy: 66.67%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.082

=====

Epoch 19/70

=====

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

built data in 1.782918930053711 seconds

LR changed during epoch: 6.14e-04 -> 6.04e-04

total runtime to train this model was 25.02736735343933 seconds

Hyperparameteres for model 0 at epoch 19

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.4290077686309814 seconds

Loss: 0.9795

Train Accuracy: 65.12%

Test Accuracy: 65.74%

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 1.577221393585205 seconds

LR changed during epoch: 6.01e-04 -> 8.01e-04

total runtime to train this model was 26.278847217559814 seconds

Hyperparameteres for model 1 at epoch 19

lr: 0.0010000000000000002

weight\_decay: 0.022093689610193257

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.315268039703369 seconds

Loss: 1.1925

Train Accuracy: 57.21%

Test Accuracy: 60.37%

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 1.5753116607666016 seconds  
LR changed during epoch: 5.21e-04 -> 5.13e-04  
total runtime to train this model was 25.506983041763306 seconds  
Hyperparameteres for model 2 at epoch 19  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2583398818969727 seconds  
Loss: 0.9961  
Train Accuracy: 64.40%  
Test Accuracy: 66.19%  
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 1.5743939876556396 seconds  
LR changed during epoch: 5.28e-04 -> 5.19e-04  
total runtime to train this model was 25.714659929275513 seconds  
Hyperparameteres for model 3 at epoch 19  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3887157440185547 seconds  
Loss: 0.9286  
Train Accuracy: 66.74%  
Test Accuracy: 65.65%  
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 1.5651071071624756 seconds  
LR changed during epoch: 2.54e-04 -> 2.50e-04  
total runtime to train this model was 25.803053855895996 seconds  
Hyperparameteres for model 4 at epoch 19  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3550970554351807 seconds

Loss: 0.9352  
Train Accuracy: 66.75%  
Test Accuracy: 65.37%  
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: 150.38s (Avg member: 30.08s)  
Population Mean Accuracy: 64.66%  
Best Member Accuracy: 66.19%  
Mean Batch Size: 256  
Mean Learning Rate: 6.24e-04  
Mean Weight Decay: 0.082

=====  
Epoch 20/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7972214221954346 seconds  
LR changed during epoch: 6.04e-04 -> 5.93e-04  
total runtime to train this model was 25.448217153549194 seconds  
Hyperparameteres for model 0 at epoch 20  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.525665283203125 seconds

Loss: 0.9645  
Train Accuracy: 65.86%  
Test Accuracy: 65.65%  
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 1.5799367427825928 seconds  
LR changed during epoch: 8.01e-04 -> 1.00e-03  
total runtime to train this model was 25.93792724609375 seconds  
Hyperparameteres for model 1 at epoch 20  
lr: 0.001000000000000002

weight\_decay: 0.022093689610193257

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3034253120422363 seconds

Loss: 1.2123  
Train Accuracy: 56.26%  
Test Accuracy: 59.10%  
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 1.5721023082733154 seconds  
LR changed during epoch: 5.13e-04 -> 5.04e-04  
total runtime to train this model was 25.615533351898193 seconds  
Hyperparameteres for model 2 at epoch 20  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3504438400268555 seconds  
Loss: 0.9673  
Train Accuracy: 65.86%  
Test Accuracy: 66.15%  
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 1.5687768459320068 seconds  
LR changed during epoch: 5.19e-04 -> 5.10e-04  
total runtime to train this model was 25.50644540786743 seconds  
Hyperparameteres for model 3 at epoch 20  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3780710697174072 seconds  
Loss: 0.9027  
Train Accuracy: 67.86%  
Test Accuracy: 67.32%  
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 1.578188180923462 seconds  
LR changed during epoch: 2.50e-04 -> 2.45e-04  
total runtime to train this model was 25.176188945770264 seconds  
Hyperparameteres for model 4 at epoch 20  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.342576742172241 seconds

Loss: 0.9141

Train Accuracy: 67.35%

Test Accuracy: 66.91%

Google Drive already mounted.

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

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

==== PBT Exploit & Explore ===

Top performers: [67.32]

Bottom performers: [59.1]

Member 1: lr changed from 0.001000000000000002 to 0.0007311898711548193

Member 1: weight\_decay changed from 0.022093689610193257 to 0.02

Member 1: drop\_path changed from 0.5 to 0.421920582310497

Member 1 copied from 3

LR=7.31e-04, WD=0.020, DropPath=0.422, Warmup=5 epochs, Batch=256

=====

Epoch 20 Summary:

=====

Time: 149.93s (Avg member: 29.98s)

Population Mean Accuracy: 65.03%

Best Member Accuracy: 67.32%

Mean Batch Size: 256

Mean Learning Rate: 5.70e-04

Mean Weight Decay: 0.082

=====

Epoch 21/70

=====

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

built data in 1.58939790725708 seconds

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

total runtime to train this model was 25.339482307434082 seconds

Hyperparameteres for model 0 at epoch 21

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.565739631652832 seconds

Loss: 0.9439

Train Accuracy: 66.50%

Test Accuracy: 66.83%

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 1.8339052200317383 seconds  
LR changed during epoch: 7.46e-07 -> 1.47e-04  
total runtime to train this model was 24.192359685897827 seconds  
Hyperparameteres for model 1 at epoch 21  
lr: 0.0007311898711548193

weight\_decay: 0.02  
drop\_path: 0.421920582310497  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4641878604888916 seconds

Loss: 0.8915  
Train Accuracy: 68.23%  
Test Accuracy: 70.90%  
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 1.5925157070159912 seconds  
LR changed during epoch: 5.04e-04 -> 4.94e-04  
total runtime to train this model was 25.528340101242065 seconds  
Hyperparameteres for model 2 at epoch 21  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5030529499053955 seconds  
Loss: 0.9479  
Train Accuracy: 66.24%  
Test Accuracy: 67.30%  
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 1.5822536945343018 seconds  
LR changed during epoch: 5.10e-04 -> 5.00e-04  
total runtime to train this model was 25.78273916244507 seconds  
Hyperparameteres for model 3 at epoch 21  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2637178897857666 seconds

Loss: 0.8731  
Train Accuracy: 69.02%  
Test Accuracy: 67.54%  
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 1.58199143409729 seconds  
LR changed during epoch: 2.45e-04 -> 2.41e-04  
total runtime to train this model was 25.553212642669678 seconds  
Hyperparameteres for model 4 at epoch 21  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.29249906539917 seconds  
Loss: 0.8914  
Train Accuracy: 68.35%  
Test Accuracy: 67.57%  
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: 149.03s (Avg member: 29.81s)  
Population Mean Accuracy: 68.03%  
Best Member Accuracy: 70.90%  
Mean Batch Size: 256  
Mean Learning Rate: 5.70e-04  
Mean Weight Decay: 0.082

=====  
Epoch 22/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5915381908416748 seconds  
LR changed during epoch: 5.82e-04 -> 5.70e-04  
total runtime to train this model was 26.417835474014282 seconds  
Hyperparameteres for model 0 at epoch 22  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148  
drop\_path: 0.25806391713579274  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.399048328399658 seconds  
Loss: 0.9162  
Train Accuracy: 67.39%

Test Accuracy: 66.96%  
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 1.7409019470214844 seconds  
LR changed during epoch: 1.47e-04 -> 2.93e-04  
total runtime to train this model was 25.250693559646606 seconds  
Hyperparameteres for model 1 at epoch 22  
lr: 0.0007311898711548193

weight\_decay: 0.02  
drop\_path: 0.421920582310497  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9801344871520996 seconds  
Loss: 0.8733  
Train Accuracy: 69.01%  
Test Accuracy: 70.35%  
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 1.7129967212677002 seconds  
LR changed during epoch: 4.94e-04 -> 4.84e-04  
total runtime to train this model was 24.774206161499023 seconds  
Hyperparameteres for model 2 at epoch 22  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0302162170410156 seconds  
Loss: 0.9360  
Train Accuracy: 66.69%  
Test Accuracy: 67.56%  
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 1.5805912017822266 seconds  
LR changed during epoch: 5.00e-04 -> 4.90e-04  
total runtime to train this model was 25.686107873916626 seconds  
Hyperparameteres for model 3 at epoch 22  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2909011840820312 seconds

Loss: 0.8583

Train Accuracy: 69.52%

Test Accuracy: 69.25%

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 1.5898151397705078 seconds

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

total runtime to train this model was 26.0127854347229 seconds

Hyperparameteres for model 4 at epoch 22

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.29372501373291 seconds

Loss: 0.8688

Train Accuracy: 69.20%

Test Accuracy: 68.18%

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: 150.59s (Avg member: 30.12s)

Population Mean Accuracy: 68.46%

Best Member Accuracy: 70.35%

Mean Batch Size: 256

Mean Learning Rate: 5.70e-04

Mean Weight Decay: 0.082

=====

Epoch 23/70

=====

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

built data in 1.5764148235321045 seconds

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

total runtime to train this model was 25.850680351257324 seconds

Hyperparameteres for model 0 at epoch 23

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2881128787994385 seconds

Loss: 0.9046

Train Accuracy: 68.10%

Test Accuracy: 68.28%

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 1.5905201435089111 seconds

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

total runtime to train this model was 25.343816995620728 seconds

Hyperparameteres for model 1 at epoch 23

lr: 0.0007311898711548193

weight\_decay: 0.02

drop\_path: 0.421920582310497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2712721824645996 seconds

Loss: 0.8969

Train Accuracy: 68.10%

Test Accuracy: 69.20%

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 1.778616189956665 seconds

LR changed during epoch: 4.84e-04 -> 4.74e-04

total runtime to train this model was 24.956634759902954 seconds

Hyperparameteres for model 2 at epoch 23

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.782630443572998 seconds

Loss: 0.9105

Train Accuracy: 67.61%

Test Accuracy: 68.75%

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 1.8239233493804932 seconds

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

total runtime to train this model was 24.661860942840576 seconds

Hyperparameteres for model 3 at epoch 23

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1697990894317627 seconds

Loss: 0.8303

Train Accuracy: 70.64%

Test Accuracy: 70.45%

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 1.5810482501983643 seconds

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

total runtime to train this model was 25.84614610671997 seconds

Hyperparameteres for model 4 at epoch 23

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3880257606506348 seconds

Loss: 0.8474

Train Accuracy: 69.96%

Test Accuracy: 68.66%

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: 149.13s (Avg member: 29.83s)

Population Mean Accuracy: 69.07%

Best Member Accuracy: 70.45%

Mean Batch Size: 256

Mean Learning Rate: 5.70e-04

Mean Weight Decay: 0.082

=====

Epoch 24/70

=====

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

built data in 1.621375322341919 seconds

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

total runtime to train this model was 25.69529438018799 seconds

Hyperparameteres for model 0 at epoch 24

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.240151882171631 seconds

Loss: 0.8877

Train Accuracy: 68.57%

Test Accuracy: 68.89%

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 1.5772089958190918 seconds

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

total runtime to train this model was 25.91907238960266 seconds

Hyperparameteres for model 1 at epoch 24

lr: 0.0007311898711548193

weight\_decay: 0.02

drop\_path: 0.421920582310497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.269310474395752 seconds

Loss: 0.9240

Train Accuracy: 67.21%

Test Accuracy: 68.58%

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 1.5849940776824951 seconds

LR changed during epoch: 4.74e-04 -> 4.63e-04

total runtime to train this model was 26.16295313835144 seconds

Hyperparameteres for model 2 at epoch 24

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3835039138793945 seconds

Loss: 0.8887

Train Accuracy: 68.33%

Test Accuracy: 68.19%

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 1.829219102859497 seconds

LR changed during epoch: 4.80e-04 -> 4.69e-04  
total runtime to train this model was 25.185091018676758 seconds  
Hyperparameteres for model 3 at epoch 24  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.407517433166504 seconds

Loss: 0.8172  
Train Accuracy: 70.92%  
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 1.6940298080444336 seconds  
LR changed during epoch: 2.31e-04 -> 2.26e-04  
total runtime to train this model was 26.193971872329712 seconds  
Hyperparameteres for model 4 at epoch 24  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3687517642974854 seconds  
Loss: 0.8229  
Train Accuracy: 70.85%  
Test Accuracy: 69.37%

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: 151.46s (Avg member: 30.29s)  
Population Mean Accuracy: 69.03%  
Best Member Accuracy: 70.12%  
Mean Batch Size: 256  
Mean Learning Rate: 5.70e-04  
Mean Weight Decay: 0.082

=====

Epoch 25/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.581913709640503 seconds  
LR changed during epoch: 5.45e-04 -> 5.32e-04  
total runtime to train this model was 25.959486961364746 seconds

Hyperparameteres for model 0 at epoch 25

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.37540602684021 seconds

Loss: 0.8622

Train Accuracy: 69.23%

Test Accuracy: 69.09%

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 1.6197941303253174 seconds

LR changed during epoch: 5.86e-04 -> 7.31e-04

total runtime to train this model was 25.715237855911255 seconds

Hyperparameteres for model 1 at epoch 25

lr: 0.0007311898711548193

weight\_decay: 0.02

drop\_path: 0.421920582310497

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3293447494506836 seconds

Loss: 0.9416

Train Accuracy: 66.58%

Test Accuracy: 66.72%

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 1.5716326236724854 seconds

LR changed during epoch: 4.63e-04 -> 4.52e-04

total runtime to train this model was 25.784268379211426 seconds

Hyperparameteres for model 2 at epoch 25

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2733585834503174 seconds

Loss: 0.8729

Train Accuracy: 69.04%

Test Accuracy: 69.54%

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 1.713646411895752 seconds

LR changed during epoch: 4.69e-04 -> 4.57e-04

total runtime to train this model was 25.151304006576538 seconds

Hyperparameteres for model 3 at epoch 25

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.9095377922058105 seconds

Loss: 0.7971

Train Accuracy: 71.77%

Test Accuracy: 70.94%

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 1.7980685234069824 seconds

LR changed during epoch: 2.26e-04 -> 2.20e-04

total runtime to train this model was 25.380096673965454 seconds

Hyperparameteres for model 4 at epoch 25

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.9989733695983887 seconds

Loss: 0.8084

Train Accuracy: 71.35%

Test Accuracy: 70.69%

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: [70.94]

Bottom performers: [66.72]

Member 1: lr changed from 0.0007311898711548193 to 0.00046980901401525734

Member 1: weight\_decay changed from 0.02 to 0.026373913516779927

Member 1: drop\_path changed from 0.421920582310497 to 0.4570211656764162

Member 1 copied from 3

LR=4.70e-04, WD=0.026, DropPath=0.457, Warmup=5 epochs, Batch=256

=====

Epoch 25 Summary:

```
=====
Time: 150.41s (Avg member: 30.08s)
Population Mean Accuracy: 69.40%
Best Member Accuracy: 70.94%
Mean Batch Size: 256
Mean Learning Rate: 5.18e-04
Mean Weight Decay: 0.083
```

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

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.620612382888794 seconds
LR changed during epoch: 5.32e-04 -> 5.18e-04
total runtime to train this model was 26.28330659866333 seconds
Hyperparameteres for model 0 at epoch 26
lr: 0.0006782416715044019
```

```
weight_decay: 0.14890877193751148
```

```
drop_path: 0.25806391713579274
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 3.268730401992798 seconds
```

```
Loss: 0.8455
Train Accuracy: 70.14%
Test Accuracy: 69.63%
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 1.7505626678466797 seconds
LR changed during epoch: 4.79e-07 -> 9.44e-05
total runtime to train this model was 26.27316164970398 seconds
Hyperparameteres for model 1 at epoch 26
lr: 0.00046980901401525734
```

```
weight_decay: 0.026373913516779927
```

```
drop_path: 0.4570211656764162
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.3018743991851807 seconds
```

```
Loss: 0.8017
Train Accuracy: 71.73%
Test Accuracy: 73.73%
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 1.611708164215088 seconds
LR changed during epoch: 4.52e-04 -> 4.40e-04
total runtime to train this model was 26.07631278038025 seconds
```

Hyperparameteres for model 2 at epoch 26

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.487277030944824 seconds

Loss: 0.8561

Train Accuracy: 69.60%

Test Accuracy: 70.32%

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 1.7757713794708252 seconds

LR changed during epoch: 4.57e-04 -> 4.46e-04

total runtime to train this model was 25.79873490333557 seconds

Hyperparameteres for model 3 at epoch 26

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.200406789779663 seconds

Loss: 0.7750

Train Accuracy: 72.54%

Test Accuracy: 71.25%

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 1.5904464721679688 seconds

LR changed during epoch: 2.20e-04 -> 2.14e-04

total runtime to train this model was 26.445116996765137 seconds

Hyperparameteres for model 4 at epoch 26

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.424696445465088 seconds

Loss: 0.7831

Train Accuracy: 72.15%

Test Accuracy: 70.03%

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: 154.21s (Avg member: 30.84s)

Population Mean Accuracy: 70.99%

Best Member Accuracy: 73.73%

Mean Batch Size: 256

Mean Learning Rate: 5.18e-04

Mean Weight Decay: 0.083

=====

Epoch 27/70

=====

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

built data in 1.6038193702697754 seconds

LR changed during epoch: 5.18e-04 -> 5.04e-04

total runtime to train this model was 26.492316246032715 seconds

Hyperparameteres for model 0 at epoch 27

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3618557453155518 seconds

Loss: 0.8311

Train Accuracy: 70.59%

Test Accuracy: 69.49%

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 1.6142961978912354 seconds

LR changed during epoch: 9.44e-05 -> 1.88e-04

total runtime to train this model was 25.950393199920654 seconds

Hyperparameteres for model 1 at epoch 27

lr: 0.00046980901401525734

weight\_decay: 0.026373913516779927

drop\_path: 0.4570211656764162

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3296918869018555 seconds

Loss: 0.7670

Train Accuracy: 72.94%

Test Accuracy: 73.97%

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 1.7296209335327148 seconds
LR changed during epoch: 4.40e-04 -> 4.28e-04
total runtime to train this model was 25.509321689605713 seconds
Hyperparameteres for model 2 at epoch 27
lr: 0.0005761935801264503

weight_decay: 0.1354380062306811
drop_path: 0.4387702458061118
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 3.061046838760376 seconds
Loss: 0.8421
Train Accuracy: 70.02%
Test Accuracy: 70.16%
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 1.7769207954406738 seconds
LR changed during epoch: 4.46e-04 -> 4.34e-04
total runtime to train this model was 25.23169779777527 seconds
Hyperparameteres for model 3 at epoch 27
lr: 0.0005832876162076942

weight_decay: 0.06881561531524874
drop_path: 0.08323777141836364
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.94926381111145 seconds
Loss: 0.7563
Train Accuracy: 73.17%
Test Accuracy: 72.03%
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 1.606801986694336 seconds
LR changed during epoch: 2.14e-04 -> 2.09e-04
total runtime to train this model was 26.03067374229431 seconds
Hyperparameteres for model 4 at epoch 27
lr: 0.0002804193304595399

weight_decay: 0.03654601866836071
drop_path: 0.021637958490999254
warmup_epochs: 5
batch_size: 256
```

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3697125911712646 seconds

Loss: 0.7699  
Train Accuracy: 72.62%  
Test Accuracy: 71.54%

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: 151.84s (Avg member: 30.37s)  
Population Mean Accuracy: 71.44%  
Best Member Accuracy: 73.97%  
Mean Batch Size: 256  
Mean Learning Rate: 5.18e-04  
Mean Weight Decay: 0.083

=====  
Epoch 28/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6903014183044434 seconds  
LR changed during epoch: 5.04e-04 -> 4.90e-04  
total runtime to train this model was 26.42666983604431 seconds  
Hyperparameteres for model 0 at epoch 28  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.390829563140869 seconds

Loss: 0.8131  
Train Accuracy: 71.26%  
Test Accuracy: 70.07%

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 1.6024951934814453 seconds  
LR changed during epoch: 1.88e-04 -> 2.82e-04  
total runtime to train this model was 26.68630886077881 seconds  
Hyperparameteres for model 1 at epoch 28  
lr: 0.00046980901401525734

weight\_decay: 0.026373913516779927

drop\_path: 0.4570211656764162

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.398423671722412 seconds

Loss: 0.7824  
Train Accuracy: 72.14%  
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 1.7658679485321045 seconds  
LR changed during epoch: 4.28e-04 -> 4.16e-04  
total runtime to train this model was 26.351417779922485 seconds  
Hyperparameteres for model 2 at epoch 28  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5921263694763184 seconds  
Loss: 0.8226  
Train Accuracy: 70.81%  
Test Accuracy: 71.09%  
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 1.5943546295166016 seconds  
LR changed during epoch: 4.34e-04 -> 4.21e-04  
total runtime to train this model was 26.755678415298462 seconds  
Hyperparameteres for model 3 at epoch 28  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3452649116516113 seconds  
Loss: 0.7330  
Train Accuracy: 73.93%  
Test Accuracy: 71.85%  
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 1.617513656616211 seconds  
LR changed during epoch: 2.09e-04 -> 2.03e-04  
total runtime to train this model was 26.47518301010132 seconds  
Hyperparameteres for model 4 at epoch 28  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.315382480621338 seconds

Loss: 0.7529

Train Accuracy: 73.31%

Test Accuracy: 71.21%

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: 155.29s (Avg member: 31.06s)

Population Mean Accuracy: 71.42%

Best Member Accuracy: 72.86%

Mean Batch Size: 256

Mean Learning Rate: 5.18e-04

Mean Weight Decay: 0.083

=====

Epoch 29/70

=====

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

built data in 1.6314358711242676 seconds

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

total runtime to train this model was 26.48566222190857 seconds

Hyperparameteres for model 0 at epoch 29

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2745354175567627 seconds

Loss: 0.7998

Train Accuracy: 71.91%

Test Accuracy: 71.34%

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 1.739746332168579 seconds

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

total runtime to train this model was 26.073272466659546 seconds

Hyperparameteres for model 1 at epoch 29

lr: 0.00046980901401525734

weight\_decay: 0.026373913516779927

drop\_path: 0.4570211656764162

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2814345359802246 seconds

Loss: 0.7965

Train Accuracy: 71.64%

Test Accuracy: 71.85%

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 1.6933164596557617 seconds

LR changed during epoch: 4.16e-04 -> 4.03e-04

total runtime to train this model was 25.821515321731567 seconds

Hyperparameteres for model 2 at epoch 29

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6456077098846436 seconds

Loss: 0.8067

Train Accuracy: 71.45%

Test Accuracy: 71.85%

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 1.6649730205535889 seconds

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

total runtime to train this model was 26.129711866378784 seconds

Hyperparameteres for model 3 at epoch 29

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.258521556854248 seconds

Loss: 0.7175

Train Accuracy: 74.67%

Test Accuracy: 72.59%

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 1.5745151042938232 seconds

LR changed during epoch: 2.03e-04 -> 1.96e-04

total runtime to train this model was 26.116026401519775 seconds

Hyperparameteres for model 4 at epoch 29

lr: 0.0002804193304595399  
weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2783520221710205 seconds

Loss: 0.7370  
Train Accuracy: 73.84%  
Test Accuracy: 71.57%

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: 152.96s (Avg member: 30.59s)  
Population Mean Accuracy: 71.84%  
Best Member Accuracy: 72.59%  
Mean Batch Size: 256  
Mean Learning Rate: 5.18e-04  
Mean Weight Decay: 0.083

=====  
Epoch 30/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.619138479232788 seconds  
LR changed during epoch: 4.75e-04 -> 4.60e-04  
total runtime to train this model was 26.549773931503296 seconds  
Hyperparameteres for model 0 at epoch 30  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4099183082580566 seconds

Loss: 0.7744  
Train Accuracy: 72.50%  
Test Accuracy: 70.85%

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 1.7147588729858398 seconds  
LR changed during epoch: 3.76e-04 -> 4.70e-04  
total runtime to train this model was 26.826027393341064 seconds  
Hyperparameteres for model 1 at epoch 30  
lr: 0.00046980901401525734

weight\_decay: 0.026373913516779927

drop\_path: 0.4570211656764162

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.593841075897217 seconds

Loss: 0.8149

Train Accuracy: 70.93%

Test Accuracy: 70.80%

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 1.6073634624481201 seconds

LR changed during epoch: 4.03e-04 -> 3.91e-04

total runtime to train this model was 26.664466381072998 seconds

Hyperparameteres for model 2 at epoch 30

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.300626039505005 seconds

Loss: 0.7991

Train Accuracy: 71.93%

Test Accuracy: 71.21%

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 1.5785610675811768 seconds

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

total runtime to train this model was 26.334487915039062 seconds

Hyperparameteres for model 3 at epoch 30

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2821147441864014 seconds

Loss: 0.6998

Train Accuracy: 75.21%

Test Accuracy: 73.58%

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 1.6621911525726318 seconds  
LR changed during epoch: 1.96e-04 -> 1.90e-04  
total runtime to train this model was 26.367870330810547 seconds  
Hyperparameteres for model 4 at epoch 30  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3238916397094727 seconds

Loss: 0.7184  
Train Accuracy: 74.70%  
Test Accuracy: 72.78%

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: [73.58]

Bottom performers: [70.8]

Member 1: lr changed from 0.00046980901401525734 to 0.0006799703583326811  
Member 1: weight\_decay changed from 0.026373913516779927 to 0.039603148361286956

Member 1: drop\_path changed from 0.4570211656764162 to 0.5

Member 1 copied from 3

LR=6.80e-04, WD=0.040, DropPath=0.500, Warmup=5 epochs, Batch=256

=====  
Epoch 30 Summary:  
=====

Time: 155.06s (Avg member: 31.01s)

Population Mean Accuracy: 71.84%

Best Member Accuracy: 73.58%

Mean Batch Size: 256

Mean Learning Rate: 5.60e-04

Mean Weight Decay: 0.086

=====  
Epoch 31/70  
=====

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

built data in 1.5930593013763428 seconds

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

total runtime to train this model was 25.78684902191162 seconds

Hyperparameteres for model 0 at epoch 31

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4007012844085693 seconds

Loss: 0.7644

Train Accuracy: 72.85%

Test Accuracy: 72.40%

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 1.8326771259307861 seconds

LR changed during epoch: 6.94e-07 -> 1.37e-04

total runtime to train this model was 24.82460331916809 seconds

Hyperparameteres for model 1 at epoch 31

lr: 0.0006799703583326811

weight\_decay: 0.039603148361286956

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.3607919216156006 seconds

Loss: 0.7189

Train Accuracy: 74.69%

Test Accuracy: 75.41%

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 1.5712316036224365 seconds

LR changed during epoch: 3.91e-04 -> 3.77e-04

total runtime to train this model was 25.14414119720459 seconds

Hyperparameteres for model 2 at epoch 31

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.594731092453003 seconds

Loss: 0.7795

Train Accuracy: 72.56%

Test Accuracy: 72.68%

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 1.6363184452056885 seconds

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

total runtime to train this model was 25.596543073654175 seconds

Hyperparameteres for model 3 at epoch 31

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2578063011169434 seconds

Loss: 0.6816

Train Accuracy: 75.91%

Test Accuracy: 73.43%

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 1.59071946144104 seconds

LR changed during epoch: 1.90e-04 -> 1.84e-04

total runtime to train this model was 26.144554376602173 seconds

Hyperparameteres for model 4 at epoch 31

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2979397773742676 seconds

Loss: 0.7042

Train Accuracy: 75.15%

Test Accuracy: 73.03%

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: 149.93s (Avg member: 29.99s)

Population Mean Accuracy: 73.39%

Best Member Accuracy: 75.41%

Mean Batch Size: 256

Mean Learning Rate: 5.60e-04

Mean Weight Decay: 0.086

=====

Epoch 32/70

=====

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

built data in 1.6199066638946533 seconds

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

total runtime to train this model was 25.857564449310303 seconds

Hyperparameteres for model 0 at epoch 32

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2267966270446777 seconds

Loss: 0.7533

Train Accuracy: 73.64%

Test Accuracy: 72.65%

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 1.6722593307495117 seconds

LR changed during epoch: 1.37e-04 -> 2.73e-04

total runtime to train this model was 25.454214334487915 seconds

Hyperparameteres for model 1 at epoch 32

lr: 0.0006799703583326811

weight\_decay: 0.039603148361286956

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8541042804718018 seconds

Loss: 0.7113

Train Accuracy: 74.88%

Test Accuracy: 74.69%

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 1.7787120342254639 seconds

LR changed during epoch: 3.77e-04 -> 3.64e-04

total runtime to train this model was 25.075955152511597 seconds

Hyperparameteres for model 2 at epoch 32

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.160473346710205 seconds

Loss: 0.7702

Train Accuracy: 72.74%

Test Accuracy: 73.81%

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 1.5689988136291504 seconds

LR changed during epoch: 3.82e-04 -> 3.69e-04  
total runtime to train this model was 25.761472940444946 seconds  
Hyperparameteres for model 3 at epoch 32  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2893614768981934 seconds

Loss: 0.6614  
Train Accuracy: 76.43%  
Test Accuracy: 74.67%

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 1.5730695724487305 seconds  
LR changed during epoch: 1.84e-04 -> 1.77e-04  
total runtime to train this model was 25.412723302841187 seconds  
Hyperparameteres for model 4 at epoch 32  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2689425945281982 seconds

Loss: 0.6889  
Train Accuracy: 75.56%  
Test Accuracy: 73.15%

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: 149.79s (Avg member: 29.96s)  
Population Mean Accuracy: 73.79%  
Best Member Accuracy: 74.69%  
Mean Batch Size: 256  
Mean Learning Rate: 5.60e-04  
Mean Weight Decay: 0.086

=====

Epoch 33/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.587096929550171 seconds  
LR changed during epoch: 4.28e-04 -> 4.13e-04  
total runtime to train this model was 25.46274733543396 seconds

Hyperparameteres for model 0 at epoch 33

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2904052734375 seconds

Loss: 0.7393

Train Accuracy: 73.74%

Test Accuracy: 73.27%

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 1.5900039672851562 seconds

LR changed during epoch: 2.73e-04 -> 4.09e-04

total runtime to train this model was 25.711616277694702 seconds

Hyperparameteres for model 1 at epoch 33

lr: 0.0006799703583326811

weight\_decay: 0.039603148361286956

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2753548622131348 seconds

Loss: 0.7441

Train Accuracy: 73.65%

Test Accuracy: 73.90%

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 1.6633362770080566 seconds

LR changed during epoch: 3.64e-04 -> 3.51e-04

total runtime to train this model was 25.603179931640625 seconds

Hyperparameteres for model 2 at epoch 33

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.0992469787597656 seconds

Loss: 0.7509

Train Accuracy: 73.36%

Test Accuracy: 72.87%

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 1.746532678604126 seconds

LR changed during epoch: 3.69e-04 -> 3.55e-04

total runtime to train this model was 26.04674744606018 seconds

Hyperparameteres for model 3 at epoch 33

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.8645691871643066 seconds

Loss: 0.6453

Train Accuracy: 77.09%

Test Accuracy: 74.56%

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 1.5683698654174805 seconds

LR changed during epoch: 1.77e-04 -> 1.71e-04

total runtime to train this model was 26.417914152145386 seconds

Hyperparameteres for model 4 at epoch 33

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3529300689697266 seconds

Loss: 0.6706

Train Accuracy: 76.20%

Test Accuracy: 73.80%

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: 151.52s (Avg member: 30.30s)

Population Mean Accuracy: 73.68%

Best Member Accuracy: 74.56%

Mean Batch Size: 256

Mean Learning Rate: 5.60e-04

Mean Weight Decay: 0.086

=====

Epoch 34/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5913140773773193 seconds  
LR changed during epoch: 4.13e-04 -> 3.97e-04  
total runtime to train this model was 26.28277611732483 seconds  
Hyperparameteres for model 0 at epoch 34  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3710415363311768 seconds  
Loss: 0.7181  
Train Accuracy: 74.44%  
Test Accuracy: 73.78%  
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 1.582873821258545 seconds  
LR changed during epoch: 4.09e-04 -> 5.45e-04  
total runtime to train this model was 26.228922843933105 seconds  
Hyperparameteres for model 1 at epoch 34  
lr: 0.0006799703583326811

weight\_decay: 0.039603148361286956

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3686156272888184 seconds  
Loss: 0.7691  
Train Accuracy: 72.72%  
Test Accuracy: 72.19%  
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 1.73695969581604 seconds  
LR changed during epoch: 3.51e-04 -> 3.37e-04  
total runtime to train this model was 25.678759336471558 seconds  
Hyperparameteres for model 2 at epoch 34  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3888580799102783 seconds

Loss: 0.7448

Train Accuracy: 73.80%

Test Accuracy: 72.66%

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 1.6444675922393799 seconds

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

total runtime to train this model was 26.58623504638672 seconds

Hyperparameteres for model 3 at epoch 34

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.373936891555786 seconds

Loss: 0.6280

Train Accuracy: 77.68%

Test Accuracy: 75.23%

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 1.592057466506958 seconds

LR changed during epoch: 1.71e-04 -> 1.64e-04

total runtime to train this model was 26.605416297912598 seconds

Hyperparameteres for model 4 at epoch 34

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2897109985351562 seconds

Loss: 0.6505

Train Accuracy: 77.01%

Test Accuracy: 74.12%

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: 153.59s (Avg member: 30.72s)

Population Mean Accuracy: 73.60%

Best Member Accuracy: 75.23%

Mean Batch Size: 256

Mean Learning Rate: 5.60e-04

Mean Weight Decay: 0.086

=====

Epoch 35/70

=====

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

built data in 1.586160659790039 seconds

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

total runtime to train this model was 26.603681564331055 seconds

Hyperparameteres for model 0 at epoch 35

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.366699695587158 seconds

Loss: 0.7031

Train Accuracy: 75.20%

Test Accuracy: 73.87%

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 1.5864355564117432 seconds

LR changed during epoch: 5.45e-04 -> 6.80e-04

total runtime to train this model was 26.36878252029419 seconds

Hyperparameteres for model 1 at epoch 35

lr: 0.0006799703583326811

weight\_decay: 0.039603148361286956

drop\_path: 0.5

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.510798692703247 seconds

Loss: 0.7991

Train Accuracy: 71.73%

Test Accuracy: 71.87%

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 1.7750682830810547 seconds

LR changed during epoch: 3.37e-04 -> 3.23e-04

total runtime to train this model was 26.01573395729065 seconds

Hyperparameteres for model 2 at epoch 35

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.270597457885742 seconds

Loss: 0.7258

Train Accuracy: 74.27%

Test Accuracy: 74.10%

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 1.6670796871185303 seconds

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

total runtime to train this model was 26.717692136764526 seconds

Hyperparameteres for model 3 at epoch 35

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.279232978820801 seconds

Loss: 0.6069

Train Accuracy: 78.26%

Test Accuracy: 75.59%

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 1.6021602153778076 seconds

LR changed during epoch: 1.64e-04 -> 1.58e-04

total runtime to train this model was 26.227050065994263 seconds

Hyperparameteres for model 4 at epoch 35

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.227537155151367 seconds

Loss: 0.6303

Train Accuracy: 77.58%

Test Accuracy: 73.54%

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: [75.59]

Bottom performers: [71.87]

Member 1: lr changed from 0.0006799703583326811 to 0.000778450943624547

Member 1: weight\_decay changed from 0.039603148361286956 to 0.05440931463188639

Member 1: drop\_path changed from 0.5 to 0.4154231831829875

Member 1 copied from 3

LR=7.78e-04, WD=0.054, DropPath=0.415, Warmup=5 epochs, Batch=256

---

=====  
Epoch 35 Summary:  
=====

Time: 154.05s (Avg member: 30.81s)

Population Mean Accuracy: 73.79%

Best Member Accuracy: 75.59%

Mean Batch Size: 256

Mean Learning Rate: 5.79e-04

Mean Weight Decay: 0.089

---

=====  
Epoch 36/70  
=====

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

built data in 1.6523163318634033 seconds

LR changed during epoch: 3.80e-04 -> 3.64e-04

total runtime to train this model was 25.590958833694458 seconds

Hyperparameteres for model 0 at epoch 36

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.358372449874878 seconds

Loss: 0.6860

Train Accuracy: 75.70%

Test Accuracy: 73.70%

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 1.6109282970428467 seconds

LR changed during epoch: 7.94e-07 -> 1.56e-04

total runtime to train this model was 27.198232889175415 seconds

Hyperparameteres for model 1 at epoch 36

lr: 0.000778450943624547

weight\_decay: 0.05440931463188639

drop\_path: 0.4154231831829875

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.5239291191101074 seconds

Loss: 0.6590  
Train Accuracy: 76.69%  
Test Accuracy: 76.71%  
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 1.642005443572998 seconds  
LR changed during epoch: 3.23e-04 -> 3.09e-04  
total runtime to train this model was 26.706312894821167 seconds  
Hyperparameteres for model 2 at epoch 36  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3233790397644043 seconds  
Loss: 0.7176  
Train Accuracy: 74.50%  
Test Accuracy: 73.98%  
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 1.581519365310669 seconds  
LR changed during epoch: 3.27e-04 -> 3.13e-04  
total runtime to train this model was 26.47062611579895 seconds  
Hyperparameteres for model 3 at epoch 36  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2963078022003174 seconds  
Loss: 0.5922  
Train Accuracy: 79.01%  
Test Accuracy: 75.68%  
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 1.5984680652618408 seconds  
LR changed during epoch: 1.58e-04 -> 1.51e-04  
total runtime to train this model was 26.23441791534424 seconds  
Hyperparameteres for model 4 at epoch 36  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4204905033111572 seconds

Loss: 0.6176

Train Accuracy: 78.20%

Test Accuracy: 74.32%

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: 154.49s (Avg member: 30.90s)

Population Mean Accuracy: 74.88%

Best Member Accuracy: 76.71%

Mean Batch Size: 256

Mean Learning Rate: 5.79e-04

Mean Weight Decay: 0.089

=====

Epoch 37/70

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

built data in 1.6030299663543701 seconds

LR changed during epoch: 3.64e-04 -> 3.48e-04

total runtime to train this model was 26.81982707977295 seconds

Hyperparameteres for model 0 at epoch 37

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6550071239471436 seconds

Loss: 0.6739

Train Accuracy: 76.09%

Test Accuracy: 74.61%

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 1.8425467014312744 seconds

LR changed during epoch: 1.56e-04 -> 3.12e-04

total runtime to train this model was 25.675503492355347 seconds

Hyperparameteres for model 1 at epoch 37

lr: 0.000778450943624547

weight\_decay: 0.05440931463188639

drop\_path: 0.4154231831829875

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1451263427734375 seconds

Loss: 0.6561

Train Accuracy: 76.75%

Test Accuracy: 75.07%

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 1.558917760848999 seconds

LR changed during epoch: 3.09e-04 -> 2.95e-04

total runtime to train this model was 26.39433765411377 seconds

Hyperparameteres for model 2 at epoch 37

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.323101758956909 seconds

Loss: 0.6967

Train Accuracy: 75.56%

Test Accuracy: 74.77%

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 1.5982325077056885 seconds

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

total runtime to train this model was 26.21289587020874 seconds

Hyperparameteres for model 3 at epoch 37

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.304199457168579 seconds

Loss: 0.5791

Train Accuracy: 79.62%

Test Accuracy: 75.77%

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 1.6036827564239502 seconds

LR changed during epoch: 1.51e-04 -> 1.44e-04

total runtime to train this model was 25.88318395614624 seconds

Hyperparameteres for model 4 at epoch 37

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2580032348632812 seconds

Loss: 0.6096

Train Accuracy: 78.28%

Test Accuracy: 75.02%

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: 153.09s (Avg member: 30.62s)

Population Mean Accuracy: 75.05%

Best Member Accuracy: 75.77%

Mean Batch Size: 256

Mean Learning Rate: 5.79e-04

Mean Weight Decay: 0.089

=====  
Epoch 38/70  
=====

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

built data in 1.6640660762786865 seconds

LR changed during epoch: 3.48e-04 -> 3.31e-04

total runtime to train this model was 25.74431347846985 seconds

Hyperparameteres for model 0 at epoch 38

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6161866188049316 seconds

Loss: 0.6633

Train Accuracy: 76.54%

Test Accuracy: 74.49%

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 1.780959129333496 seconds

LR changed during epoch: 3.12e-04 -> 4.68e-04

total runtime to train this model was 25.914687395095825 seconds

Hyperparameteres for model 1 at epoch 38

lr: 0.000778450943624547

weight\_decay: 0.05440931463188639

drop\_path: 0.4154231831829875

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.052330255508423 seconds

Loss: 0.6997

Train Accuracy: 75.02%

Test Accuracy: 74.96%

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 1.5877494812011719 seconds

LR changed during epoch: 2.95e-04 -> 2.82e-04

total runtime to train this model was 26.0027277469635 seconds

Hyperparameteres for model 2 at epoch 38

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3633358478546143 seconds

Loss: 0.6888

Train Accuracy: 75.60%

Test Accuracy: 75.18%

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 1.587813377380371 seconds

LR changed during epoch: 2.99e-04 -> 2.85e-04

total runtime to train this model was 26.302438974380493 seconds

Hyperparameteres for model 3 at epoch 38

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3672525882720947 seconds

Loss: 0.5570

Train Accuracy: 80.26%

Test Accuracy: 76.40%

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 1.6152074337005615 seconds
LR changed during epoch: 1.44e-04 -> 1.37e-04
total runtime to train this model was 26.140236139297485 seconds
Hyperparameteres for model 4 at epoch 38
lr: 0.0002804193304595399
```

```
weight_decay: 0.03654601866836071
```

```
drop_path: 0.021637958490999254
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.3154456615448 seconds
```

```
Loss: 0.5882
Train Accuracy: 79.17%
Test Accuracy: 75.40%
```

```
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: 152.31s (Avg member: 30.46s)
Population Mean Accuracy: 75.29%
Best Member Accuracy: 76.40%
Mean Batch Size: 256
Mean Learning Rate: 5.79e-04
Mean Weight Decay: 0.089
```

```
=====
Epoch 39/70
=====
```

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.6631500720977783 seconds
LR changed during epoch: 3.31e-04 -> 3.15e-04
total runtime to train this model was 25.800554037094116 seconds
Hyperparameteres for model 0 at epoch 39
lr: 0.0006782416715044019
```

```
weight_decay: 0.14890877193751148
```

```
drop_path: 0.25806391713579274
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 3.1447060108184814 seconds
```

```
Loss: 0.6429
Train Accuracy: 77.13%
Test Accuracy: 74.80%
```

```
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 1.6973283290863037 seconds
```

LR changed during epoch: 4.68e-04 -> 6.24e-04  
total runtime to train this model was 25.711076259613037 seconds  
Hyperparameteres for model 1 at epoch 39  
lr: 0.000778450943624547

weight\_decay: 0.05440931463188639

drop\_path: 0.4154231831829875

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.801490068435669 seconds

Loss: 0.7403  
Train Accuracy: 73.94%  
Test Accuracy: 72.71%

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 1.6131725311279297 seconds  
LR changed during epoch: 2.82e-04 -> 2.68e-04  
total runtime to train this model was 26.28828525543213 seconds  
Hyperparameteres for model 2 at epoch 39  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.259619951248169 seconds

Loss: 0.6772  
Train Accuracy: 76.06%  
Test Accuracy: 74.82%

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 1.612558364868164 seconds  
LR changed during epoch: 2.85e-04 -> 2.71e-04  
total runtime to train this model was 26.319042682647705 seconds  
Hyperparameteres for model 3 at epoch 39  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.346172332763672 seconds  
Loss: 0.5372

Train Accuracy: 80.96%  
Test Accuracy: 76.23%  
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 1.5856432914733887 seconds  
LR changed during epoch: 1.37e-04 -> 1.31e-04  
total runtime to train this model was 26.404510736465454 seconds  
Hyperparameteres for model 4 at epoch 39  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3026530742645264 seconds  
Loss: 0.5739  
Train Accuracy: 79.48%  
Test Accuracy: 75.49%  
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: 152.81s (Avg member: 30.56s)  
Population Mean Accuracy: 74.81%  
Best Member Accuracy: 76.23%  
Mean Batch Size: 256  
Mean Learning Rate: 5.79e-04  
Mean Weight Decay: 0.089

=====

Epoch 40/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7809114456176758 seconds  
LR changed during epoch: 3.15e-04 -> 2.99e-04  
total runtime to train this model was 25.833183765411377 seconds  
Hyperparameteres for model 0 at epoch 40  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.051335573196411 seconds  
Loss: 0.6324  
Train Accuracy: 77.64%  
Test Accuracy: 74.82%

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 1.715057373046875 seconds

LR changed during epoch: 6.24e-04 -> 7.78e-04

total runtime to train this model was 25.77322030067444 seconds

Hyperparameteres for model 1 at epoch 40

lr: 0.000778450943624547

weight\_decay: 0.05440931463188639

drop\_path: 0.4154231831829875

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.7841193675994873 seconds

Loss: 0.7742

Train Accuracy: 72.58%

Test Accuracy: 73.17%

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 1.6282742023468018 seconds

LR changed during epoch: 2.68e-04 -> 2.54e-04

total runtime to train this model was 26.153010368347168 seconds

Hyperparameteres for model 2 at epoch 40

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3638768196105957 seconds

Loss: 0.6636

Train Accuracy: 76.44%

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 1.6189327239990234 seconds

LR changed during epoch: 2.71e-04 -> 2.57e-04

total runtime to train this model was 26.0637469291687 seconds

Hyperparameteres for model 3 at epoch 40

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3332200050354004 seconds

Loss: 0.5268

Train Accuracy: 81.32%

Test Accuracy: 76.81%

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 1.6228718757629395 seconds

LR changed during epoch: 1.31e-04 -> 1.24e-04

total runtime to train this model was 26.164618730545044 seconds

Hyperparameteres for model 4 at epoch 40

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3130950927734375 seconds

Loss: 0.5619

Train Accuracy: 79.98%

Test Accuracy: 76.06%

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: [76.81]

Bottom performers: [73.17]

Member 1: lr changed from 0.000778450943624547 to 0.0009516042367664689

Member 1: weight\_decay changed from 0.05440931463188639 to 0.029535652587807916

Member 1: drop\_path changed from 0.4154231831829875 to 0.3587967010482771

Member 1 copied from 3

LR=9.52e-04, WD=0.030, DropPath=0.359, Warmup=5 epochs, Batch=256

=====

Epoch 40 Summary:

=====

Time: 152.46s (Avg member: 30.49s)

Population Mean Accuracy: 75.17%

Best Member Accuracy: 76.81%

Mean Batch Size: 256

Mean Learning Rate: 6.14e-04

Mean Weight Decay: 0.084

=====

Epoch 41/70

=====

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

built data in 1.6683244705200195 seconds

LR changed during epoch: 2.99e-04 -> 2.83e-04

total runtime to train this model was 25.56927800178528 seconds

Hyperparameteres for model 0 at epoch 41

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.9907236099243164 seconds

Loss: 0.6233

Train Accuracy: 77.91%

Test Accuracy: 75.61%

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 1.7340102195739746 seconds

LR changed during epoch: 9.71e-07 -> 1.91e-04

total runtime to train this model was 25.37637948989868 seconds

Hyperparameteres for model 1 at epoch 41

lr: 0.0009516042367664689

weight\_decay: 0.029535652587807916

drop\_path: 0.3587967010482771

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.1823391914367676 seconds

Loss: 0.5982

Train Accuracy: 78.67%

Test Accuracy: 77.45%

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 1.5768580436706543 seconds

LR changed during epoch: 2.54e-04 -> 2.40e-04

total runtime to train this model was 26.28647494316101 seconds

Hyperparameteres for model 2 at epoch 41

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2127110958099365 seconds

Loss: 0.6528

Train Accuracy: 76.89%

Test Accuracy: 75.74%

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 1.6309387683868408 seconds

LR changed during epoch: 2.57e-04 -> 2.43e-04

total runtime to train this model was 25.964905261993408 seconds

Hyperparameteres for model 3 at epoch 41

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.248138427734375 seconds

Loss: 0.5082

Train Accuracy: 81.86%

Test Accuracy: 76.60%

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 1.6802549362182617 seconds

LR changed during epoch: 1.24e-04 -> 1.17e-04

total runtime to train this model was 26.555458307266235 seconds

Hyperparameteres for model 4 at epoch 41

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.325653553009033 seconds

Loss: 0.5384

Train Accuracy: 80.89%

Test Accuracy: 76.00%

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: 152.25s (Avg member: 30.45s)

Population Mean Accuracy: 76.28%

Best Member Accuracy: 77.45%

Mean Batch Size: 256

Mean Learning Rate: 6.14e-04

Mean Weight Decay: 0.084

=====

Epoch 42/70

=====

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.7205002307891846 seconds
LR changed during epoch: 2.83e-04 -> 2.66e-04
total runtime to train this model was 25.980791807174683 seconds
Hyperparameteres for model 0 at epoch 42
lr: 0.0006782416715044019

weight_decay: 0.14890877193751148

drop_path: 0.25806391713579274

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 3.3290929794311523 seconds
Loss: 0.6136
Train Accuracy: 78.33%
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 1.6106934547424316 seconds
LR changed during epoch: 1.91e-04 -> 3.82e-04
total runtime to train this model was 26.154521942138672 seconds
Hyperparameteres for model 1 at epoch 42
lr: 0.0009516042367664689

weight_decay: 0.029535652587807916

drop_path: 0.3587967010482771

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.5155651569366455 seconds
Loss: 0.6135
Train Accuracy: 78.33%
Test Accuracy: 75.98%
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 1.5852653980255127 seconds
LR changed during epoch: 2.40e-04 -> 2.26e-04
total runtime to train this model was 26.11359930038452 seconds
Hyperparameteres for model 2 at epoch 42
lr: 0.0005761935801264503

weight_decay: 0.1354380062306811

drop_path: 0.4387702458061118

warmup_epochs: 5

batch_size: 256
```

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3061752319335938 seconds

Loss: 0.6417  
Train Accuracy: 77.30%

Test Accuracy: 75.71%  
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 1.5954666137695312 seconds

LR changed during epoch: 2.43e-04 -> 2.29e-04

total runtime to train this model was 26.286558866500854 seconds

Hyperparameteres for model 3 at epoch 42

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.357936382293701 seconds

Loss: 0.4947  
Train Accuracy: 82.42%

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 1.585221290588379 seconds

LR changed during epoch: 1.17e-04 -> 1.11e-04

total runtime to train this model was 26.210212230682373 seconds

Hyperparameteres for model 4 at epoch 42

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3600425720214844 seconds

Loss: 0.5241  
Train Accuracy: 81.41%

Test Accuracy: 76.50%  
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: 153.01s (Avg member: 30.60s)

Population Mean Accuracy: 76.27%

Best Member Accuracy: 77.13%

Mean Batch Size: 256

Mean Learning Rate: 6.14e-04

Mean Weight Decay: 0.084

=====

Epoch 43/70

=====

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

built data in 1.8050386905670166 seconds

LR changed during epoch: 2.66e-04 -> 2.51e-04

total runtime to train this model was 25.79756450653076 seconds

Hyperparameteres for model 0 at epoch 43

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.4658191204071045 seconds

Loss: 0.5992

Train Accuracy: 78.83%

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 1.559995412826538 seconds

LR changed during epoch: 3.82e-04 -> 5.72e-04

total runtime to train this model was 26.10318660736084 seconds

Hyperparameteres for model 1 at epoch 43

lr: 0.0009516042367664689

weight\_decay: 0.029535652587807916

drop\_path: 0.3587967010482771

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3327815532684326 seconds

Loss: 0.6781

Train Accuracy: 75.91%

Test Accuracy: 75.32%

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 1.5672996044158936 seconds

LR changed during epoch: 2.26e-04 -> 2.13e-04

total runtime to train this model was 26.557257175445557 seconds

Hyperparameteres for model 2 at epoch 43

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3941168785095215 seconds

Loss: 0.6319

Train Accuracy: 77.62%

Test Accuracy: 76.28%

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 1.5976505279541016 seconds

LR changed during epoch: 2.29e-04 -> 2.16e-04

total runtime to train this model was 26.1166934967041 seconds

Hyperparameteres for model 3 at epoch 43

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.407912492752075 seconds

Loss: 0.4722

Train Accuracy: 83.19%

Test Accuracy: 77.51%

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 1.586564540863037 seconds

LR changed during epoch: 1.11e-04 -> 1.04e-04

total runtime to train this model was 26.086255311965942 seconds

Hyperparameteres for model 4 at epoch 43

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.440551519393921 seconds

Loss: 0.5112

Train Accuracy: 81.95%

Test Accuracy: 76.13%

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: 153.12s (Avg member: 30.62s)  
Population Mean Accuracy: 76.23%  
Best Member Accuracy: 77.51%  
Mean Batch Size: 256  
Mean Learning Rate: 6.14e-04  
Mean Weight Decay: 0.084

=====  
Epoch 44/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7688391208648682 seconds  
LR changed during epoch: 2.51e-04 -> 2.35e-04  
total runtime to train this model was 25.393229961395264 seconds  
Hyperparameteres for model 0 at epoch 44  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4155404567718506 seconds  
Loss: 0.5885  
Train Accuracy: 79.01%  
Test Accuracy: 76.31%

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 1.5589251518249512 seconds  
LR changed during epoch: 5.72e-04 -> 7.62e-04  
total runtime to train this model was 26.65600848197937 seconds  
Hyperparameteres for model 1 at epoch 44  
lr: 0.0009516042367664689

weight\_decay: 0.029535652587807916

drop\_path: 0.3587967010482771

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3557381629943848 seconds  
Loss: 0.7293  
Train Accuracy: 73.94%  
Test Accuracy: 74.68%

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 1.583878755569458 seconds  
LR changed during epoch: 2.13e-04 -> 2.00e-04  
total runtime to train this model was 26.05926203727722 seconds  
Hyperparameteres for model 2 at epoch 44

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4940199851989746 seconds

Loss: 0.6220

Train Accuracy: 78.08%

Test Accuracy: 76.24%

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 1.5804903507232666 seconds

LR changed during epoch: 2.16e-04 -> 2.02e-04

total runtime to train this model was 26.35650944709778 seconds

Hyperparameteres for model 3 at epoch 44

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2985453605651855 seconds

Loss: 0.4581

Train Accuracy: 83.77%

Test Accuracy: 77.28%

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 1.6215019226074219 seconds

LR changed during epoch: 1.04e-04 -> 9.75e-05

total runtime to train this model was 25.855846405029297 seconds

Hyperparameteres for model 4 at epoch 44

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.581491470336914 seconds

Loss: 0.5027

Train Accuracy: 82.17%

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 44 Summary:

=====

Time: 152.82s (Avg member: 30.56s)

Population Mean Accuracy: 76.16%

Best Member Accuracy: 77.28%

Mean Batch Size: 256

Mean Learning Rate: 6.14e-04

Mean Weight Decay: 0.084

=====

Epoch 45/70

=====

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

built data in 1.737166404724121 seconds

LR changed during epoch: 2.35e-04 -> 2.19e-04

total runtime to train this model was 25.24644637107849 seconds

Hyperparameteres for model 0 at epoch 45

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.433664321899414 seconds

Loss: 0.5696

Train Accuracy: 79.79%

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 1.5841996669769287 seconds

LR changed during epoch: 7.62e-04 -> 9.52e-04

total runtime to train this model was 26.154212951660156 seconds

Hyperparameteres for model 1 at epoch 45

lr: 0.0009516042367664689

weight\_decay: 0.029535652587807916

drop\_path: 0.3587967010482771

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2968950271606445 seconds

Loss: 0.7784

Train Accuracy: 72.41%

Test Accuracy: 72.27%

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 1.573838710784912 seconds  
LR changed during epoch: 2.00e-04 -> 1.87e-04  
total runtime to train this model was 25.997907400131226 seconds  
Hyperparameteres for model 2 at epoch 45  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.270472288131714 seconds

Loss: 0.6039  
Train Accuracy: 78.61%  
Test Accuracy: 76.52%

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 1.5754060745239258 seconds

LR changed during epoch: 2.02e-04 -> 1.89e-04  
total runtime to train this model was 25.983242988586426 seconds  
Hyperparameteres for model 3 at epoch 45

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.27538800239563 seconds

Loss: 0.4435  
Train Accuracy: 84.23%  
Test Accuracy: 77.84%

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 1.5724501609802246 seconds

LR changed during epoch: 9.75e-05 -> 9.11e-05  
total runtime to train this model was 25.970845222473145 seconds  
Hyperparameteres for model 4 at epoch 45

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.6136739253997803 seconds

Loss: 0.4834

Train Accuracy: 82.84%

Test Accuracy: 76.58%

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: [77.84]

Bottom performers: [72.27]

Member 1: lr changed from 0.0009516042367664689 to 0.0008257212805778318

Member 1: weight\_decay changed from 0.029535652587807916 to 0.04817254513941294

Member 1: drop\_path changed from 0.3587967010482771 to 0.3310906087088055

Member 1 copied from 3

LR=8.26e-04, WD=0.048, DropPath=0.331, Warmup=5 epochs, Batch=256

=====

Epoch 45 Summary:

=====

Time: 151.54s (Avg member: 30.30s)

Population Mean Accuracy: 76.04%

Best Member Accuracy: 77.84%

Mean Batch Size: 256

Mean Learning Rate: 5.89e-04

Mean Weight Decay: 0.088

=====

Epoch 46/70

=====

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

built data in 1.7125730514526367 seconds

LR changed during epoch: 2.19e-04 -> 2.04e-04

total runtime to train this model was 26.073342084884644 seconds

Hyperparameteres for model 0 at epoch 46

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.6110637187957764 seconds

Loss: 0.5568

Train Accuracy: 80.31%

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 1.6823368072509766 seconds

LR changed during epoch: 8.43e-07 -> 1.66e-04

total runtime to train this model was 26.49183964729309 seconds

Hyperparameteres for model 1 at epoch 46

lr: 0.0008257212805778318

weight\_decay: 0.04817254513941294

drop\_path: 0.3310906087088055

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.658937454223633 seconds

Loss: 0.5512

Train Accuracy: 80.39%

Test Accuracy: 77.98%

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 1.5989048480987549 seconds

LR changed during epoch: 1.87e-04 -> 1.74e-04

total runtime to train this model was 26.20547318458557 seconds

Hyperparameteres for model 2 at epoch 46

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6293201446533203 seconds

Loss: 0.5899

Train Accuracy: 79.15%

Test Accuracy: 77.11%

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 1.563009262084961 seconds

LR changed during epoch: 1.89e-04 -> 1.76e-04

total runtime to train this model was 25.639171600341797 seconds

Hyperparameteres for model 3 at epoch 46

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.308659553527832 seconds

Loss: 0.4257

Train Accuracy: 84.98%

Test Accuracy: 77.63%

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 1.6780781745910645 seconds  
LR changed during epoch: 9.11e-05 -> 8.49e-05  
total runtime to train this model was 25.147284984588623 seconds  
Hyperparameteres for model 4 at epoch 46  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.025383472442627 seconds

Loss: 0.4691  
Train Accuracy: 83.25%  
Test Accuracy: 76.54%

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: 153.46s (Avg member: 30.69s)  
Population Mean Accuracy: 77.25%  
Best Member Accuracy: 77.98%  
Mean Batch Size: 256  
Mean Learning Rate: 5.89e-04  
Mean Weight Decay: 0.088

=====

Epoch 47/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7069501876831055 seconds  
LR changed during epoch: 2.04e-04 -> 1.89e-04  
total runtime to train this model was 24.601664543151855 seconds  
Hyperparameteres for model 0 at epoch 47  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1411256790161133 seconds

Loss: 0.5493  
Train Accuracy: 80.41%  
Test Accuracy: 76.41%

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 1.571155309677124 seconds

LR changed during epoch: 1.66e-04 -> 3.31e-04  
total runtime to train this model was 25.641491889953613 seconds  
Hyperparameteres for model 1 at epoch 47  
lr: 0.0008257212805778318

weight\_decay: 0.04817254513941294

drop\_path: 0.3310906087088055

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3147518634796143 seconds

Loss: 0.5702  
Train Accuracy: 79.65%  
Test Accuracy: 76.83%

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 1.5757267475128174 seconds  
LR changed during epoch: 1.74e-04 -> 1.61e-04  
total runtime to train this model was 26.077509880065918 seconds  
Hyperparameteres for model 2 at epoch 47  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.310697317123413 seconds  
Loss: 0.5801  
Train Accuracy: 79.38%  
Test Accuracy: 77.78%

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 1.6040239334106445 seconds  
LR changed during epoch: 1.76e-04 -> 1.63e-04  
total runtime to train this model was 26.404706954956055 seconds  
Hyperparameteres for model 3 at epoch 47  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.401771306991577 seconds  
Loss: 0.4065

Train Accuracy: 85.49%  
Test Accuracy: 77.01%  
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 1.5870721340179443 seconds  
LR changed during epoch: 8.49e-05 -> 7.88e-05  
total runtime to train this model was 26.781489372253418 seconds  
Hyperparameteres for model 4 at epoch 47  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9449381828308105 seconds  
Loss: 0.4502  
Train Accuracy: 84.13%  
Test Accuracy: 76.99%  
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: 151.91s (Avg member: 30.38s)  
Population Mean Accuracy: 77.00%  
Best Member Accuracy: 77.78%  
Mean Batch Size: 256  
Mean Learning Rate: 5.89e-04  
Mean Weight Decay: 0.088

=====

Epoch 48/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7299935817718506 seconds  
LR changed during epoch: 1.89e-04 -> 1.75e-04  
total runtime to train this model was 26.19511580467224 seconds  
Hyperparameteres for model 0 at epoch 48  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.661031484603882 seconds  
Loss: 0.5325  
Train Accuracy: 81.00%  
Test Accuracy: 77.08%

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 1.5909836292266846 seconds

LR changed during epoch: 3.31e-04 -> 4.96e-04

total runtime to train this model was 26.832975149154663 seconds

Hyperparameteres for model 1 at epoch 48

lr: 0.0008257212805778318

weight\_decay: 0.04817254513941294

drop\_path: 0.3310906087088055

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.308245897293091 seconds

Loss: 0.6240

Train Accuracy: 77.83%

Test Accuracy: 75.21%

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 1.6219336986541748 seconds

LR changed during epoch: 1.61e-04 -> 1.49e-04

total runtime to train this model was 26.459730863571167 seconds

Hyperparameteres for model 2 at epoch 48

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.346471071243286 seconds

Loss: 0.5623

Train Accuracy: 80.12%

Test Accuracy: 77.50%

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 1.5699326992034912 seconds

LR changed during epoch: 1.63e-04 -> 1.51e-04

total runtime to train this model was 26.40867829322815 seconds

Hyperparameteres for model 3 at epoch 48

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6114447116851807 seconds

Loss: 0.3947

Train Accuracy: 86.05%

Test Accuracy: 77.79%

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 1.7849514484405518 seconds

LR changed during epoch: 7.88e-05 -> 7.28e-05

total runtime to train this model was 26.143969297409058 seconds

Hyperparameteres for model 4 at epoch 48

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1114895343780518 seconds

Loss: 0.4391

Train Accuracy: 84.36%

Test Accuracy: 77.03%

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: 154.65s (Avg member: 30.93s)

Population Mean Accuracy: 76.92%

Best Member Accuracy: 77.79%

Mean Batch Size: 256

Mean Learning Rate: 5.89e-04

Mean Weight Decay: 0.088

=====

Epoch 49/70

=====

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

built data in 1.6028616428375244 seconds

LR changed during epoch: 1.75e-04 -> 1.61e-04

total runtime to train this model was 26.93857479095459 seconds

Hyperparameteres for model 0 at epoch 49

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3094944953918457 seconds

Loss: 0.5231  
Train Accuracy: 81.49%

Test Accuracy: 77.35%  
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 1.6024894714355469 seconds

LR changed during epoch: 4.96e-04 -> 6.61e-04

total runtime to train this model was 26.51353693008423 seconds

Hyperparameteres for model 1 at epoch 49

lr: 0.0008257212805778318

weight\_decay: 0.04817254513941294

drop\_path: 0.3310906087088055

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4448671340942383 seconds

Loss: 0.6769  
Train Accuracy: 76.06%

Test Accuracy: 74.98%  
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 1.5826818943023682 seconds

LR changed during epoch: 1.49e-04 -> 1.37e-04

total runtime to train this model was 26.659597396850586 seconds

Hyperparameteres for model 2 at epoch 49

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.484638214111328 seconds

Loss: 0.5573  
Train Accuracy: 80.15%

Test Accuracy: 77.79%  
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 1.734194040298462 seconds

LR changed during epoch: 1.51e-04 -> 1.38e-04

total runtime to train this model was 26.272207498550415 seconds

Hyperparameteres for model 3 at epoch 49

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1804215908050537 seconds

Loss: 0.3774

Train Accuracy: 86.52%

Test Accuracy: 78.14%

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 1.6152410507202148 seconds

LR changed during epoch: 7.28e-05 -> 6.70e-05

total runtime to train this model was 26.990089893341064 seconds

Hyperparameteres for model 4 at epoch 49

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4203577041625977 seconds

Loss: 0.4325

Train Accuracy: 84.75%

Test Accuracy: 77.16%

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: 155.59s (Avg member: 31.12s)

Population Mean Accuracy: 77.08%

Best Member Accuracy: 78.14%

Mean Batch Size: 256

Mean Learning Rate: 5.89e-04

Mean Weight Decay: 0.088

=====

Epoch 50/70

=====

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

built data in 1.5847163200378418 seconds

LR changed during epoch: 1.61e-04 -> 1.47e-04

total runtime to train this model was 26.575185775756836 seconds

Hyperparameteres for model 0 at epoch 50

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.373856544494629 seconds

Loss: 0.5097

Train Accuracy: 81.93%

Test Accuracy: 77.39%

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 1.576845407485962 seconds

LR changed during epoch: 6.61e-04 -> 8.26e-04

total runtime to train this model was 26.350809335708618 seconds

Hyperparameteres for model 1 at epoch 50

lr: 0.0008257212805778318

weight\_decay: 0.04817254513941294

drop\_path: 0.3310906087088055

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.463771104812622 seconds

Loss: 0.7217

Train Accuracy: 74.46%

Test Accuracy: 73.04%

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 1.7780401706695557 seconds

LR changed during epoch: 1.37e-04 -> 1.25e-04

total runtime to train this model was 25.562091588974 seconds

Hyperparameteres for model 2 at epoch 50

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4592761993408203 seconds

Loss: 0.5461

Train Accuracy: 80.72%

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 1.5563302040100098 seconds

LR changed during epoch: 1.38e-04 -> 1.27e-04

total runtime to train this model was 26.305575609207153 seconds

Hyperparameteres for model 3 at epoch 50

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.423736572265625 seconds

Loss: 0.3690

Train Accuracy: 87.02%

Test Accuracy: 78.01%

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 1.5830237865447998 seconds

LR changed during epoch: 6.70e-05 -> 6.13e-05

total runtime to train this model was 26.16117262840271 seconds

Hyperparameteres for model 4 at epoch 50

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.551142930984497 seconds

Loss: 0.4224

Train Accuracy: 85.09%

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

--- Population Update (Epoch 50) ---

==== PBT Exploit & Explore ===

Top performers: [78.01]

Bottom performers: [73.04]

Member 1: lr changed from 0.0008257212805778318 to 0.0010000000000000002

Member 1: weight\_decay changed from 0.04817254513941294 to 0.04153785195971281

Member 1: drop\_path changed from 0.3310906087088055 to 0.293297993973078

Member 1 copied from 3

LR=1.00e-03, WD=0.042, DropPath=0.293, Warmup=5 epochs, Batch=256

=====

Epoch 50 Summary:

=====

Time: 153.59s (Avg member: 30.72s)

Population Mean Accuracy: 76.58%

Best Member Accuracy: 78.01%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.086

=====

Epoch 51/70

=====

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

built data in 1.5857927799224854 seconds

LR changed during epoch: 1.47e-04 -> 1.34e-04

total runtime to train this model was 26.24842667579651 seconds

Hyperparameteres for model 0 at epoch 51

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.4164066314697266 seconds

Loss: 0.4986

Train Accuracy: 82.48%

Test Accuracy: 77.25%

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 1.591951608657837 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 26.19312024116516 seconds

Hyperparameteres for model 1 at epoch 51

lr: 0.0010000000000000002

weight\_decay: 0.04153785195971281

drop\_path: 0.293297993973078

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.7843799591064453 seconds

Loss: 0.5147

Train Accuracy: 81.79%

Test Accuracy: 78.62%

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 1.7160091400146484 seconds

LR changed during epoch: 1.25e-04 -> 1.14e-04

total runtime to train this model was 24.582589387893677 seconds

Hyperparameteres for model 2 at epoch 51

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.566878080368042 seconds

Loss: 0.5378

Train Accuracy: 80.92%

Test Accuracy: 77.74%

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 1.5710761547088623 seconds

LR changed during epoch: 1.27e-04 -> 1.15e-04

total runtime to train this model was 25.70158624649048 seconds

Hyperparameteres for model 3 at epoch 51

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.328397035598755 seconds

Loss: 0.3459

Train Accuracy: 87.59%

Test Accuracy: 77.84%

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 1.5779621601104736 seconds

LR changed during epoch: 6.13e-05 -> 5.59e-05

total runtime to train this model was 25.888995885849 seconds

Hyperparameteres for model 4 at epoch 51

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.45656681060791 seconds

Loss: 0.4033

Train Accuracy: 85.55%

Test Accuracy: 77.32%

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: 151.43s (Avg member: 30.29s)  
Population Mean Accuracy: 77.75%  
Best Member Accuracy: 78.62%  
Mean Batch Size: 256  
Mean Learning Rate: 6.24e-04  
Mean Weight Decay: 0.086

=====  
Epoch 52/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6124696731567383 seconds  
LR changed during epoch: 1.34e-04 -> 1.21e-04  
total runtime to train this model was 25.847175359725952 seconds  
Hyperparameteres for model 0 at epoch 52  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3664968013763428 seconds

Loss: 0.4873  
Train Accuracy: 82.64%  
Test Accuracy: 77.60%

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 1.5814971923828125 seconds  
LR changed during epoch: 2.01e-04 -> 4.01e-04  
total runtime to train this model was 26.062184810638428 seconds  
Hyperparameteres for model 1 at epoch 52  
lr: 0.0010000000000000002

weight\_decay: 0.04153785195971281

drop\_path: 0.293297993973078

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6758182048797607 seconds

Loss: 0.5575  
Train Accuracy: 80.18%  
Test Accuracy: 77.58%

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 1.7906880378723145 seconds  
LR changed during epoch: 1.14e-04 -> 1.03e-04  
total runtime to train this model was 25.152085542678833 seconds  
Hyperparameteres for model 2 at epoch 52

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.521127223968506 seconds

Loss: 0.5283

Train Accuracy: 81.46%

Test Accuracy: 77.85%

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 1.5661191940307617 seconds

LR changed during epoch: 1.15e-04 -> 1.04e-04

total runtime to train this model was 26.110033750534058 seconds

Hyperparameteres for model 3 at epoch 52

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4100425243377686 seconds

Loss: 0.3424

Train Accuracy: 87.72%

Test Accuracy: 78.20%

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 1.6093263626098633 seconds

LR changed during epoch: 5.59e-05 -> 5.06e-05

total runtime to train this model was 25.906983375549316 seconds

Hyperparameteres for model 4 at epoch 52

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3674416542053223 seconds

Loss: 0.3899

Train Accuracy: 86.06%

Test Accuracy: 77.78%

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: 151.82s (Avg member: 30.36s)

Population Mean Accuracy: 77.80%

Best Member Accuracy: 78.20%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.086

=====

Epoch 53/70

=====

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

built data in 1.569265365600586 seconds

LR changed during epoch: 1.21e-04 -> 1.09e-04

total runtime to train this model was 25.95477557182312 seconds

Hyperparameteres for model 0 at epoch 53

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3308632373809814 seconds

Loss: 0.4770

Train Accuracy: 83.13%

Test Accuracy: 78.05%

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 1.5863888263702393 seconds

LR changed during epoch: 4.01e-04 -> 6.01e-04

total runtime to train this model was 25.911028146743774 seconds

Hyperparameteres for model 1 at epoch 53

lr: 0.001000000000000002

weight\_decay: 0.04153785195971281

drop\_path: 0.293297993973078

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.375457525253296 seconds

Loss: 0.6264

Train Accuracy: 77.59%

Test Accuracy: 75.93%

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 1.6592259407043457 seconds  
LR changed during epoch: 1.03e-04 -> 9.27e-05  
total runtime to train this model was 25.16591191291809 seconds  
Hyperparameteres for model 2 at epoch 53  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4452457427978516 seconds  
Loss: 0.5185  
Train Accuracy: 81.69%  
Test Accuracy: 78.01%  
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 1.6225390434265137 seconds  
LR changed during epoch: 1.04e-04 -> 9.38e-05  
total runtime to train this model was 25.820883750915527 seconds  
Hyperparameteres for model 3 at epoch 53  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.54018497467041 seconds  
Loss: 0.3221  
Train Accuracy: 88.53%  
Test Accuracy: 78.63%  
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 1.5795459747314453 seconds  
LR changed during epoch: 5.06e-05 -> 4.55e-05  
total runtime to train this model was 25.809656381607056 seconds  
Hyperparameteres for model 4 at epoch 53  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.376312017440796 seconds

Loss: 0.3774

Train Accuracy: 86.73%

Test Accuracy: 78.20%

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: 151.05s (Avg member: 30.21s)

Population Mean Accuracy: 77.76%

Best Member Accuracy: 78.63%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.086

=====

Epoch 54/70

=====

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

built data in 1.6208162307739258 seconds

LR changed during epoch: 1.09e-04 -> 9.72e-05

total runtime to train this model was 26.257280349731445 seconds

Hyperparameteres for model 0 at epoch 54

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.4625563621520996 seconds

Loss: 0.4664

Train Accuracy: 83.37%

Test Accuracy: 78.01%

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 1.5965619087219238 seconds

LR changed during epoch: 6.01e-04 -> 8.01e-04

total runtime to train this model was 26.081814527511597 seconds

Hyperparameteres for model 1 at epoch 54

lr: 0.0010000000000000002

weight\_decay: 0.04153785195971281

drop\_path: 0.293297993973078

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.417353630065918 seconds

Loss: 0.6942

Train Accuracy: 75.23%  
Test Accuracy: 74.33%  
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 1.6781947612762451 seconds  
LR changed during epoch: 9.27e-05 -> 8.27e-05  
total runtime to train this model was 25.581937313079834 seconds  
Hyperparameteres for model 2 at epoch 54  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811  
drop\_path: 0.4387702458061118  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5055837631225586 seconds  
Loss: 0.5074  
Train Accuracy: 81.89%  
Test Accuracy: 78.56%  
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 1.6292648315429688 seconds  
LR changed during epoch: 9.38e-05 -> 8.38e-05  
total runtime to train this model was 26.54009175300598 seconds  
Hyperparameteres for model 3 at epoch 54  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.424210548400879 seconds  
Loss: 0.3082  
Train Accuracy: 88.96%  
Test Accuracy: 78.01%  
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 1.6081874370574951 seconds  
LR changed during epoch: 4.55e-05 -> 4.07e-05  
total runtime to train this model was 26.374410390853882 seconds  
Hyperparameteres for model 4 at epoch 54  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.389474868774414 seconds

Loss: 0.3626

Train Accuracy: 87.06%

Test Accuracy: 77.51%

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: 153.46s (Avg member: 30.69s)

Population Mean Accuracy: 77.28%

Best Member Accuracy: 78.56%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.086

=====

Epoch 55/70

=====

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

built data in 1.5735328197479248 seconds

LR changed during epoch: 9.72e-05 -> 8.61e-05

total runtime to train this model was 26.34259557723999 seconds

Hyperparameteres for model 0 at epoch 55

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.314059019088745 seconds

Loss: 0.4551

Train Accuracy: 83.87%

Test Accuracy: 78.44%

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 1.5977907180786133 seconds

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

total runtime to train this model was 25.689069986343384 seconds

Hyperparameteres for model 1 at epoch 55

lr: 0.001000000000000002

weight\_decay: 0.04153785195971281

drop\_path: 0.293297993973078

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7839062213897705 seconds

Loss: 0.7410

Train Accuracy: 73.65%

Test Accuracy: 72.21%

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 1.7629101276397705 seconds

LR changed during epoch: 8.27e-05 -> 7.33e-05

total runtime to train this model was 24.82655167579651 seconds

Hyperparameteres for model 2 at epoch 55

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3346691131591797 seconds

Loss: 0.5002

Train Accuracy: 82.23%

Test Accuracy: 78.63%

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 1.5953006744384766 seconds

LR changed during epoch: 8.38e-05 -> 7.42e-05

total runtime to train this model was 25.852932453155518 seconds

Hyperparameteres for model 3 at epoch 55

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3230128288269043 seconds

Loss: 0.2961

Train Accuracy: 89.36%

Test Accuracy: 77.99%

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 1.5668268203735352 seconds

LR changed during epoch: 4.07e-05 -> 3.61e-05

total runtime to train this model was 26.035694360733032 seconds

Hyperparameteres for model 4 at epoch 55

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3747668266296387 seconds

Loss: 0.3588

Train Accuracy: 87.21%

Test Accuracy: 78.04%

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: [78.63]

Bottom performers: [72.21]

Member 1: weight\_decay changed from 0.04153785195971281 to 0.06229777700830608

Member 1: drop\_path changed from 0.293297993973078 to 0.2765320479932082

Member 1 copied from 2

LR=1.00e-03, WD=0.062, DropPath=0.277, Warmup=5 epochs, Batch=256

=====

Epoch 55 Summary:

=====

Time: 151.22s (Avg member: 30.24s)

Population Mean Accuracy: 77.06%

Best Member Accuracy: 78.63%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.090

=====

Epoch 56/70

=====

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

built data in 1.605649471282959 seconds

LR changed during epoch: 8.61e-05 -> 7.56e-05

total runtime to train this model was 26.15781593322754 seconds

Hyperparameteres for model 0 at epoch 56

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2629566192626953 seconds

Loss: 0.4512

Train Accuracy: 84.01%

Test Accuracy: 78.34%

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 1.618049144744873 seconds

LR changed during epoch: 1.02e-06 -> 2.01e-04

total runtime to train this model was 25.75718641281128 seconds

Hyperparameteres for model 1 at epoch 56

lr: 0.00100000000000000002

weight\_decay: 0.06229777700830608

drop\_path: 0.2765320479932082

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.1143877506256104 seconds

Loss: 0.5001

Train Accuracy: 82.29%

Test Accuracy: 78.05%

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 1.652411937713623 seconds

LR changed during epoch: 7.33e-05 -> 6.43e-05

total runtime to train this model was 25.95833396911621 seconds

Hyperparameteres for model 2 at epoch 56

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.556166648864746 seconds

Loss: 0.4898

Train Accuracy: 82.74%

Test Accuracy: 78.91%

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 1.568049430847168 seconds

LR changed during epoch: 7.42e-05 -> 6.51e-05

total runtime to train this model was 26.06940460205078 seconds

Hyperparameteres for model 3 at epoch 56

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2650809288024902 seconds

Loss: 0.2845  
Train Accuracy: 89.85%  
Test Accuracy: 78.07%

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 1.570805311203003 seconds

LR changed during epoch: 3.61e-05 -> 3.18e-05  
total runtime to train this model was 25.956574201583862 seconds

Hyperparameteres for model 4 at epoch 56

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.30962872505188 seconds

Loss: 0.3449  
Train Accuracy: 87.63%  
Test Accuracy: 77.91%

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: 151.65s (Avg member: 30.33s)  
Population Mean Accuracy: 78.26%  
Best Member Accuracy: 78.91%  
Mean Batch Size: 256  
Mean Learning Rate: 6.24e-04  
Mean Weight Decay: 0.090

=====

Epoch 57/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.573486566543579 seconds  
LR changed during epoch: 7.56e-05 -> 6.56e-05  
total runtime to train this model was 25.4394211769104 seconds  
Hyperparameteres for model 0 at epoch 57  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.792351722717285 seconds

Loss: 0.4355

Train Accuracy: 84.40%

Test Accuracy: 78.72%

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 1.7146327495574951 seconds

LR changed during epoch: 2.01e-04 -> 4.01e-04

total runtime to train this model was 25.49174427986145 seconds

Hyperparameteres for model 1 at epoch 57

lr: 0.00100000000000000002

weight\_decay: 0.06229777700830608

drop\_path: 0.2765320479932082

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.9657793045043945 seconds

Loss: 0.5822

Train Accuracy: 79.45%

Test Accuracy: 75.04%

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 1.5731043815612793 seconds

LR changed during epoch: 6.43e-05 -> 5.59e-05

total runtime to train this model was 25.862907886505127 seconds

Hyperparameteres for model 2 at epoch 57

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3300328254699707 seconds

Loss: 0.4793

Train Accuracy: 83.10%

Test Accuracy: 78.75%

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 1.5716972351074219 seconds

LR changed during epoch: 6.51e-05 -> 5.66e-05

total runtime to train this model was 25.95045495033264 seconds

Hyperparameteres for model 3 at epoch 57

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.365718126296997 seconds

Loss: 0.2775

Train Accuracy: 90.16%

Test Accuracy: 78.05%

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 1.5709953308105469 seconds

LR changed during epoch: 3.18e-05 -> 2.77e-05

total runtime to train this model was 26.00115990638733 seconds

Hyperparameteres for model 4 at epoch 57

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5282480716705322 seconds

Loss: 0.3362

Train Accuracy: 88.15%

Test Accuracy: 77.76%

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: 151.03s (Avg member: 30.21s)

Population Mean Accuracy: 77.66%

Best Member Accuracy: 78.75%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.090

=====

Epoch 58/70

=====

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

built data in 1.7507150173187256 seconds

LR changed during epoch: 6.56e-05 -> 5.63e-05

total runtime to train this model was 25.306321620941162 seconds

Hyperparameteres for model 0 at epoch 58

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1799557209014893 seconds

Loss: 0.4338

Train Accuracy: 84.66%

Test Accuracy: 78.80%

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 1.574737548828125 seconds

LR changed during epoch: 4.01e-04 -> 6.01e-04

total runtime to train this model was 26.137880086898804 seconds

Hyperparameteres for model 1 at epoch 58

lr: 0.00100000000000000002

weight\_decay: 0.06229777700830608

drop\_path: 0.2765320479932082

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.321901559829712 seconds

Loss: 0.6550

Train Accuracy: 76.79%

Test Accuracy: 73.68%

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 1.5958378314971924 seconds

LR changed during epoch: 5.59e-05 -> 4.80e-05

total runtime to train this model was 26.453547716140747 seconds

Hyperparameteres for model 2 at epoch 58

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3742358684539795 seconds

Loss: 0.4793

Train Accuracy: 83.07%

Test Accuracy: 78.94%

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 1.5715527534484863 seconds

LR changed during epoch: 5.66e-05 -> 4.86e-05

total runtime to train this model was 27.290132999420166 seconds

Hyperparameteres for model 3 at epoch 58

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.9201834201812744 seconds

Loss: 0.2687

Train Accuracy: 90.42%

Test Accuracy: 78.18%

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 1.720344066619873 seconds

LR changed during epoch: 2.77e-05 -> 2.38e-05

total runtime to train this model was 26.26668953895569 seconds

Hyperparameteres for model 4 at epoch 58

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.508596658706665 seconds

Loss: 0.3288

Train Accuracy: 88.28%

Test Accuracy: 78.15%

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: 154.20s (Avg member: 30.84s)

Population Mean Accuracy: 77.55%

Best Member Accuracy: 78.94%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.090

=====

Epoch 59/70

=====

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

built data in 1.5688467025756836 seconds

LR changed during epoch: 5.63e-05 -> 4.77e-05

total runtime to train this model was 26.206909656524658 seconds

Hyperparameteres for model 0 at epoch 59

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3399112224578857 seconds

Loss: 0.4229

Train Accuracy: 85.10%

Test Accuracy: 78.57%

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 1.5725672245025635 seconds

LR changed during epoch: 6.01e-04 -> 8.01e-04

total runtime to train this model was 25.82487463951111 seconds

Hyperparameteres for model 1 at epoch 59

lr: 0.001000000000000002

weight\_decay: 0.06229777700830608

drop\_path: 0.2765320479932082

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.311591863632202 seconds

Loss: 0.7175

Train Accuracy: 74.45%

Test Accuracy: 73.30%

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 1.5642666816711426 seconds

LR changed during epoch: 4.80e-05 -> 4.07e-05

total runtime to train this model was 25.990400314331055 seconds

Hyperparameteres for model 2 at epoch 59

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.506124258041382 seconds

Loss: 0.4692

Train Accuracy: 83.47%

Test Accuracy: 79.12%

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 1.7508366107940674 seconds  
LR changed during epoch: 4.86e-05 -> 4.12e-05  
total runtime to train this model was 25.44058060646057 seconds  
Hyperparameteres for model 3 at epoch 59  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0133841037750244 seconds

Loss: 0.2585

Train Accuracy: 90.92%

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 1.5570578575134277 seconds

LR changed during epoch: 2.38e-05 -> 2.03e-05

total runtime to train this model was 25.8276789188385 seconds

Hyperparameteres for model 4 at epoch 59

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.283252000808716 seconds

Loss: 0.3228

Train Accuracy: 88.63%

Test Accuracy: 78.50%

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: 151.00s (Avg member: 30.20s)

Population Mean Accuracy: 77.58%

Best Member Accuracy: 79.12%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.090

=====

Epoch 60/70

=====

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

built data in 1.5699820518493652 seconds  
LR changed during epoch: 4.77e-05 -> 3.97e-05  
total runtime to train this model was 26.110240697860718 seconds  
Hyperparameteres for model 0 at epoch 60  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2753138542175293 seconds

Loss: 0.4134  
Train Accuracy: 85.30%  
Test Accuracy: 78.58%

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 1.5556814670562744 seconds  
LR changed during epoch: 8.01e-04 -> 1.00e-03  
total runtime to train this model was 25.888076782226562 seconds  
Hyperparameteres for model 1 at epoch 60  
lr: 0.0010000000000000002

weight\_decay: 0.06229777700830608

drop\_path: 0.2765320479932082

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.415079116821289 seconds

Loss: 0.7674  
Train Accuracy: 72.82%  
Test Accuracy: 70.31%

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 1.700014352798462 seconds  
LR changed during epoch: 4.07e-05 -> 3.39e-05  
total runtime to train this model was 26.246366262435913 seconds  
Hyperparameteres for model 2 at epoch 60  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.417114496231079 seconds

Loss: 0.4611  
Train Accuracy: 83.77%  
Test Accuracy: 79.10%  
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 1.589745283126831 seconds  
LR changed during epoch: 4.12e-05 -> 3.43e-05  
total runtime to train this model was 26.247066259384155 seconds  
Hyperparameteres for model 3 at epoch 60  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874  
drop\_path: 0.08323777141836364  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.345360517501831 seconds  
Loss: 0.2470  
Train Accuracy: 91.19%  
Test Accuracy: 78.64%  
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 1.577864170074463 seconds  
LR changed during epoch: 2.03e-05 -> 1.70e-05  
total runtime to train this model was 26.104544639587402 seconds  
Hyperparameteres for model 4 at epoch 60  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071  
drop\_path: 0.021637958490999254  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3649396896362305 seconds  
Loss: 0.3135  
Train Accuracy: 88.91%  
Test Accuracy: 78.27%  
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: [79.1]  
Bottom performers: [70.31]  
Member 1: weight\_decay changed from 0.06229777700830608 to 0.07408303788033345  
Member 1: drop\_path changed from 0.2765320479932082 to 0.3299365794063248  
Member 1 copied from 2  
LR=1.00e-03, WD=0.074, DropPath=0.330, Warmup=5 epochs, Batch=256

```
=====
Epoch 60 Summary:
=====
```

Time: 152.62s (Avg member: 30.52s)  
Population Mean Accuracy: 76.98%  
Best Member Accuracy: 79.10%  
Mean Batch Size: 256  
Mean Learning Rate: 6.24e-04  
Mean Weight Decay: 0.093

```
=====
Epoch 61/70
=====
```

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

built data in 1.5683374404907227 seconds  
LR changed during epoch: 3.97e-05 -> 3.25e-05  
total runtime to train this model was 26.1908962726593 seconds  
Hyperparameteres for model 0 at epoch 61  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.437671422958374 seconds

Loss: 0.4067  
Train Accuracy: 85.62%  
Test Accuracy: 78.90%

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 1.7495825290679932 seconds  
LR changed during epoch: 1.02e-06 -> 2.01e-04  
total runtime to train this model was 25.4285569190979 seconds  
Hyperparameteres for model 1 at epoch 61  
lr: 0.0010000000000000002

weight\_decay: 0.07408303788033345

drop\_path: 0.3299365794063248

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.1412088871002197 seconds

Loss: 0.4825  
Train Accuracy: 82.64%  
Test Accuracy: 77.89%

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 1.5579829216003418 seconds

LR changed during epoch: 3.39e-05 -> 2.78e-05  
total runtime to train this model was 26.077829122543335 seconds  
Hyperparameteres for model 2 at epoch 61  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.33960223197937 seconds

Loss: 0.4603  
Train Accuracy: 83.74%  
Test Accuracy: 78.97%

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 1.5830373764038086 seconds

LR changed during epoch: 3.43e-05 -> 2.81e-05  
total runtime to train this model was 25.807350158691406 seconds  
Hyperparameteres for model 3 at epoch 61  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3310670852661133 seconds

Loss: 0.2452  
Train Accuracy: 91.33%  
Test Accuracy: 78.53%

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 1.5734825134277344 seconds

LR changed during epoch: 1.70e-05 -> 1.40e-05  
total runtime to train this model was 26.341644525527954 seconds  
Hyperparameteres for model 4 at epoch 61  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.344364881515503 seconds

Loss: 0.3054

Train Accuracy: 89.21%

Test Accuracy: 78.06%

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: 151.74s (Avg member: 30.35s)

Population Mean Accuracy: 78.47%

Best Member Accuracy: 78.97%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.093

=====

Epoch 62/70

=====

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

built data in 1.711564064025879 seconds

LR changed during epoch: 3.25e-05 -> 2.60e-05

total runtime to train this model was 26.40479564666748 seconds

Hyperparameteres for model 0 at epoch 62

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.3834567070007324 seconds

Loss: 0.4026

Train Accuracy: 85.76%

Test Accuracy: 78.73%

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 1.602463722229004 seconds

LR changed during epoch: 2.01e-04 -> 4.01e-04

total runtime to train this model was 26.276854038238525 seconds

Hyperparameteres for model 1 at epoch 62

lr: 0.001000000000000002

weight\_decay: 0.07408303788033345

drop\_path: 0.3299365794063248

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.336000442504883 seconds

Loss: 0.5682

Train Accuracy: 79.44%

Test Accuracy: 76.16%

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 1.576920509338379 seconds

LR changed during epoch: 2.78e-05 -> 2.22e-05

total runtime to train this model was 26.47204351425171 seconds

Hyperparameteres for model 2 at epoch 62

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.395461082458496 seconds

Loss: 0.4538

Train Accuracy: 83.87%

Test Accuracy: 79.08%

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 1.5859465599060059 seconds

LR changed during epoch: 2.81e-05 -> 2.25e-05

total runtime to train this model was 26.06671118736267 seconds

Hyperparameteres for model 3 at epoch 62

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.65959095954895 seconds

Loss: 0.2349

Train Accuracy: 91.67%

Test Accuracy: 78.58%

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 1.7009124755859375 seconds

LR changed during epoch: 1.40e-05 -> 1.13e-05

total runtime to train this model was 24.924455404281616 seconds

Hyperparameteres for model 4 at epoch 62

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.106395959854126 seconds

Loss: 0.3040

Train Accuracy: 89.33%

Test Accuracy: 78.16%

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: 153.49s (Avg member: 30.70s)

Population Mean Accuracy: 78.14%

Best Member Accuracy: 79.08%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.093

=====

Epoch 63/70

=====

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

built data in 1.5663511753082275 seconds

LR changed during epoch: 2.60e-05 -> 2.02e-05

total runtime to train this model was 25.789198875427246 seconds

Hyperparameteres for model 0 at epoch 63

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.364826202392578 seconds

Loss: 0.3952

Train Accuracy: 86.09%

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 1.5865609645843506 seconds

LR changed during epoch: 4.01e-04 -> 6.01e-04

total runtime to train this model was 26.034568309783936 seconds

Hyperparameteres for model 1 at epoch 63

lr: 0.0010000000000000002

weight\_decay: 0.07408303788033345

drop\_path: 0.3299365794063248

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3238298892974854 seconds

Loss: 0.6472  
Train Accuracy: 76.89%  
Test Accuracy: 74.16%

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 1.5836308002471924 seconds  
LR changed during epoch: 2.22e-05 -> 1.73e-05  
total runtime to train this model was 25.61473822593689 seconds  
Hyperparameteres for model 2 at epoch 63  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3032045364379883 seconds

Loss: 0.4513  
Train Accuracy: 83.91%  
Test Accuracy: 79.22%

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 1.6710608005523682 seconds  
LR changed during epoch: 2.25e-05 -> 1.75e-05  
total runtime to train this model was 25.659682273864746 seconds  
Hyperparameteres for model 3 at epoch 63  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5284528732299805 seconds

Loss: 0.2306  
Train Accuracy: 91.83%  
Test Accuracy: 78.38%

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 1.559863567352295 seconds  
LR changed during epoch: 1.13e-05 -> 8.91e-06  
total runtime to train this model was 25.754295349121094 seconds  
Hyperparameteres for model 4 at epoch 63  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3767614364624023 seconds

Loss: 0.2977

Train Accuracy: 89.52%

Test Accuracy: 78.31%

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: 150.91s (Avg member: 30.18s)

Population Mean Accuracy: 77.77%

Best Member Accuracy: 79.22%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.093

=====

Epoch 64/70

=====

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

built data in 1.5664217472076416 seconds

LR changed during epoch: 2.02e-05 -> 1.51e-05

total runtime to train this model was 25.87517285346985 seconds

Hyperparameteres for model 0 at epoch 64

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2918028831481934 seconds

Loss: 0.3922

Train Accuracy: 86.10%

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 1.5890049934387207 seconds

LR changed during epoch: 6.01e-04 -> 8.01e-04

total runtime to train this model was 25.821549654006958 seconds

Hyperparameteres for model 1 at epoch 64

lr: 0.0010000000000000002

weight\_decay: 0.07408303788033345

drop\_path: 0.3299365794063248

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3091371059417725 seconds

Loss: 0.7101

Train Accuracy: 74.83%

Test Accuracy: 72.41%

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 1.679028034210205 seconds

LR changed during epoch: 1.73e-05 -> 1.30e-05

total runtime to train this model was 25.334439516067505 seconds

Hyperparameteres for model 2 at epoch 64

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0898523330688477 seconds

Loss: 0.4497

Train Accuracy: 83.91%

Test Accuracy: 79.19%

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 1.6561870574951172 seconds

LR changed during epoch: 1.75e-05 -> 1.31e-05

total runtime to train this model was 25.491296768188477 seconds

Hyperparameteres for model 3 at epoch 64

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5986437797546387 seconds

Loss: 0.2262

Train Accuracy: 91.88%

Test Accuracy: 78.41%

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 1.5824172496795654 seconds

LR changed during epoch: 8.91e-06 -> 6.82e-06

total runtime to train this model was 25.637463092803955 seconds

Hyperparameteres for model 4 at epoch 64

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3104159832000732 seconds

Loss: 0.2938

Train Accuracy: 89.65%

Test Accuracy: 78.23%

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: 150.07s (Avg member: 30.01s)

Population Mean Accuracy: 77.40%

Best Member Accuracy: 79.19%

Mean Batch Size: 256

Mean Learning Rate: 6.24e-04

Mean Weight Decay: 0.093

=====

Epoch 65/70

=====

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

built data in 1.5956439971923828 seconds

LR changed during epoch: 1.51e-05 -> 1.08e-05

total runtime to train this model was 25.642813682556152 seconds

Hyperparameteres for model 0 at epoch 65

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2977304458618164 seconds

Loss: 0.3901

Train Accuracy: 86.07%

Test Accuracy: 79.16%

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 1.5793826580047607 seconds

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

total runtime to train this model was 25.858211040496826 seconds

Hyperparameteres for model 1 at epoch 65



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 1.5602493286132812 seconds

LR changed during epoch: 6.82e-06 -> 5.05e-06

total runtime to train this model was 25.830848217010498 seconds

Hyperparameteres for model 4 at epoch 65

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.236295700073242 seconds

Loss: 0.2871

Train Accuracy: 89.91%

Test Accuracy: 78.29%

Google Drive already mounted.

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

--- Population Update (Epoch 65) ---

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

Top performers: [79.16]

Bottom performers: [70.72]

Member 1: lr changed from 0.001000000000000002 to 0.0007014734000586536

Member 1: weight\_decay changed from 0.07408303788033345 to 0.04881334631227943

Member 1: drop\_path changed from 0.3299365794063248 to 0.4132635799578177

Member 1 copied from 0

LR=7.01e-04, WD=0.049, DropPath=0.413, Warmup=5 epochs, Batch=256

=====

Epoch 65 Summary:

=====

Time: 150.16s (Avg member: 30.03s)

Population Mean Accuracy: 77.15%

Best Member Accuracy: 79.16%

Mean Batch Size: 256

Mean Learning Rate: 5.64e-04

Mean Weight Decay: 0.088

=====

Epoch 66/70

=====

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

built data in 1.5697216987609863 seconds

LR changed during epoch: 1.08e-05 -> 7.29e-06

total runtime to train this model was 25.554024696350098 seconds

Hyperparameteres for model 0 at epoch 66

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.345313310623169 seconds

Loss: 0.3915

Train Accuracy: 86.28%

Test Accuracy: 78.93%

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 1.594529628753662 seconds

LR changed during epoch: 7.16e-07 -> 1.41e-04

total runtime to train this model was 25.754485607147217 seconds

Hyperparameteres for model 1 at epoch 66

lr: 0.0007014734000586536

weight\_decay: 0.04881334631227943

drop\_path: 0.4132635799578177

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0931577682495117 seconds

Loss: 0.4648

Train Accuracy: 83.54%

Test Accuracy: 78.53%

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 1.6585283279418945 seconds

LR changed during epoch: 9.34e-06 -> 6.34e-06

total runtime to train this model was 25.657557487487793 seconds

Hyperparameteres for model 2 at epoch 66

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6522881984710693 seconds

Loss: 0.4392

Train Accuracy: 84.56%

Test Accuracy: 79.16%

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 1.5650849342346191 seconds

LR changed during epoch: 9.44e-06 -> 6.41e-06

total runtime to train this model was 25.716368675231934 seconds

Hyperparameteres for model 3 at epoch 66

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.297942638397217 seconds

Loss: 0.2204

Train Accuracy: 92.24%

Test Accuracy: 78.45%

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 1.5801455974578857 seconds

LR changed during epoch: 5.05e-06 -> 3.60e-06

total runtime to train this model was 25.66894793510437 seconds

Hyperparameteres for model 4 at epoch 66

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.318676710128784 seconds

Loss: 0.2887

Train Accuracy: 89.84%

Test Accuracy: 78.40%

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: 150.25s (Avg member: 30.05s)

Population Mean Accuracy: 78.69%

Best Member Accuracy: 79.16%

Mean Batch Size: 256

Mean Learning Rate: 5.64e-04

Mean Weight Decay: 0.088

=====

Epoch 67/70

=====

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

built data in 1.6095352172851562 seconds

LR changed during epoch: 7.29e-06 -> 4.54e-06

total runtime to train this model was 25.601481914520264 seconds

Hyperparameteres for model 0 at epoch 67

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2748541831970215 seconds

Loss: 0.3862

Train Accuracy: 86.25%

Test Accuracy: 78.96%

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 1.7352261543273926 seconds

LR changed during epoch: 1.41e-04 -> 2.81e-04

total runtime to train this model was 25.181031465530396 seconds

Hyperparameteres for model 1 at epoch 67

lr: 0.0007014734000586536

weight\_decay: 0.04881334631227943

drop\_path: 0.4132635799578177

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.6169095039367676 seconds

Loss: 0.5130

Train Accuracy: 81.69%

Test Accuracy: 77.26%

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 1.590221881866455 seconds

LR changed during epoch: 6.34e-06 -> 4.01e-06

total runtime to train this model was 25.781326293945312 seconds

Hyperparameteres for model 2 at epoch 67

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3224713802337646 seconds

Loss: 0.4375

Train Accuracy: 84.51%

Test Accuracy: 79.11%

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 1.5750343799591064 seconds  
LR changed during epoch: 6.41e-06 -> 4.04e-06  
total runtime to train this model was 25.353193044662476 seconds  
Hyperparameteres for model 3 at epoch 67  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4910874366760254 seconds  
Loss: 0.2197  
Train Accuracy: 92.28%  
Test Accuracy: 78.49%  
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 1.5624346733093262 seconds  
LR changed during epoch: 3.60e-06 -> 2.46e-06  
total runtime to train this model was 25.407662391662598 seconds  
Hyperparameteres for model 4 at epoch 67  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3840503692626953 seconds  
Loss: 0.2828  
Train Accuracy: 89.90%  
Test Accuracy: 78.48%  
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: 149.70s (Avg member: 29.94s)  
Population Mean Accuracy: 78.46%  
Best Member Accuracy: 79.11%  
Mean Batch Size: 256  
Mean Learning Rate: 5.64e-04  
Mean Weight Decay: 0.088

=====

Epoch 68/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5761804580688477 seconds

LR changed during epoch: 4.54e-06 -> 2.57e-06  
total runtime to train this model was 25.447294235229492 seconds  
Hyperparameteres for model 0 at epoch 68  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7483906745910645 seconds

Loss: 0.3798  
Train Accuracy: 86.61%  
Test Accuracy: 78.95%

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 1.7132048606872559 seconds  
LR changed during epoch: 2.81e-04 -> 4.22e-04  
total runtime to train this model was 25.453400135040283 seconds  
Hyperparameteres for model 1 at epoch 68  
lr: 0.0007014734000586536

weight\_decay: 0.04881334631227943

drop\_path: 0.4132635799578177

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.132716655731201 seconds

Loss: 0.5741  
Train Accuracy: 79.57%  
Test Accuracy: 76.15%

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 1.5597522258758545 seconds  
LR changed during epoch: 4.01e-06 -> 2.34e-06  
total runtime to train this model was 25.83719563484192 seconds  
Hyperparameteres for model 2 at epoch 68  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.436100959777832 seconds

Loss: 0.4354

Train Accuracy: 84.45%  
Test Accuracy: 79.22%  
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 1.5585715770721436 seconds  
LR changed during epoch: 4.04e-06 -> 2.35e-06  
total runtime to train this model was 25.766965627670288 seconds  
Hyperparameteres for model 3 at epoch 68  
lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.43830943107605 seconds  
Loss: 0.2171  
Train Accuracy: 92.30%  
Test Accuracy: 78.43%  
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 1.588073968887329 seconds  
LR changed during epoch: 2.46e-06 -> 1.65e-06  
total runtime to train this model was 25.78772473335266 seconds  
Hyperparameteres for model 4 at epoch 68  
lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3567755222320557 seconds  
Loss: 0.2868  
Train Accuracy: 89.90%  
Test Accuracy: 78.40%  
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: 150.67s (Avg member: 30.13s)  
Population Mean Accuracy: 78.23%  
Best Member Accuracy: 79.22%  
Mean Batch Size: 256  
Mean Learning Rate: 5.64e-04  
Mean Weight Decay: 0.088

=====

Epoch 69/70

---

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

built data in 1.7760052680969238 seconds

LR changed during epoch: 2.57e-06 -> 1.39e-06

total runtime to train this model was 25.07945156097412 seconds

Hyperparameteres for model 0 at epoch 69

lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.5225625038146973 seconds

Loss: 0.3843

Train Accuracy: 86.38%

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 1.5677204132080078 seconds

LR changed during epoch: 4.22e-04 -> 5.62e-04

total runtime to train this model was 25.60156798362732 seconds

Hyperparameteres for model 1 at epoch 69

lr: 0.0007014734000586536

weight\_decay: 0.04881334631227943

drop\_path: 0.4132635799578177

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3822667598724365 seconds

Loss: 0.6201

Train Accuracy: 77.90%

Test Accuracy: 75.38%

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 1.5601747035980225 seconds

LR changed during epoch: 2.34e-06 -> 1.33e-06

total runtime to train this model was 25.542366981506348 seconds

Hyperparameteres for model 2 at epoch 69

lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.410208225250244 seconds

Loss: 0.4355

Train Accuracy: 84.78%

Test Accuracy: 79.23%

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 1.5795269012451172 seconds

LR changed during epoch: 2.35e-06 -> 1.34e-06

total runtime to train this model was 26.08410620689392 seconds

Hyperparameteres for model 3 at epoch 69

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.504953622817993 seconds

Loss: 0.2155

Train Accuracy: 92.45%

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 1.593266487121582 seconds

LR changed during epoch: 1.65e-06 -> 1.16e-06

total runtime to train this model was 25.266533851623535 seconds

Hyperparameteres for model 4 at epoch 69

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0086770057678223 seconds

Loss: 0.2828

Train Accuracy: 90.05%

Test Accuracy: 78.26%

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: 150.71s (Avg member: 30.14s)

Population Mean Accuracy: 78.07%

Best Member Accuracy: 79.23%

Mean Batch Size: 256  
Mean Learning Rate: 5.64e-04  
Mean Weight Decay: 0.088

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7183375358581543 seconds  
LR changed during epoch: 1.39e-06 -> 1.00e-06  
total runtime to train this model was 24.880046844482422 seconds  
Hyperparameteres for model 0 at epoch 70  
lr: 0.0006782416715044019

weight\_decay: 0.14890877193751148

drop\_path: 0.25806391713579274

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8270580768585205 seconds  
Loss: 0.3784  
Train Accuracy: 86.47%  
Test Accuracy: 79.02%

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 1.5669054985046387 seconds  
LR changed during epoch: 5.62e-04 -> 7.01e-04  
total runtime to train this model was 25.547723054885864 seconds  
Hyperparameteres for model 1 at epoch 70  
lr: 0.0007014734000586536

weight\_decay: 0.04881334631227943

drop\_path: 0.4132635799578177

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.235506534576416 seconds  
Loss: 0.6699  
Train Accuracy: 76.12%  
Test Accuracy: 73.08%

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 1.5689418315887451 seconds  
LR changed during epoch: 1.33e-06 -> 1.00e-06  
total runtime to train this model was 25.262237787246704 seconds  
Hyperparameteres for model 2 at epoch 70  
lr: 0.0005761935801264503

weight\_decay: 0.1354380062306811

drop\_path: 0.4387702458061118

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2628419399261475 seconds

Loss: 0.4363

Train Accuracy: 84.56%

Test Accuracy: 79.16%

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 1.571901559829712 seconds

LR changed during epoch: 1.34e-06 -> 1.00e-06

total runtime to train this model was 25.834696769714355 seconds

Hyperparameteres for model 3 at epoch 70

lr: 0.0005832876162076942

weight\_decay: 0.06881561531524874

drop\_path: 0.08323777141836364

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.352099657058716 seconds

Loss: 0.2141

Train Accuracy: 92.48%

Test Accuracy: 78.41%

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 1.6334760189056396 seconds

LR changed during epoch: 1.16e-06 -> 1.00e-06

total runtime to train this model was 25.107131242752075 seconds

Hyperparameteres for model 4 at epoch 70

lr: 0.0002804193304595399

weight\_decay: 0.03654601866836071

drop\_path: 0.021637958490999254

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.852046489715576 seconds

Loss: 0.2868

Train Accuracy: 90.02%

Test Accuracy: 78.39%

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: [79.16]

Bottom performers: [73.08]

Member 1: lr changed from 0.0007014734000586536 to 0.0007488852210148119

Member 1: weight\_decay changed from 0.04881334631227943 to 0.05325246044596436

Member 1: drop\_path changed from 0.4132635799578177 to 0.4258897552299943

Member 1 copied from 2

LR=7.49e-04, WD=0.053, DropPath=0.426, Warmup=5 epochs, Batch=256

=====  
Epoch 70 Summary:  
=====

Time: 148.47s (Avg member: 29.69s)

Population Mean Accuracy: 77.61%

Best Member Accuracy: 79.16%

Mean Batch Size: 256

Mean Learning Rate: 5.73e-04

Mean Weight Decay: 0.089

=====  
PBT TRAINING COMPLETE  
=====

Best member: 2

Best accuracy: 79.16%

Best hyperparameters:

Learning Rate: 5.76e-04

Weight Decay: 0.135

Drop Path Rate: 0.439

Warmup Epochs: 5

Batch Size: 256

=====  
PBT TIMING REPORT  
=====

Overall Statistics Value

Total runtime 10638.45s (177.31 min)

Number of epochs 70

Number of population updates 14

Epoch Timing Value

Average epoch time 151.97s

2.91s

Min epoch time 148.47s (epoch 70)

Max epoch time 171.90s (epoch 1)

Member Training Timing Value

Average member time per epoch 30.39s

Total training time 10637.75s

Training efficiency 100.0%

Population Update Timing Value

Average update time 0.01s

Total update time 0.20s

Update efficiency 0.0%

Batch Size Analysis	Avg Time	Samples
<hr/>		
Batch size 256	30.39s	350
Per-Member Statistics	Avg Time	Total Time
<hr/>		
Member 0	30.45s	2131.79s
Member 1	30.44s	2131.09s
Member 2	30.36s	2125.25s
Member 3	30.36s	2125.03s
Member 4	30.35s	2124.59s
<hr/>		

Experiment completed successfully!

Results saved to: pbt\_vit\_timing\_results.png

Detailed timing saved to: pbt\_detailed\_timing.png