

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 not mounted. Mounting now...  
Mounted at /content/drive  
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) ---  
█ 0%| 0.00/170M [00:00<?, ?B/s] █ 0%| 65.5k/170M [00:00<04:24, 643kB/s] █ 0%| 229k/170M [00:00  
built data in 7.242753505706787 seconds  
/tmp/ipython-input-158776463.py:694: FutureWarning: `torch.cuda.amp.autocast(args...)` is deprecated. Please use `torch.a  
with torch.cuda.amp.autocast(enabled=torch.cuda.is\_available()):  
LR changed during epoch: 1.93e-07 -> 3.81e-05  
total runtime to train this model was 25.36372184753418 seconds  
Hyperparameteres for model 0 at epoch 1  
lr: 0.0001894099367645819

weight\_decay: 0.2929517642793557

drop\_path: 0.30758866767960447

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.166985034942627 seconds

Loss: 2.0628  
Train Accuracy: 22.78%  
Test Accuracy: 30.97%

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Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5984299182891846 seconds  
LR changed during epoch: 2.66e-07 -> 5.25e-05  
total runtime to train this model was 24.825141429901123 seconds  
Hyperparameteres for model 1 at epoch 1  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.0643370151519775 seconds  
Loss: 2.0400  
Train Accuracy: 23.80%  
Test Accuracy: 31.20%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.541123628616333 seconds  
LR changed during epoch: 4.75e-07 -> 9.36e-05  
total runtime to train this model was 25.769479751586914 seconds  
Hyperparameteres for model 2 at epoch 1  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3147547245025635 seconds  
Loss: 2.0106  
Train Accuracy: 25.24%  
Test Accuracy: 31.66%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7199785709381104 seconds  
LR changed during epoch: 3.22e-07 -> 6.34e-05  
total runtime to train this model was 25.652008533477783 seconds  
Hyperparameteres for model 3 at epoch 1  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.868828296661377 seconds  
Loss: 2.0363  
Train Accuracy: 23.82%  
Test Accuracy: 29.31%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.585087776184082 seconds  
LR changed during epoch: 3.64e-07 -> 7.17e-05  
total runtime to train this model was 26.570323944091797 seconds  
Hyperparameteres for model 4 at epoch 1  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7362070083618164 seconds

Loss: 2.0207

Train Accuracy: 24.57%

Test Accuracy: 30.69%

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Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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Epoch 1 Summary:

=====

Time: 173.62s (Avg member: 34.72s)

Population Mean Accuracy: 30.77%

Best Member Accuracy: 31.66%

Mean Batch Size: 256

Mean Learning Rate: 3.18e-04

Mean Weight Decay: 0.317

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Epoch 2/70

=====

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

built data in 1.6759214401245117 seconds

LR changed during epoch: 3.81e-05 -> 7.60e-05

total runtime to train this model was 25.936567068099976 seconds

Hyperparameteres for model 0 at epoch 2

lr: 0.0001894099367645819

weight\_decay: 0.2929517642793557

drop\_path: 0.30758866767960447

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.0439140796661377 seconds

Loss: 1.8502

Train Accuracy: 31.74%

Test Accuracy: 33.81%

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Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.7143490314483643 seconds

LR changed during epoch: 5.25e-05 -> 1.05e-04

total runtime to train this model was 26.27248787879944 seconds

Hyperparameteres for model 1 at epoch 2

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.819484233856201 seconds  
Loss: 1.8282  
Train Accuracy: 31.85%  
Test Accuracy: 35.32%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.601736307144165 seconds  
LR changed during epoch: 9.36e-05 -> 1.87e-04  
total runtime to train this model was 26.230271816253662 seconds  
Hyperparameteres for model 2 at epoch 2  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2516586780548096 seconds  
Loss: 1.7839  
Train Accuracy: 33.61%  
Test Accuracy: 33.85%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5920865535736084 seconds  
LR changed during epoch: 6.34e-05 -> 1.27e-04  
total runtime to train this model was 26.06878972053528 seconds  
Hyperparameteres for model 3 at epoch 2  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.286827564239502 seconds  
Loss: 1.8146  
Train Accuracy: 32.42%  
Test Accuracy: 35.16%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5985796451568604 seconds  
LR changed during epoch: 7.17e-05 -> 1.43e-04  
total runtime to train this model was 25.8381609916687 seconds

Hyperparameteres for model 4 at epoch 2

lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3024559020996094 seconds

Loss: 1.7982

Train Accuracy: 33.10%

Test Accuracy: 36.44%

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Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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Epoch 2 Summary:

=====

Time: 152.40s (Avg member: 30.48s)

Population Mean Accuracy: 34.92%

Best Member Accuracy: 36.44%

Mean Batch Size: 256

Mean Learning Rate: 3.18e-04

Mean Weight Decay: 0.317

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Epoch 3/70

=====

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

built data in 1.5978918075561523 seconds

LR changed during epoch: 7.60e-05 -> 1.14e-04

total runtime to train this model was 25.503695011138916 seconds

Hyperparameteres for model 0 at epoch 3

lr: 0.0001894099367645819

weight\_decay: 0.2929517642793557

drop\_path: 0.30758866767960447

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2233541011810303 seconds

Loss: 1.7476

Train Accuracy: 35.22%

Test Accuracy: 36.24%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.699404239654541 seconds

LR changed during epoch: 1.05e-04 -> 1.57e-04

total runtime to train this model was 24.811631202697754 seconds

Hyperparameteres for model 1 at epoch 3

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825  
drop\_path: 0.2988852362414701  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8362815380096436 seconds  
Loss: 1.7242  
Train Accuracy: 35.94%  
Test Accuracy: 39.24%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7234492301940918 seconds  
LR changed during epoch: 1.87e-04 -> 2.80e-04  
total runtime to train this model was 24.038562774658203 seconds  
Hyperparameteres for model 2 at epoch 3  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.36803936958313 seconds  
Loss: 1.6633  
Train Accuracy: 38.51%  
Test Accuracy: 40.35%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.578310489654541 seconds  
LR changed during epoch: 1.27e-04 -> 1.90e-04  
total runtime to train this model was 24.316356897354126 seconds  
Hyperparameteres for model 3 at epoch 3  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.78167462348938 seconds  
Loss: 1.6950  
Train Accuracy: 37.16%  
Test Accuracy: 40.98%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

```
--- Training Member 4 (Batch size: 256) ---
built data in 1.5775082111358643 seconds
LR changed during epoch: 1.43e-04 -> 2.14e-04
total runtime to train this model was 25.170960903167725 seconds
Hyperparameteres for model 4 at epoch 3
lr: 0.0003565125943597626

weight_decay: 0.4336340708432141
drop_path: 0.25432892395471046
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.300874710083008 seconds
Loss: 1.6914
Train Accuracy: 37.00%
Test Accuracy: 39.69%
Google Drive already mounted.
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_4_seed_38042.pt

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Epoch 3 Summary:
=====
Time: 146.79s (Avg member: 29.36s)
Population Mean Accuracy: 39.30%
Best Member Accuracy: 40.98%
Mean Batch Size: 256
Mean Learning Rate: 3.18e-04
Mean Weight Decay: 0.317

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

--- Training Member 0 (Batch size: 256) ---
built data in 1.5914392471313477 seconds
LR changed during epoch: 1.14e-04 -> 1.52e-04
total runtime to train this model was 25.073079586029053 seconds
Hyperparameteres for model 0 at epoch 4
lr: 0.0001894099367645819

weight_decay: 0.2929517642793557
drop_path: 0.30758866767960447
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.2448108196258545 seconds
Loss: 1.6573
Train Accuracy: 38.77%
Test Accuracy: 40.28%
Google Drive already mounted.
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_38042.pt

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

built data in 1.581028938293457 seconds  
LR changed during epoch: 1.57e-04 -> 2.09e-04  
total runtime to train this model was 24.912885904312134 seconds  
Hyperparameteres for model 1 at epoch 4  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.201359510421753 seconds  
Loss: 1.6292  
Train Accuracy: 40.02%  
Test Accuracy: 42.71%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5854201316833496 seconds  
LR changed during epoch: 2.80e-04 -> 3.73e-04  
total runtime to train this model was 25.261857271194458 seconds  
Hyperparameteres for model 2 at epoch 4  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2140069007873535 seconds  
Loss: 1.5588  
Train Accuracy: 42.81%  
Test Accuracy: 46.64%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.58115816116333 seconds  
LR changed during epoch: 1.90e-04 -> 2.53e-04  
total runtime to train this model was 25.673259258270264 seconds  
Hyperparameteres for model 3 at epoch 4  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.27079176902771 seconds

Loss: 1.5848  
Train Accuracy: 41.49%  
Test Accuracy: 44.39%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6006391048431396 seconds  
LR changed during epoch: 2.14e-04 -> 2.86e-04  
total runtime to train this model was 25.35696005821228 seconds  
Hyperparameteres for model 4 at epoch 4  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2951228618621826 seconds

Loss: 1.5892  
Train Accuracy: 41.58%  
Test Accuracy: 44.06%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

Time: 146.65s (Avg member: 29.33s)  
Population Mean Accuracy: 43.62%  
Best Member Accuracy: 46.64%  
Mean Batch Size: 256  
Mean Learning Rate: 3.18e-04  
Mean Weight Decay: 0.317

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7346649169921875 seconds  
LR changed during epoch: 1.52e-04 -> 1.89e-04  
total runtime to train this model was 24.576084852218628 seconds  
Hyperparameteres for model 0 at epoch 5  
lr: 0.0001894099367645819

weight\_decay: 0.2929517642793557

drop\_path: 0.30758866767960447

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.937455177307129 seconds  
Loss: 1.5708  
Train Accuracy: 42.39%

Test Accuracy: 46.36%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6843218803405762 seconds  
LR changed during epoch: 2.09e-04 -> 2.61e-04  
total runtime to train this model was 24.209485292434692 seconds  
Hyperparameteres for model 1 at epoch 5  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825  
drop\_path: 0.2988852362414701  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0987954139709473 seconds  
Loss: 1.5315  
Train Accuracy: 44.28%  
Test Accuracy: 47.10%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5689778327941895 seconds  
LR changed during epoch: 3.73e-04 -> 4.66e-04  
total runtime to train this model was 25.22209119796753 seconds  
Hyperparameteres for model 2 at epoch 5  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2859597206115723 seconds  
Loss: 1.4834  
Train Accuracy: 45.72%  
Test Accuracy: 48.20%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5726730823516846 seconds  
LR changed during epoch: 2.53e-04 -> 3.16e-04  
total runtime to train this model was 24.882221460342407 seconds  
Hyperparameteres for model 3 at epoch 5  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.198965549468994 seconds  
Loss: 1.4976  
Train Accuracy: 45.48%  
Test Accuracy: 47.55%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5688717365264893 seconds  
LR changed during epoch: 2.86e-04 -> 3.57e-04  
total runtime to train this model was 25.069647550582886 seconds  
Hyperparameteres for model 4 at epoch 5  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.194180965423584 seconds  
Loss: 1.5027  
Train Accuracy: 44.86%  
Test Accuracy: 46.84%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

==== PBT Exploit & Explore ====  
Top performers: [48.2]  
Bottom performers: [46.36]  
Member 0: lr changed from 0.0001894099367645819 to 0.0002502213586795585  
Member 0: weight\_decay changed from 0.2929517642793557 to 0.2354276243690006  
Member 0: drop\_path changed from 0.30758866767960447 to 0.32647451212245726  
Member 0 copied from 2  
LR=2.50e-04, WD=0.235, DropPath=0.326, Warmup=5 epochs, Batch=256

=====  
Epoch 5 Summary:  
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Time: 145.98s (Avg member: 29.19s)  
Population Mean Accuracy: 47.21%  
Best Member Accuracy: 48.20%  
Mean Batch Size: 256  
Mean Learning Rate: 3.30e-04  
Mean Weight Decay: 0.305

=====  
Epoch 6/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5735464096069336 seconds  
LR changed during epoch: 2.55e-07 -> 5.03e-05

total runtime to train this model was 24.995186805725098 seconds

Hyperparameteres for model 0 at epoch 6

lr: 0.0002502213586795585

weight\_decay: 0.2354276243690006

drop\_path: 0.32647451212245726

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3040547370910645 seconds

Loss: 1.3732

Train Accuracy: 50.37%

Test Accuracy: 51.95%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.5737860202789307 seconds

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

total runtime to train this model was 25.430089235305786 seconds

Hyperparameteres for model 1 at epoch 6

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.215258836746216 seconds

Loss: 1.4612

Train Accuracy: 46.93%

Test Accuracy: 50.26%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.6239550113677979 seconds

LR changed during epoch: 4.66e-04 -> 4.66e-04

total runtime to train this model was 25.298576593399048 seconds

Hyperparameteres for model 2 at epoch 6

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3429644107818604 seconds

Loss: 1.4218

Train Accuracy: 48.33%

Test Accuracy: 50.77%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7423515319824219 seconds  
LR changed during epoch: 3.16e-04 -> 3.15e-04  
total runtime to train this model was 24.912054300308228 seconds  
Hyperparameteres for model 3 at epoch 6  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.191319465637207 seconds  
Loss: 1.4338  
Train Accuracy: 47.88%  
Test Accuracy: 50.50%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.668445348739624 seconds  
LR changed during epoch: 3.57e-04 -> 3.56e-04  
total runtime to train this model was 25.141125202178955 seconds  
Hyperparameteres for model 4 at epoch 6  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141  
drop\_path: 0.25432892395471046  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.759995222091675 seconds  
Loss: 1.4421  
Train Accuracy: 47.58%  
Test Accuracy: 49.83%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 6 Summary:

=====

Time: 148.04s (Avg member: 29.61s)  
Population Mean Accuracy: 50.66%  
Best Member Accuracy: 51.95%  
Mean Batch Size: 256  
Mean Learning Rate: 3.30e-04  
Mean Weight Decay: 0.305

=====

Epoch 7/70

=====

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

built data in 1.57710862159729 seconds

LR changed during epoch: 5.03e-05 -> 1.00e-04

total runtime to train this model was 25.782474279403687 seconds

Hyperparameteres for model 0 at epoch 7

lr: 0.0002502213586795585

weight\_decay: 0.2354276243690006

drop\_path: 0.32647451212245726

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2759342193603516 seconds

Loss: 1.3209

Train Accuracy: 52.01%

Test Accuracy: 51.30%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.6167969703674316 seconds

LR changed during epoch: 2.61e-04 -> 2.60e-04

total runtime to train this model was 25.538357257843018 seconds

Hyperparameteres for model 1 at epoch 7

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2167913913726807 seconds

Loss: 1.3983

Train Accuracy: 49.14%

Test Accuracy: 51.01%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.577817678451538 seconds

LR changed during epoch: 4.66e-04 -> 4.65e-04

total runtime to train this model was 25.23979163169861 seconds

Hyperparameteres for model 2 at epoch 7

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.196589708328247 seconds  
Loss: 1.3734  
Train Accuracy: 50.25%  
Test Accuracy: 52.44%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5830557346343994 seconds  
LR changed during epoch: 3.15e-04 -> 3.15e-04  
total runtime to train this model was 25.139973163604736 seconds  
Hyperparameteres for model 3 at epoch 7  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
  
drop\_path: 0.20632463667325823  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.213634729385376 seconds  
Loss: 1.3712  
Train Accuracy: 50.43%  
Test Accuracy: 50.83%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5704460144042969 seconds  
LR changed during epoch: 3.56e-04 -> 3.56e-04  
total runtime to train this model was 25.588647603988647 seconds  
Hyperparameteres for model 4 at epoch 7  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141  
  
drop\_path: 0.25432892395471046  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1916513442993164 seconds  
Loss: 1.3828  
Train Accuracy: 49.75%  
Test Accuracy: 50.63%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 7 Summary:

=====

Time: 147.45s (Avg member: 29.49s)  
Population Mean Accuracy: 51.24%  
Best Member Accuracy: 52.44%  
Mean Batch Size: 256

Mean Learning Rate: 3.30e-04  
Mean Weight Decay: 0.305

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7108509540557861 seconds  
LR changed during epoch: 1.00e-04 -> 1.50e-04  
total runtime to train this model was 24.79181456565857 seconds  
Hyperparameteres for model 0 at epoch 8  
lr: 0.0002502213586795585

weight\_decay: 0.2354276243690006

drop\_path: 0.32647451212245726

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6509666442871094 seconds  
Loss: 1.3089  
Train Accuracy: 52.58%  
Test Accuracy: 53.10%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.7555298805236816 seconds  
LR changed during epoch: 2.60e-04 -> 2.60e-04  
total runtime to train this model was 24.592437982559204 seconds  
Hyperparameteres for model 1 at epoch 8  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2898929119110107 seconds  
Loss: 1.3537  
Train Accuracy: 50.90%  
Test Accuracy: 52.93%  
Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.584458351135254 seconds  
LR changed during epoch: 4.65e-04 -> 4.63e-04  
total runtime to train this model was 25.34279465675354 seconds  
Hyperparameteres for model 2 at epoch 8  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.240734100341797 seconds  
Loss: 1.3186  
Train Accuracy: 51.94%  
Test Accuracy: 52.79%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6018939018249512 seconds  
LR changed during epoch: 3.15e-04 -> 3.14e-04  
total runtime to train this model was 24.769374132156372 seconds  
Hyperparameteres for model 3 at epoch 8  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1942451000213623 seconds  
Loss: 1.3415  
Train Accuracy: 51.46%  
Test Accuracy: 54.47%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.574110984802246 seconds  
LR changed during epoch: 3.56e-04 -> 3.55e-04  
total runtime to train this model was 25.00540852546692 seconds  
Hyperparameteres for model 4 at epoch 8  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2591609954833984 seconds  
Loss: 1.3446  
Train Accuracy: 51.40%  
Test Accuracy: 52.05%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 8 Summary:

Time: 146.55s (Avg member: 29.31s)  
Population Mean Accuracy: 53.07%  
Best Member Accuracy: 54.47%  
Mean Batch Size: 256  
Mean Learning Rate: 3.30e-04  
Mean Weight Decay: 0.305

Epoch 9/70

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.573241949081421 seconds
LR changed during epoch: 1.50e-04 -> 2.00e-04
total runtime to train this model was 24.844953536987305 seconds
Hyperparameteres for model 0 at epoch 9
lr: 0.0002502213586795585
```

weight\_decay: 0.2354276243690006

drop path: 0.32647451212245726

warmup\_epochs: 5

batch size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2102127075195312 seconds

Loss: 1.3003

Train Accuracy: 52.89%

Test Accuracy: 54.49%

Google Drive already mounted.

#### **Table 1. Model 1 (Poisson, $\alpha = 0.05$ )**

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

built data in 1.5883259773254395 seconds

LR changed during epoch: 2.60e-04 -> 2.59e-04

The total runtime to train this model was 24.672 hours.

## Hyperparameters for model

weight\_decay: 0.4251200264873825

drop\\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

end of

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

evaluation in 2.19436383

Loss: 1.3192

Train Accuracy: 52.15%

Test Accuracy: 55.32%  
Google Drive already mounted.

Member 1: Checkpoint saved to /content/d

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

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6125695705413818 seconds

LR changed during epoch: 4.63e-04 -> 4.61e-04

Hyperparameteres for model 2 at epoch 9

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.186967372894287 seconds

Loss: 1.2831

Train Accuracy: 53.98%

Test Accuracy: 54.83%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.614332675933838 seconds

LR changed during epoch: 3.14e-04 -> 3.13e-04

total runtime to train this model was 24.52148747444153 seconds

Hyperparameteres for model 3 at epoch 9

lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.289050340652466 seconds

Loss: 1.3024

Train Accuracy: 52.90%

Test Accuracy: 53.47%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.6833443641662598 seconds

LR changed during epoch: 3.55e-04 -> 3.53e-04

total runtime to train this model was 24.333030223846436 seconds

Hyperparameteres for model 4 at epoch 9

lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.875833749771118 seconds

Loss: 1.3155

Train Accuracy: 52.57%

Test Accuracy: 52.58%

Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

Time: 144.31s (Avg member: 28.86s)  
Population Mean Accuracy: 54.14%  
Best Member Accuracy: 55.32%  
Mean Batch Size: 256  
Mean Learning Rate: 3.30e-04  
Mean Weight Decay: 0.305

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6960222721099854 seconds  
LR changed during epoch: 2.00e-04 -> 2.50e-04  
total runtime to train this model was 24.0449435710907 seconds  
Hyperparameteres for model 0 at epoch 10  
lr: 0.0002502213586795585

weight\_decay: 0.2354276243690006

drop\_path: 0.32647451212245726

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.5083162784576416 seconds

Loss: 1.2952  
Train Accuracy: 53.22%  
Test Accuracy: 53.50%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5777716636657715 seconds  
LR changed during epoch: 2.59e-04 -> 2.57e-04  
total runtime to train this model was 24.804471015930176 seconds  
Hyperparameteres for model 1 at epoch 10  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7468950748443604 seconds

Loss: 1.2912  
Train Accuracy: 53.38%  
Test Accuracy: 54.95%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6588342189788818 seconds  
LR changed during epoch: 4.61e-04 -> 4.59e-04  
total runtime to train this model was 25.777259588241577 seconds  
Hyperparameteres for model 2 at epoch 10  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.275439739227295 seconds  
Loss: 1.2453  
Train Accuracy: 54.97%  
Test Accuracy: 57.56%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.583972454071045 seconds  
LR changed during epoch: 3.13e-04 -> 3.11e-04  
total runtime to train this model was 25.446786165237427 seconds  
Hyperparameteres for model 3 at epoch 10  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2249255180358887 seconds  
Loss: 1.2659  
Train Accuracy: 54.34%  
Test Accuracy: 56.62%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5810978412628174 seconds  
LR changed during epoch: 3.53e-04 -> 3.51e-04  
total runtime to train this model was 25.4944589138031 seconds  
Hyperparameteres for model 4 at epoch 10  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.263249397277832 seconds  
Loss: 1.2879  
Train Accuracy: 53.42%  
Test Accuracy: 55.12%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

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

Top performers: [57.56]  
Bottom performers: [53.5]  
Member 0: lr changed from 0.0002502213586795585 to 0.00032852039018270755  
Member 0: weight\_decay changed from 0.2354276243690006 to 0.28055952036243514  
Member 0: drop\_path changed from 0.32647451212245726 to 0.27458284474522676  
Member 0 copied from 2  
LR=3.29e-04, WD=0.281, DropPath=0.275, Warmup=5 epochs, Batch=256

=====  
Epoch 10 Summary:  
=====

Time: 147.85s (Avg member: 29.57s)  
Population Mean Accuracy: 55.55%  
Best Member Accuracy: 57.56%  
Mean Batch Size: 256  
Mean Learning Rate: 3.45e-04  
Mean Weight Decay: 0.314

=====  
Epoch 11/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5885558128356934 seconds  
LR changed during epoch: 3.35e-07 -> 6.60e-05  
total runtime to train this model was 26.07524013519287 seconds  
Hyperparameteres for model 0 at epoch 11  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.248558521270752 seconds  
Loss: 1.1470  
Train Accuracy: 58.75%  
Test Accuracy: 59.48%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.7083282470703125 seconds  
LR changed during epoch: 2.57e-04 -> 2.56e-04  
total runtime to train this model was 25.151814222335815 seconds  
Hyperparameteres for model 1 at epoch 11  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.223106861114502 seconds

Loss: 1.2628

Train Accuracy: 54.34%

Test Accuracy: 56.08%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.6037821769714355 seconds

LR changed during epoch: 4.59e-04 -> 4.56e-04

total runtime to train this model was 25.50357222557068 seconds

Hyperparameteres for model 2 at epoch 11

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.636547803878784 seconds

Loss: 1.2017

Train Accuracy: 56.59%

Test Accuracy: 57.29%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.5826115608215332 seconds

LR changed during epoch: 3.11e-04 -> 3.09e-04

total runtime to train this model was 25.363142013549805 seconds

Hyperparameteres for model 3 at epoch 11

lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.192944049835205 seconds

Loss: 1.2328

Train Accuracy: 55.51%

Test Accuracy: 55.54%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

```
--- Training Member 4 (Batch size: 256) ---
built data in 1.5675194263458252 seconds
LR changed during epoch: 3.51e-04 -> 3.49e-04
total runtime to train this model was 25.321320295333862 seconds
Hyperparameteres for model 4 at epoch 11
lr: 0.0003565125943597626

weight_decay: 0.4336340708432141
drop_path: 0.25432892395471046
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.2108519077301025 seconds
Loss: 1.2582
Train Accuracy: 54.77%
Test Accuracy: 55.07%
Google Drive already mounted.
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_4_seed_38042.pt

=====
Epoch 11 Summary:
=====
Time: 149.23s (Avg member: 29.85s)
Population Mean Accuracy: 56.69%
Best Member Accuracy: 59.48%
Mean Batch Size: 256
Mean Learning Rate: 3.45e-04
Mean Weight Decay: 0.314

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

--- Training Member 0 (Batch size: 256) ---
built data in 1.580472707748413 seconds
LR changed during epoch: 6.60e-05 -> 1.32e-04
total runtime to train this model was 25.61763310432434 seconds
Hyperparameteres for model 0 at epoch 12
lr: 0.00032852039018270755

weight_decay: 0.28055952036243514
drop_path: 0.27458284474522676
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.2424793243408203 seconds
Loss: 1.1165
Train Accuracy: 59.96%
Test Accuracy: 60.87%
Google Drive already mounted.
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_38042.pt

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

built data in 1.594872236251831 seconds  
LR changed during epoch: 2.56e-04 -> 2.54e-04  
total runtime to train this model was 25.290380477905273 seconds  
Hyperparameteres for model 1 at epoch 12  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2321274280548096 seconds  
Loss: 1.2303  
Train Accuracy: 55.63%  
Test Accuracy: 56.98%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5970864295959473 seconds  
LR changed during epoch: 4.56e-04 -> 4.53e-04  
total runtime to train this model was 25.149790287017822 seconds  
Hyperparameteres for model 2 at epoch 12  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.184094190597534 seconds  
Loss: 1.1731  
Train Accuracy: 57.68%  
Test Accuracy: 57.87%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7054564952850342 seconds  
LR changed during epoch: 3.09e-04 -> 3.07e-04  
total runtime to train this model was 24.312469720840454 seconds  
Hyperparameteres for model 3 at epoch 12  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7761449813842773 seconds

Loss: 1.2070  
Train Accuracy: 56.52%  
Test Accuracy: 57.57%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.735199213027954 seconds  
LR changed during epoch: 3.49e-04 -> 3.46e-04  
total runtime to train this model was 24.468087911605835 seconds  
Hyperparameteres for model 4 at epoch 12  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2807579040527344 seconds

Loss: 1.2352  
Train Accuracy: 55.47%  
Test Accuracy: 57.22%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 12 Summary:

=====

Time: 147.04s (Avg member: 29.41s)  
Population Mean Accuracy: 58.10%  
Best Member Accuracy: 60.87%  
Mean Batch Size: 256  
Mean Learning Rate: 3.45e-04  
Mean Weight Decay: 0.314

=====

Epoch 13/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5799272060394287 seconds  
LR changed during epoch: 1.32e-04 -> 1.97e-04  
total runtime to train this model was 25.188443183898926 seconds  
Hyperparameteres for model 0 at epoch 13  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.455650806427002 seconds  
Loss: 1.1142  
Train Accuracy: 60.21%

Test Accuracy: 60.95%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5867934226989746 seconds  
LR changed during epoch: 2.54e-04 -> 2.51e-04  
total runtime to train this model was 25.20963191986084 seconds  
Hyperparameteres for model 1 at epoch 13  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825  
drop\_path: 0.2988852362414701  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2605702877044678 seconds  
Loss: 1.2084  
Train Accuracy: 56.50%  
Test Accuracy: 57.28%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5873136520385742 seconds  
LR changed during epoch: 4.53e-04 -> 4.49e-04  
total runtime to train this model was 25.473851919174194 seconds  
Hyperparameteres for model 2 at epoch 13  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.203202962875366 seconds  
Loss: 1.1244  
Train Accuracy: 59.94%  
Test Accuracy: 59.57%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.563704013824463 seconds  
LR changed during epoch: 3.07e-04 -> 3.04e-04  
total runtime to train this model was 25.09516477584839 seconds  
Hyperparameteres for model 3 at epoch 13  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2664456367492676 seconds  
Loss: 1.1807  
Train Accuracy: 57.80%  
Test Accuracy: 58.01%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5685524940490723 seconds  
LR changed during epoch: 3.46e-04 -> 3.43e-04  
total runtime to train this model was 24.971617221832275 seconds  
Hyperparameteres for model 4 at epoch 13  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2236835956573486 seconds  
Loss: 1.2019  
Train Accuracy: 57.25%  
Test Accuracy: 57.40%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 13 Summary:

=====

Time: 146.38s (Avg member: 29.28s)  
Population Mean Accuracy: 58.64%  
Best Member Accuracy: 60.95%  
Mean Batch Size: 256  
Mean Learning Rate: 3.45e-04  
Mean Weight Decay: 0.314

=====

Epoch 14/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5749948024749756 seconds  
LR changed during epoch: 1.97e-04 -> 2.63e-04  
total runtime to train this model was 24.996330499649048 seconds  
Hyperparameteres for model 0 at epoch 14  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1926958560943604 seconds  
Loss: 1.1179  
Train Accuracy: 59.78%  
Test Accuracy: 60.34%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6668879985809326 seconds  
LR changed during epoch: 2.51e-04 -> 2.49e-04  
total runtime to train this model was 24.53756809234619 seconds  
Hyperparameteres for model 1 at epoch 14  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.249150276184082 seconds  
Loss: 1.1842  
Train Accuracy: 57.34%  
Test Accuracy: 58.59%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7189908027648926 seconds  
LR changed during epoch: 4.49e-04 -> 4.44e-04  
total runtime to train this model was 24.195406198501587 seconds  
Hyperparameteres for model 2 at epoch 14  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9218344688415527 seconds  
Loss: 1.1016  
Train Accuracy: 60.71%  
Test Accuracy: 61.99%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7650096416473389 seconds  
LR changed during epoch: 3.04e-04 -> 3.01e-04  
total runtime to train this model was 24.28995704650879 seconds  
Hyperparameteres for model 3 at epoch 14  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1699607372283936 seconds

Loss: 1.1567

Train Accuracy: 58.57%

Test Accuracy: 60.66%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.5725207328796387 seconds

LR changed during epoch: 3.43e-04 -> 3.40e-04

total runtime to train this model was 24.849592924118042 seconds

Hyperparameteres for model 4 at epoch 14

lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141

drop\_path: 0.25432892395471046

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.357710838317871 seconds

Loss: 1.1773

Train Accuracy: 57.85%

Test Accuracy: 58.64%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 14 Summary:

=====

Time: 145.30s (Avg member: 29.06s)

Population Mean Accuracy: 60.04%

Best Member Accuracy: 61.99%

Mean Batch Size: 256

Mean Learning Rate: 3.45e-04

Mean Weight Decay: 0.314

=====

Epoch 15/70

=====

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

built data in 1.5667121410369873 seconds

LR changed during epoch: 2.63e-04 -> 3.29e-04

total runtime to train this model was 24.74945831298828 seconds

Hyperparameteres for model 0 at epoch 15

lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1963815689086914 seconds  
Loss: 1.1158  
Train Accuracy: 59.59%  
Test Accuracy: 60.39%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5709288120269775 seconds  
LR changed during epoch: 2.49e-04 -> 2.46e-04  
total runtime to train this model was 24.742658615112305 seconds  
Hyperparameteres for model 1 at epoch 15  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.132943630218506 seconds  
Loss: 1.1598  
Train Accuracy: 58.63%  
Test Accuracy: 59.78%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5722146034240723 seconds  
LR changed during epoch: 4.44e-04 -> 4.39e-04  
total runtime to train this model was 24.891002416610718 seconds  
Hyperparameteres for model 2 at epoch 15  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.208211660385132 seconds  
Loss: 1.0687  
Train Accuracy: 61.78%  
Test Accuracy: 63.24%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.587280035018921 seconds

LR changed during epoch: 3.01e-04 -> 2.98e-04  
total runtime to train this model was 24.907827138900757 seconds  
Hyperparameteres for model 3 at epoch 15  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.159421682357788 seconds  
Loss: 1.1361  
Train Accuracy: 59.40%  
Test Accuracy: 60.56%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5681705474853516 seconds  
LR changed during epoch: 3.40e-04 -> 3.36e-04  
total runtime to train this model was 24.78536057472229 seconds  
Hyperparameteres for model 4 at epoch 15  
lr: 0.0003565125943597626

weight\_decay: 0.4336340708432141  
drop\_path: 0.25432892395471046  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.230344295501709 seconds  
Loss: 1.1476  
Train Accuracy: 59.07%  
Test Accuracy: 59.58%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

==== PBT Exploit & Explore ====  
Top performers: [63.24]  
Bottom performers: [59.58]  
Member 4: lr changed from 0.0003565125943597626 to 0.00048339668238501414  
Member 4: weight\_decay changed from 0.4336340708432141 to 0.43087995867019463  
Member 4: drop\_path changed from 0.25432892395471046 to 0.21179266737018654  
Member 4 copied from 2  
LR=4.83e-04, WD=0.431, DropPath=0.212, Warmup=5 epochs, Batch=256

=====  
Epoch 15 Summary:  
=====

Time: 144.00s (Avg member: 28.80s)  
Population Mean Accuracy: 60.71%  
Best Member Accuracy: 63.24%  
Mean Batch Size: 256

Mean Learning Rate: 3.71e-04  
Mean Weight Decay: 0.314

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5714421272277832 seconds  
LR changed during epoch: 3.29e-04 -> 3.28e-04  
total runtime to train this model was 24.867642402648926 seconds  
Hyperparameteres for model 0 at epoch 16  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2759270668029785 seconds  
Loss: 1.1017  
Train Accuracy: 60.71%  
Test Accuracy: 62.21%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5985698699951172 seconds  
LR changed during epoch: 2.46e-04 -> 2.43e-04  
total runtime to train this model was 24.563851833343506 seconds  
Hyperparameteres for model 1 at epoch 16  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.182199239730835 seconds  
Loss: 1.1399  
Train Accuracy: 59.26%  
Test Accuracy: 59.51%  
Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7284538745880127 seconds  
LR changed during epoch: 4.39e-04 -> 4.34e-04  
total runtime to train this model was 23.845154762268066 seconds  
Hyperparameteres for model 2 at epoch 16  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.492849826812744 seconds  
Loss: 1.0395  
Train Accuracy: 62.81%  
Test Accuracy: 63.65%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.722470998764038 seconds  
LR changed during epoch: 2.98e-04 -> 2.94e-04  
total runtime to train this model was 23.8895263671875 seconds  
Hyperparameteres for model 3 at epoch 16  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7048416137695312 seconds  
Loss: 1.1093  
Train Accuracy: 60.30%  
Test Accuracy: 60.75%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.7137172222137451 seconds  
LR changed during epoch: 4.93e-07 -> 9.72e-05  
total runtime to train this model was 23.464799642562866 seconds  
Hyperparameteres for model 4 at epoch 16  
lr: 0.00048339668238501414

weight\_decay: 0.43087995867019463

drop\_path: 0.21179266737018654  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.322883129119873 seconds  
Loss: 0.9734  
Train Accuracy: 65.41%  
Test Accuracy: 65.42%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 16 Summary:

```
=====
Time: 143.14s (Avg member: 28.63s)
Population Mean Accuracy: 62.31%
Best Member Accuracy: 65.42%
Mean Batch Size: 256
Mean Learning Rate: 3.71e-04
Mean Weight Decay: 0.314
```

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

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.5764594078063965 seconds
LR changed during epoch: 3.28e-04 -> 3.28e-04
total runtime to train this model was 25.06674861907959 seconds
Hyperparameteres for model 0 at epoch 17
lr: 0.00032852039018270755
```

```
weight_decay: 0.28055952036243514
```

```
drop_path: 0.27458284474522676
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.345612049102783 seconds
```

```
Loss: 1.0845
Train Accuracy: 61.28%
Test Accuracy: 62.44%
Google Drive already mounted.
```

```
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_38042.pt
```

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

```
built data in 1.5748839378356934 seconds
LR changed during epoch: 2.43e-04 -> 2.40e-04
total runtime to train this model was 25.02089214324951 seconds
Hyperparameteres for model 1 at epoch 17
lr: 0.0002610457762689696
```

```
weight_decay: 0.4351200264873825
```

```
drop_path: 0.2988852362414701
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.244905948638916 seconds
```

```
Loss: 1.1192
Train Accuracy: 59.92%
Test Accuracy: 60.35%
Google Drive already mounted.
```

```
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_1_seed_38042.pt
```

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

```
built data in 1.565425157546997 seconds
LR changed during epoch: 4.34e-04 -> 4.28e-04
total runtime to train this model was 24.74380874633789 seconds
```

Hyperparameteres for model 2 at epoch 17

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.1620681285858154 seconds

Loss: 1.0117

Train Accuracy: 63.92%

Test Accuracy: 64.65%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.5759689807891846 seconds

LR changed during epoch: 2.94e-04 -> 2.90e-04

total runtime to train this model was 24.83227801322937 seconds

Hyperparameteres for model 3 at epoch 17

lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.1984848976135254 seconds

Loss: 1.0882

Train Accuracy: 61.13%

Test Accuracy: 62.30%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.5641143321990967 seconds

LR changed during epoch: 9.72e-05 -> 1.94e-04

total runtime to train this model was 24.840391635894775 seconds

Hyperparameteres for model 4 at epoch 17

lr: 0.00048339668238501414

weight\_decay: 0.43087995867019463

drop\_path: 0.21179266737018654

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.1885626316070557 seconds

Loss: 0.9514

Train Accuracy: 66.25%

Test Accuracy: 65.64%

Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

Time: 144.64s (Avg member: 28.93s)  
Population Mean Accuracy: 63.08%  
Best Member Accuracy: 65.64%  
Mean Batch Size: 256  
Mean Learning Rate: 3.71e-04  
Mean Weight Decay: 0.314

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6953721046447754 seconds  
LR changed during epoch: 3.28e-04 -> 3.27e-04  
total runtime to train this model was 24.345483779907227 seconds  
Hyperparameteres for model 0 at epoch 18  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7513275146484375 seconds

Loss: 1.0538  
Train Accuracy: 62.36%  
Test Accuracy: 63.45%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.731999397277832 seconds  
LR changed during epoch: 2.40e-04 -> 2.36e-04  
total runtime to train this model was 24.098593950271606 seconds  
Hyperparameteres for model 1 at epoch 18  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1276681423187256 seconds

Loss: 1.1032  
Train Accuracy: 60.58%  
Test Accuracy: 62.20%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5763747692108154 seconds  
LR changed during epoch: 4.28e-04 -> 4.21e-04  
total runtime to train this model was 24.617034912109375 seconds  
Hyperparameteres for model 2 at epoch 18  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2261147499084473 seconds  
Loss: 0.9868  
Train Accuracy: 64.87%  
Test Accuracy: 65.80%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.55598783493042 seconds  
LR changed during epoch: 2.90e-04 -> 2.85e-04  
total runtime to train this model was 24.639612197875977 seconds  
Hyperparameteres for model 3 at epoch 18  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1424598693847656 seconds  
Loss: 1.0729  
Train Accuracy: 61.69%  
Test Accuracy: 62.96%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5782477855682373 seconds  
LR changed during epoch: 1.94e-04 -> 2.91e-04  
total runtime to train this model was 24.735100746154785 seconds  
Hyperparameteres for model 4 at epoch 18  
lr: 0.00048339668238501414

weight\_decay: 0.43087995867019463

drop\_path: 0.21179266737018654

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.130354642868042 seconds  
Loss: 0.9719  
Train Accuracy: 65.27%  
Test Accuracy: 64.80%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 18 Summary:  
=====

Time: 144.11s (Avg member: 28.82s)  
Population Mean Accuracy: 63.84%  
Best Member Accuracy: 65.80%  
Mean Batch Size: 256  
Mean Learning Rate: 3.71e-04  
Mean Weight Decay: 0.314

=====  
Epoch 19/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5626938343048096 seconds  
LR changed during epoch: 3.27e-04 -> 3.25e-04  
total runtime to train this model was 24.511815071105957 seconds  
Hyperparameteres for model 0 at epoch 19  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1707797050476074 seconds  
Loss: 1.0292  
Train Accuracy: 63.31%  
Test Accuracy: 63.32%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5789921283721924 seconds  
LR changed during epoch: 2.36e-04 -> 2.32e-04  
total runtime to train this model was 24.468754053115845 seconds  
Hyperparameteres for model 1 at epoch 19  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2205514907836914 seconds

Loss: 1.0827  
Train Accuracy: 61.28%  
Test Accuracy: 62.49%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.609839916229248 seconds  
LR changed during epoch: 4.21e-04 -> 4.15e-04  
total runtime to train this model was 24.679259777069092 seconds  
Hyperparameteres for model 2 at epoch 19  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4532296657562256 seconds  
Loss: 0.9595  
Train Accuracy: 65.92%  
Test Accuracy: 66.45%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7312021255493164 seconds  
LR changed during epoch: 2.85e-04 -> 2.81e-04  
total runtime to train this model was 23.69092583656311 seconds  
Hyperparameteres for model 3 at epoch 19  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.08367919921875 seconds  
Loss: 1.0567  
Train Accuracy: 62.25%  
Test Accuracy: 63.15%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6153967380523682 seconds  
LR changed during epoch: 2.91e-04 -> 3.87e-04  
total runtime to train this model was 24.545150756835938 seconds  
Hyperparameteres for model 4 at epoch 19  
lr: 0.00048339668238501414

weight\_decay: 0.43087995867019463  
drop\_path: 0.21179266737018654

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.851945400238037 seconds

Loss: 0.9924

Train Accuracy: 64.60%

Test Accuracy: 64.18%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 19 Summary:

=====

Time: 144.04s (Avg member: 28.81s)

Population Mean Accuracy: 63.92%

Best Member Accuracy: 66.45%

Mean Batch Size: 256

Mean Learning Rate: 3.71e-04

Mean Weight Decay: 0.314

=====

Epoch 20/70

=====

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

built data in 1.570934772491455 seconds

LR changed during epoch: 3.25e-04 -> 3.24e-04

total runtime to train this model was 24.785735368728638 seconds

Hyperparameteres for model 0 at epoch 20

lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2856080532073975 seconds

Loss: 1.0117

Train Accuracy: 63.96%

Test Accuracy: 63.33%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.5615894794464111 seconds

LR changed during epoch: 2.32e-04 -> 2.28e-04

total runtime to train this model was 24.726006507873535 seconds

Hyperparameteres for model 1 at epoch 20

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2213096618652344 seconds  
Loss: 1.0617  
Train Accuracy: 62.46%  
Test Accuracy: 63.51%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5836026668548584 seconds  
LR changed during epoch: 4.15e-04 -> 4.07e-04  
total runtime to train this model was 24.580222606658936 seconds  
Hyperparameteres for model 2 at epoch 20  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.184986114501953 seconds  
Loss: 0.9417  
Train Accuracy: 66.46%  
Test Accuracy: 67.01%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.559473991394043 seconds  
LR changed during epoch: 2.81e-04 -> 2.76e-04  
total runtime to train this model was 24.949930667877197 seconds  
Hyperparameteres for model 3 at epoch 20  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1890709400177 seconds  
Loss: 1.0244  
Train Accuracy: 63.46%  
Test Accuracy: 63.90%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5697870254516602 seconds  
LR changed during epoch: 3.87e-04 -> 4.83e-04  
total runtime to train this model was 24.876367568969727 seconds  
Hyperparameteres for model 4 at epoch 20

lr: 0.00048339668238501414

weight\_decay: 0.43087995867019463

drop\_path: 0.21179266737018654

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.190333366394043 seconds

Loss: 1.0071

Train Accuracy: 64.37%

Test Accuracy: 63.27%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

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

Top performers: [67.01]

Bottom performers: [63.27]

Member 4: lr changed from 0.00048339668238501414 to 0.0003660093682741275

Member 4: weight\_decay changed from 0.43087995867019463 to 0.5

Member 4: drop\_path changed from 0.21179266737018654 to 0.18626259427183606

Member 4 copied from 2

LR=3.66e-04, WD=0.500, DropPath=0.186, Warmup=5 epochs, Batch=256

=====  
Epoch 20 Summary:  
=====

Time: 144.01s (Avg member: 28.80s)

Population Mean Accuracy: 64.20%

Best Member Accuracy: 67.01%

Mean Batch Size: 256

Mean Learning Rate: 3.47e-04

Mean Weight Decay: 0.328

=====  
Epoch 21/70  
=====

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

built data in 1.6828281879425049 seconds

LR changed during epoch: 3.24e-04 -> 3.22e-04

total runtime to train this model was 24.42064595222473 seconds

Hyperparameteres for model 0 at epoch 21

lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.588024139404297 seconds

Loss: 0.9882

Train Accuracy: 64.87%

Test Accuracy: 65.03%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.7369117736816406 seconds  
LR changed during epoch: 2.28e-04 -> 2.24e-04  
total runtime to train this model was 23.787956714630127 seconds  
Hyperparameteres for model 1 at epoch 21  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825  
drop\_path: 0.2988852362414701  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.367851734161377 seconds  
Loss: 1.0537  
Train Accuracy: 62.45%  
Test Accuracy: 63.70%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5722835063934326 seconds  
LR changed during epoch: 4.07e-04 -> 4.00e-04  
total runtime to train this model was 24.260947704315186 seconds  
Hyperparameteres for model 2 at epoch 21  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.661203622817993 seconds  
Loss: 0.9224  
Train Accuracy: 67.22%  
Test Accuracy: 68.23%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.571751356124878 seconds  
LR changed during epoch: 2.76e-04 -> 2.71e-04  
total runtime to train this model was 24.933150053024292 seconds  
Hyperparameteres for model 3 at epoch 21  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.162911891937256 seconds  
Loss: 1.0203  
Train Accuracy: 63.68%  
Test Accuracy: 64.83%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5779728889465332 seconds  
LR changed during epoch: 3.73e-07 -> 7.36e-05  
total runtime to train this model was 24.485474824905396 seconds  
Hyperparameteres for model 4 at epoch 21  
lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.186553955078125 seconds  
Loss: 0.8642  
Train Accuracy: 69.16%  
Test Accuracy: 70.08%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 21 Summary:

=====

Time: 144.20s (Avg member: 28.84s)  
Population Mean Accuracy: 66.37%  
Best Member Accuracy: 70.08%  
Mean Batch Size: 256  
Mean Learning Rate: 3.47e-04  
Mean Weight Decay: 0.328

=====

Epoch 22/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5716395378112793 seconds  
LR changed during epoch: 3.22e-04 -> 3.19e-04  
total runtime to train this model was 24.54507875442505 seconds  
Hyperparameteres for model 0 at epoch 22  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.120884656906128 seconds  
Loss: 0.9832  
Train Accuracy: 65.19%  
Test Accuracy: 64.81%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.59820556640625 seconds  
LR changed during epoch: 2.24e-04 -> 2.20e-04  
total runtime to train this model was 24.3766028881073 seconds  
Hyperparameteres for model 1 at epoch 22  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1393954753875732 seconds  
Loss: 1.0346  
Train Accuracy: 63.46%  
Test Accuracy: 64.45%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5685021877288818 seconds  
LR changed during epoch: 4.00e-04 -> 3.92e-04  
total runtime to train this model was 24.40170168876648 seconds  
Hyperparameteres for model 2 at epoch 22  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1765058040618896 seconds  
Loss: 0.9020  
Train Accuracy: 67.87%  
Test Accuracy: 69.01%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5985569953918457 seconds  
LR changed during epoch: 2.71e-04 -> 2.65e-04  
total runtime to train this model was 24.358003616333008 seconds  
Hyperparameteres for model 3 at epoch 22  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2222893238067627 seconds

Loss: 0.9983

Train Accuracy: 64.57%

Test Accuracy: 65.44%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.7709784507751465 seconds

LR changed during epoch: 7.36e-05 -> 1.47e-04

total runtime to train this model was 24.411349296569824 seconds

Hyperparameteres for model 4 at epoch 22

lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9498236179351807 seconds

Loss: 0.8376

Train Accuracy: 70.44%

Test Accuracy: 69.00%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 22 Summary:

=====

Time: 143.04s (Avg member: 28.61s)

Population Mean Accuracy: 66.54%

Best Member Accuracy: 69.01%

Mean Batch Size: 256

Mean Learning Rate: 3.47e-04

Mean Weight Decay: 0.328

=====

Epoch 23/70

=====

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

built data in 1.7435171604156494 seconds

LR changed during epoch: 3.19e-04 -> 3.16e-04

total runtime to train this model was 24.986270666122437 seconds

Hyperparameteres for model 0 at epoch 23

lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8357603549957275 seconds  
Loss: 0.9508  
Train Accuracy: 66.13%  
Test Accuracy: 66.01%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5873255729675293 seconds  
LR changed during epoch: 2.20e-04 -> 2.15e-04  
total runtime to train this model was 25.254105806350708 seconds  
Hyperparameteres for model 1 at epoch 23  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.271054267883301 seconds  
Loss: 1.0202  
Train Accuracy: 63.77%  
Test Accuracy: 64.61%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.587590217590332 seconds  
LR changed during epoch: 3.92e-04 -> 3.83e-04  
total runtime to train this model was 25.090617895126343 seconds  
Hyperparameteres for model 2 at epoch 23  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2813236713409424 seconds  
Loss: 0.8790  
Train Accuracy: 68.96%  
Test Accuracy: 69.68%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.591188669204712 seconds

LR changed during epoch: 2.65e-04 -> 2.60e-04  
total runtime to train this model was 24.851309061050415 seconds  
Hyperparameteres for model 3 at epoch 23  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.217005491256714 seconds  
Loss: 0.9813  
Train Accuracy: 65.17%  
Test Accuracy: 66.96%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5844917297363281 seconds  
LR changed during epoch: 1.47e-04 -> 2.20e-04  
total runtime to train this model was 25.162532091140747 seconds  
Hyperparameteres for model 4 at epoch 23  
lr: 0.0003660093682741275

weight\_decay: 0.5  
drop\_path: 0.18626259427183606  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2334654331207275 seconds  
Loss: 0.8415  
Train Accuracy: 70.12%  
Test Accuracy: 69.90%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 23 Summary:  
=====

Time: 146.44s (Avg member: 29.29s)  
Population Mean Accuracy: 67.43%  
Best Member Accuracy: 69.90%  
Mean Batch Size: 256  
Mean Learning Rate: 3.47e-04  
Mean Weight Decay: 0.328

=====  
Epoch 24/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7361640930175781 seconds  
LR changed during epoch: 3.16e-04 -> 3.13e-04  
total runtime to train this model was 24.395583629608154 seconds

Hyperparameteres for model 0 at epoch 24

lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.0476627349853516 seconds

Loss: 0.9468

Train Accuracy: 66.32%

Test Accuracy: 67.37%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.6451289653778076 seconds

LR changed during epoch: 2.15e-04 -> 2.10e-04

total runtime to train this model was 24.650020122528076 seconds

Hyperparameteres for model 1 at epoch 24

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.934993267059326 seconds

Loss: 1.0104

Train Accuracy: 63.95%

Test Accuracy: 65.05%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.5868399143218994 seconds

LR changed during epoch: 3.83e-04 -> 3.74e-04

total runtime to train this model was 25.366641998291016 seconds

Hyperparameteres for model 2 at epoch 24

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3337349891662598 seconds

Loss: 0.8564

Train Accuracy: 69.53%

Test Accuracy: 70.29%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.5887513160705566 seconds

LR changed during epoch: 2.60e-04 -> 2.54e-04

total runtime to train this model was 25.329972505569458 seconds

Hyperparameteres for model 3 at epoch 24

lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2343714237213135 seconds

Loss: 0.9686

Train Accuracy: 65.44%

Test Accuracy: 65.79%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.5634543895721436 seconds

LR changed during epoch: 2.20e-04 -> 2.93e-04

total runtime to train this model was 25.025374174118042 seconds

Hyperparameteres for model 4 at epoch 24

lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.281280994415283 seconds

Loss: 0.8632

Train Accuracy: 69.52%

Test Accuracy: 69.05%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 24 Summary:

=====

Time: 146.92s (Avg member: 29.38s)

Population Mean Accuracy: 67.51%

Best Member Accuracy: 70.29%

Mean Batch Size: 256

Mean Learning Rate: 3.47e-04

Mean Weight Decay: 0.328

=====

Epoch 25/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5845603942871094 seconds  
LR changed during epoch: 3.13e-04 -> 3.10e-04  
total runtime to train this model was 24.893531560897827 seconds  
Hyperparameteres for model 0 at epoch 25  
lr: 0.00032852039018270755

weight\_decay: 0.28055952036243514

drop\_path: 0.27458284474522676

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1478638648986816 seconds  
Loss: 0.9364  
Train Accuracy: 66.79%  
Test Accuracy: 66.31%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.665001630783081 seconds  
LR changed during epoch: 2.10e-04 -> 2.05e-04  
total runtime to train this model was 24.560702800750732 seconds  
Hyperparameteres for model 1 at epoch 25  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.470663547515869 seconds  
Loss: 0.9903  
Train Accuracy: 64.85%  
Test Accuracy: 66.32%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7306640148162842 seconds  
LR changed during epoch: 3.74e-04 -> 3.65e-04  
total runtime to train this model was 23.979292154312134 seconds  
Hyperparameteres for model 2 at epoch 25  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.3945600986480713 seconds  
Loss: 0.8432  
Train Accuracy: 69.98%  
Test Accuracy: 69.35%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.576326608657837 seconds  
LR changed during epoch: 2.54e-04 -> 2.48e-04  
total runtime to train this model was 24.774339199066162 seconds  
Hyperparameteres for model 3 at epoch 25  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5621960163116455 seconds  
Loss: 0.9592  
Train Accuracy: 65.90%  
Test Accuracy: 66.87%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.562589168548584 seconds  
LR changed during epoch: 2.93e-04 -> 3.66e-04  
total runtime to train this model was 25.159801721572876 seconds  
Hyperparameteres for model 4 at epoch 25  
lr: 0.0003660093682741275

weight\_decay: 0.5  
drop\_path: 0.18626259427183606  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.208250045776367 seconds  
Loss: 0.8796  
Train Accuracy: 68.93%  
Test Accuracy: 68.32%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

==== PBT Exploit & Explore ====  
Top performers: [69.35]  
Bottom performers: [66.31]  
Member 0: lr changed from 0.00032852039018270755 to 0.00035996240070477407  
Member 0: weight\_decay changed from 0.28055952036243514 to 0.34234005784372074  
Member 0: drop\_path changed from 0.27458284474522676 to 0.25668365729351295

Member 0 copied from 2  
LR=3.60e-04, WD=0.342, DropPath=0.257, Warmup=5 epochs, Batch=256

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

Time: 145.46s (Avg member: 29.09s)  
Population Mean Accuracy: 67.43%  
Best Member Accuracy: 69.35%  
Mean Batch Size: 256  
Mean Learning Rate: 3.54e-04  
Mean Weight Decay: 0.340

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5685386657714844 seconds  
LR changed during epoch: 3.67e-07 -> 7.24e-05  
total runtime to train this model was 25.016664505004883 seconds  
Hyperparameteres for model 0 at epoch 26  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1955533027648926 seconds

Loss: 0.7809  
Train Accuracy: 72.35%  
Test Accuracy: 72.52%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5718400478363037 seconds  
LR changed during epoch: 2.05e-04 -> 2.00e-04  
total runtime to train this model was 25.25958490371704 seconds  
Hyperparameteres for model 1 at epoch 26  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2433362007141113 seconds

Loss: 0.9828  
Train Accuracy: 65.10%  
Test Accuracy: 64.59%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5597467422485352 seconds  
LR changed during epoch: 3.65e-04 -> 3.56e-04  
total runtime to train this model was 24.691370487213135 seconds  
Hyperparameteres for model 2 at epoch 26  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.188276767730713 seconds  
Loss: 0.8242  
Train Accuracy: 70.97%  
Test Accuracy: 69.62%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6448907852172852 seconds  
LR changed during epoch: 2.48e-04 -> 2.41e-04  
total runtime to train this model was 24.62286114692688 seconds  
Hyperparameteres for model 3 at epoch 26  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1749002933502197 seconds  
Loss: 0.9474  
Train Accuracy: 66.51%  
Test Accuracy: 66.74%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.7251579761505127 seconds  
LR changed during epoch: 3.66e-04 -> 3.66e-04  
total runtime to train this model was 24.24434757232666 seconds  
Hyperparameteres for model 4 at epoch 26  
lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.071612596511841 seconds  
Loss: 0.8856  
Train Accuracy: 68.69%  
Test Accuracy: 68.02%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 26 Summary:  
=====

Time: 145.00s (Avg member: 29.00s)  
Population Mean Accuracy: 68.30%  
Best Member Accuracy: 72.52%  
Mean Batch Size: 256  
Mean Learning Rate: 3.54e-04  
Mean Weight Decay: 0.340

=====  
Epoch 27/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6369528770446777 seconds  
LR changed during epoch: 7.24e-05 -> 1.44e-04  
total runtime to train this model was 24.515384912490845 seconds  
Hyperparameteres for model 0 at epoch 27  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.848970413208008 seconds  
Loss: 0.7542  
Train Accuracy: 73.34%  
Test Accuracy: 72.30%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5649755001068115 seconds  
LR changed during epoch: 2.00e-04 -> 1.94e-04  
total runtime to train this model was 24.88176465034485 seconds  
Hyperparameteres for model 1 at epoch 27  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.184586524963379 seconds

Loss: 0.9730  
Train Accuracy: 65.53%  
Test Accuracy: 66.07%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6029815673828125 seconds  
LR changed during epoch: 3.56e-04 -> 3.46e-04  
total runtime to train this model was 25.14281702041626 seconds  
Hyperparameteres for model 2 at epoch 27  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.125964403152466 seconds  
Loss: 0.8023  
Train Accuracy: 71.73%  
Test Accuracy: 71.53%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.57749605178833 seconds  
LR changed during epoch: 2.41e-04 -> 2.35e-04  
total runtime to train this model was 25.13182044029236 seconds  
Hyperparameteres for model 3 at epoch 27  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791  
drop\_path: 0.20632463667325823  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.186751365661621 seconds  
Loss: 0.9307  
Train Accuracy: 67.00%  
Test Accuracy: 67.62%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5635664463043213 seconds  
LR changed during epoch: 3.66e-04 -> 3.65e-04  
total runtime to train this model was 25.09099316596985 seconds  
Hyperparameteres for model 4 at epoch 27  
lr: 0.0003660093682741275

weight\_decay: 0.5  
drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2367894649505615 seconds

Loss: 0.8766

Train Accuracy: 69.03%

Test Accuracy: 68.75%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 27 Summary:

=====

Time: 145.45s (Avg member: 29.09s)

Population Mean Accuracy: 69.25%

Best Member Accuracy: 72.30%

Mean Batch Size: 256

Mean Learning Rate: 3.54e-04

Mean Weight Decay: 0.340

=====

Epoch 28/70

=====

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

built data in 1.5929806232452393 seconds

LR changed during epoch: 1.44e-04 -> 2.16e-04

total runtime to train this model was 24.675525903701782 seconds

Hyperparameteres for model 0 at epoch 28

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.254960536956787 seconds

Loss: 0.7640

Train Accuracy: 72.91%

Test Accuracy: 72.53%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.711566686630249 seconds

LR changed during epoch: 1.94e-04 -> 1.89e-04

total runtime to train this model was 24.3504855632782 seconds

Hyperparameteres for model 1 at epoch 28

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9443063735961914 seconds  
Loss: 0.9576  
Train Accuracy: 66.23%  
Test Accuracy: 66.46%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6967194080352783 seconds  
LR changed during epoch: 3.46e-04 -> 3.36e-04  
total runtime to train this model was 24.03673243522644 seconds  
Hyperparameteres for model 2 at epoch 28  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.029890537261963 seconds  
Loss: 0.7872  
Train Accuracy: 72.12%  
Test Accuracy: 72.26%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5639257431030273 seconds  
LR changed during epoch: 2.35e-04 -> 2.28e-04  
total runtime to train this model was 24.740029335021973 seconds  
Hyperparameteres for model 3 at epoch 28  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1701436042785645 seconds  
Loss: 0.9137  
Train Accuracy: 67.49%  
Test Accuracy: 66.33%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.566781759262085 seconds  
LR changed during epoch: 3.65e-04 -> 3.64e-04  
total runtime to train this model was 24.626448392868042 seconds  
Hyperparameteres for model 4 at epoch 28

lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.168067455291748 seconds

Loss: 0.8766

Train Accuracy: 69.09%

Test Accuracy: 69.48%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 28 Summary:

=====

Time: 144.31s (Avg member: 28.86s)

Population Mean Accuracy: 69.41%

Best Member Accuracy: 72.53%

Mean Batch Size: 256

Mean Learning Rate: 3.54e-04

Mean Weight Decay: 0.340

=====

Epoch 29/70

=====

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

built data in 1.5755805969238281 seconds

LR changed during epoch: 2.16e-04 -> 2.88e-04

total runtime to train this model was 24.55258321762085 seconds

Hyperparameteres for model 0 at epoch 29

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.228180170059204 seconds

Loss: 0.7766

Train Accuracy: 72.51%

Test Accuracy: 71.84%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.5690746307373047 seconds

LR changed during epoch: 1.89e-04 -> 1.83e-04

total runtime to train this model was 24.315584182739258 seconds

Hyperparameteres for model 1 at epoch 29

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3568267822265625 seconds

Loss: 0.9480

Train Accuracy: 66.51%

Test Accuracy: 67.12%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.569887638092041 seconds

LR changed during epoch: 3.36e-04 -> 3.26e-04

total runtime to train this model was 24.754987478256226 seconds

Hyperparameteres for model 2 at epoch 29

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.191671133041382 seconds

Loss: 0.7669

Train Accuracy: 72.74%

Test Accuracy: 72.77%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.6160991191864014 seconds

LR changed during epoch: 2.28e-04 -> 2.21e-04

total runtime to train this model was 24.70042371749878 seconds

Hyperparameteres for model 3 at epoch 29

lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2440271377563477 seconds

Loss: 0.8975

Train Accuracy: 68.14%

Test Accuracy: 67.19%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.693098545074463 seconds  
LR changed during epoch: 3.64e-04 -> 3.63e-04  
total runtime to train this model was 24.037023067474365 seconds  
Hyperparameteres for model 4 at epoch 29  
lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.868161201477051 seconds  
Loss: 0.8625  
Train Accuracy: 69.27%  
Test Accuracy: 70.08%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 29 Summary:  
=====

Time: 143.54s (Avg member: 28.71s)  
Population Mean Accuracy: 69.80%  
Best Member Accuracy: 72.77%  
Mean Batch Size: 256  
Mean Learning Rate: 3.54e-04  
Mean Weight Decay: 0.340

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.685089349746704 seconds  
LR changed during epoch: 2.88e-04 -> 3.60e-04  
total runtime to train this model was 24.132447957992554 seconds  
Hyperparameteres for model 0 at epoch 30  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.931352138519287 seconds  
Loss: 0.8006  
Train Accuracy: 71.74%  
Test Accuracy: 70.83%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5637319087982178 seconds

LR changed during epoch: 1.83e-04 -> 1.77e-04  
total runtime to train this model was 25.072750091552734 seconds  
Hyperparameteres for model 1 at epoch 30  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2826192378997803 seconds  
Loss: 0.9386  
Train Accuracy: 66.56%  
Test Accuracy: 68.55%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5828304290771484 seconds  
LR changed during epoch: 3.26e-04 -> 3.16e-04  
total runtime to train this model was 24.84551453590393 seconds  
Hyperparameteres for model 2 at epoch 30  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.217994451522827 seconds  
Loss: 0.7520  
Train Accuracy: 73.59%  
Test Accuracy: 72.43%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5686113834381104 seconds  
LR changed during epoch: 2.21e-04 -> 2.14e-04  
total runtime to train this model was 24.841108322143555 seconds  
Hyperparameteres for model 3 at epoch 30  
lr: 0.0003155456675032866

weight\_decay: 0.3398308014407791

drop\_path: 0.20632463667325823

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1914350986480713 seconds  
Loss: 0.8906

Train Accuracy: 68.51%  
Test Accuracy: 67.80%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5734367370605469 seconds  
LR changed during epoch: 3.63e-04 -> 3.61e-04  
total runtime to train this model was 24.710230112075806 seconds  
Hyperparameteres for model 4 at epoch 30  
lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1603050231933594 seconds

Loss: 0.8552  
Train Accuracy: 69.80%  
Test Accuracy: 69.78%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

==== PBT Exploit & Explore ===

Top performers: [72.43]

Bottom performers: [67.8]

Member 3: lr changed from 0.0003155456675032866 to 0.0002441756069039894  
Member 3: weight\_decay changed from 0.3398308014407791 to 0.427017108353093  
Member 3: drop\_path changed from 0.20632463667325823 to 0.27804434317397886  
Member 3 copied from 2

LR=2.44e-04, WD=0.427, DropPath=0.278, Warmup=5 epochs, Batch=256

=====

Epoch 30 Summary:

=====

Time: 144.51s (Avg member: 28.90s)  
Population Mean Accuracy: 69.88%  
Best Member Accuracy: 72.43%  
Mean Batch Size: 256  
Mean Learning Rate: 3.39e-04  
Mean Weight Decay: 0.358

=====

Epoch 31/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.563401460647583 seconds  
LR changed during epoch: 3.60e-04 -> 3.60e-04  
total runtime to train this model was 24.502411603927612 seconds  
Hyperparameteres for model 0 at epoch 31  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1727454662323 seconds  
Loss: 0.8116  
Train Accuracy: 71.11%  
Test Accuracy: 70.38%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6767373085021973 seconds  
LR changed during epoch: 1.77e-04 -> 1.71e-04  
total runtime to train this model was 24.075286149978638 seconds  
Hyperparameteres for model 1 at epoch 31  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4225070476531982 seconds  
Loss: 0.9325  
Train Accuracy: 67.11%  
Test Accuracy: 68.45%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7262566089630127 seconds  
LR changed during epoch: 3.16e-04 -> 3.05e-04  
total runtime to train this model was 23.563546657562256 seconds  
Hyperparameteres for model 2 at epoch 31  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.797973871231079 seconds  
Loss: 0.7354  
Train Accuracy: 73.84%  
Test Accuracy: 73.21%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6697964668273926 seconds

LR changed during epoch: 2.49e-07 -> 4.91e-05  
total runtime to train this model was 24.11041498184204 seconds  
Hyperparameteres for model 3 at epoch 31  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.194072723388672 seconds

Loss: 0.6805  
Train Accuracy: 75.96%  
Test Accuracy: 74.52%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.5981266498565674 seconds  
LR changed during epoch: 3.61e-04 -> 3.58e-04  
total runtime to train this model was 24.227922439575195 seconds  
Hyperparameteres for model 4 at epoch 31  
lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3392889499664307 seconds  
Loss: 0.8520  
Train Accuracy: 69.97%  
Test Accuracy: 70.27%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 31 Summary:

=====

Time: 142.84s (Avg member: 28.57s)  
Population Mean Accuracy: 71.37%  
Best Member Accuracy: 74.52%  
Mean Batch Size: 256  
Mean Learning Rate: 3.39e-04  
Mean Weight Decay: 0.358

=====

Epoch 32/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5626904964447021 seconds  
LR changed during epoch: 3.60e-04 -> 3.59e-04  
total runtime to train this model was 25.48388648033142 seconds

Hyperparameteres for model 0 at epoch 32

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.42268705368042 seconds

Loss: 0.8046

Train Accuracy: 71.31%

Test Accuracy: 71.49%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.565964937210083 seconds

LR changed during epoch: 1.71e-04 -> 1.65e-04

total runtime to train this model was 25.498753309249878 seconds

Hyperparameteres for model 1 at epoch 32

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.301459789276123 seconds

Loss: 0.9200

Train Accuracy: 67.33%

Test Accuracy: 67.36%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.5778076648712158 seconds

LR changed during epoch: 3.05e-04 -> 2.94e-04

total runtime to train this model was 25.39556646347046 seconds

Hyperparameteres for model 2 at epoch 32

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2037224769592285 seconds

Loss: 0.7246

Train Accuracy: 74.28%

Test Accuracy: 73.28%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.558577299118042 seconds

LR changed during epoch: 4.91e-05 -> 9.79e-05

total runtime to train this model was 24.972928047180176 seconds

Hyperparameteres for model 3 at epoch 32

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2892181873321533 seconds

Loss: 0.6517

Train Accuracy: 76.95%

Test Accuracy: 74.60%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.7491466999053955 seconds

LR changed during epoch: 3.58e-04 -> 3.56e-04

total runtime to train this model was 24.208266496658325 seconds

Hyperparameteres for model 4 at epoch 32

lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.2158286571502686 seconds

Loss: 0.8389

Train Accuracy: 70.29%

Test Accuracy: 70.95%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 32 Summary:

=====

Time: 147.26s (Avg member: 29.45s)

Population Mean Accuracy: 71.54%

Best Member Accuracy: 74.60%

Mean Batch Size: 256

Mean Learning Rate: 3.39e-04

Mean Weight Decay: 0.358

=====

Epoch 33/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5938456058502197 seconds  
LR changed during epoch: 3.59e-04 -> 3.58e-04  
total runtime to train this model was 24.717851638793945 seconds  
Hyperparameteres for model 0 at epoch 33  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.625702142715454 seconds  
Loss: 0.7950  
Train Accuracy: 71.68%  
Test Accuracy: 71.81%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5755667686462402 seconds  
LR changed during epoch: 1.65e-04 -> 1.59e-04  
total runtime to train this model was 25.124985694885254 seconds  
Hyperparameteres for model 1 at epoch 33  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.112579584121704 seconds  
Loss: 0.9103  
Train Accuracy: 67.83%  
Test Accuracy: 68.20%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5857996940612793 seconds  
LR changed during epoch: 2.94e-04 -> 2.83e-04  
total runtime to train this model was 24.93632411956787 seconds  
Hyperparameteres for model 2 at epoch 33  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.191497564315796 seconds  
Loss: 0.7081  
Train Accuracy: 74.95%  
Test Accuracy: 73.68%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5649449825286865 seconds  
LR changed during epoch: 9.79e-05 -> 1.47e-04  
total runtime to train this model was 24.692193746566772 seconds  
Hyperparameteres for model 3 at epoch 33  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2875194549560547 seconds  
Loss: 0.6558  
Train Accuracy: 76.80%  
Test Accuracy: 74.91%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5606656074523926 seconds  
LR changed during epoch: 3.56e-04 -> 3.53e-04  
total runtime to train this model was 24.852954626083374 seconds  
Hyperparameteres for model 4 at epoch 33  
lr: 0.0003660093682741275

weight\_decay: 0.5  
drop\_path: 0.18626259427183606  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1529905796051025 seconds  
Loss: 0.8350  
Train Accuracy: 70.39%  
Test Accuracy: 70.19%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 33 Summary:

=====

Time: 144.73s (Avg member: 28.95s)  
Population Mean Accuracy: 71.76%  
Best Member Accuracy: 74.91%  
Mean Batch Size: 256  
Mean Learning Rate: 3.39e-04

Mean Weight Decay: 0.358

=====

Epoch 34/70

=====

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

built data in 1.6259596347808838 seconds

LR changed during epoch: 3.58e-04 -> 3.57e-04

total runtime to train this model was 24.436670541763306 seconds

Hyperparameteres for model 0 at epoch 34

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.213386058807373 seconds

Loss: 0.7873

Train Accuracy: 72.23%

Test Accuracy: 71.93%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.7085187435150146 seconds

LR changed during epoch: 1.59e-04 -> 1.53e-04

total runtime to train this model was 23.787144422531128 seconds

Hyperparameteres for model 1 at epoch 34

lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.587268590927124 seconds

Loss: 0.8981

Train Accuracy: 68.23%

Test Accuracy: 69.19%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.730299711227417 seconds

LR changed during epoch: 2.83e-04 -> 2.72e-04

total runtime to train this model was 23.787691831588745 seconds

Hyperparameteres for model 2 at epoch 34

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.197435140609741 seconds  
Loss: 0.6889  
Train Accuracy: 75.64%  
Test Accuracy: 73.52%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.567711353302002 seconds  
LR changed during epoch: 1.47e-04 -> 1.96e-04  
total runtime to train this model was 24.64599108695984 seconds  
Hyperparameteres for model 3 at epoch 34  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2762277126312256 seconds  
Loss: 0.6650  
Train Accuracy: 76.28%  
Test Accuracy: 73.72%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5704684257507324 seconds  
LR changed during epoch: 3.53e-04 -> 3.49e-04  
total runtime to train this model was 24.644443035125732 seconds  
Hyperparameteres for model 4 at epoch 34  
lr: 0.0003660093682741275

weight\_decay: 0.5  
drop\_path: 0.18626259427183606

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1873209476470947 seconds  
Loss: 0.8257  
Train Accuracy: 70.94%  
Test Accuracy: 70.43%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 34 Summary:

=====

Time: 143.25s (Avg member: 28.65s)  
Population Mean Accuracy: 71.76%  
Best Member Accuracy: 73.72%  
Mean Batch Size: 256  
Mean Learning Rate: 3.39e-04  
Mean Weight Decay: 0.358

=====  
Epoch 35/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5648398399353027 seconds  
LR changed during epoch: 3.57e-04 -> 3.55e-04  
total runtime to train this model was 24.653449535369873 seconds  
Hyperparameteres for model 0 at epoch 35  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1275038719177246 seconds  
Loss: 0.7785  
Train Accuracy: 72.61%  
Test Accuracy: 72.34%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5706868171691895 seconds  
LR changed during epoch: 1.53e-04 -> 1.47e-04  
total runtime to train this model was 24.612915515899658 seconds  
Hyperparameteres for model 1 at epoch 35  
lr: 0.0002610457762689696

weight\_decay: 0.4351200264873825

drop\_path: 0.2988852362414701

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1618101596832275 seconds  
Loss: 0.8923  
Train Accuracy: 68.34%  
Test Accuracy: 68.54%  
Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5712807178497314 seconds  
LR changed during epoch: 2.72e-04 -> 2.61e-04  
total runtime to train this model was 24.63546061515808 seconds  
Hyperparameteres for model 2 at epoch 35

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2786433696746826 seconds

Loss: 0.6717

Train Accuracy: 76.03%

Test Accuracy: 74.37%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.562654972076416 seconds

LR changed during epoch: 1.96e-04 -> 2.44e-04

total runtime to train this model was 24.63209295272827 seconds

Hyperparameteres for model 3 at epoch 35

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.094846725463867 seconds

Loss: 0.6757

Train Accuracy: 76.20%

Test Accuracy: 74.00%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.7301363945007324 seconds

LR changed during epoch: 3.49e-04 -> 3.45e-04

total runtime to train this model was 23.85581135749817 seconds

Hyperparameteres for model 4 at epoch 35

lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5741841793060303 seconds

Loss: 0.8228

Train Accuracy: 70.98%

Test Accuracy: 71.54%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

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

Top performers: [74.37]

Bottom performers: [68.54]

Member 1: lr changed from 0.0002610457762689696 to 0.0002917661696515262

Member 1: weight\_decay changed from 0.4351200264873825 to 0.49727262108778647

Member 1: drop\_path changed from 0.2988852362414701 to 0.3098434224489126

Member 1 copied from 2

LR=2.92e-04, WD=0.497, DropPath=0.310, Warmup=5 epochs, Batch=256

=====

Epoch 35 Summary:

=====

Time: 142.85s (Avg member: 28.56s)

Population Mean Accuracy: 72.16%

Best Member Accuracy: 74.37%

Mean Batch Size: 256

Mean Learning Rate: 3.46e-04

Mean Weight Decay: 0.370

=====

Epoch 36/70

=====

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

built data in 1.685502052307129 seconds

LR changed during epoch: 3.55e-04 -> 3.52e-04

total runtime to train this model was 24.0603609085083 seconds

Hyperparameteres for model 0 at epoch 36

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.175597906112671 seconds

Loss: 0.7720

Train Accuracy: 72.61%

Test Accuracy: 72.37%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.574875831604004 seconds

LR changed during epoch: 2.98e-07 -> 5.87e-05

total runtime to train this model was 24.52426528930664 seconds

Hyperparameteres for model 1 at epoch 36

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.396387815475464 seconds  
Loss: 0.6270  
Train Accuracy: 77.81%  
Test Accuracy: 76.08%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5886011123657227 seconds  
LR changed during epoch: 2.61e-04 -> 2.50e-04  
total runtime to train this model was 24.72615075111389 seconds  
Hyperparameteres for model 2 at epoch 36  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5112156867980957 seconds  
Loss: 0.6609  
Train Accuracy: 76.91%  
Test Accuracy: 75.34%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6319868564605713 seconds  
LR changed during epoch: 2.44e-04 -> 2.44e-04  
total runtime to train this model was 24.96442937850952 seconds  
Hyperparameteres for model 3 at epoch 36  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.513831615447998 seconds  
Loss: 0.6881  
Train Accuracy: 75.82%  
Test Accuracy: 74.05%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6547422409057617 seconds  
LR changed during epoch: 3.45e-04 -> 3.41e-04  
total runtime to train this model was 24.975979566574097 seconds  
Hyperparameteres for model 4 at epoch 36

lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.54728102684021 seconds

Loss: 0.8120

Train Accuracy: 71.41%

Test Accuracy: 70.71%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 36 Summary:

=====

Time: 145.67s (Avg member: 29.13s)

Population Mean Accuracy: 73.71%

Best Member Accuracy: 76.08%

Mean Batch Size: 256

Mean Learning Rate: 3.46e-04

Mean Weight Decay: 0.370

=====

Epoch 37/70

=====

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

built data in 1.576913833618164 seconds

LR changed during epoch: 3.52e-04 -> 3.50e-04

total runtime to train this model was 25.468657732009888 seconds

Hyperparameteres for model 0 at epoch 37

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.850424289703369 seconds

Loss: 0.7682

Train Accuracy: 72.83%

Test Accuracy: 72.39%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.8182685375213623 seconds

LR changed during epoch: 5.87e-05 -> 1.17e-04

total runtime to train this model was 24.173247575759888 seconds

Hyperparameteres for model 1 at epoch 37

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.230480432510376 seconds

Loss: 0.6120

Train Accuracy: 78.20%

Test Accuracy: 76.19%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.5759141445159912 seconds

LR changed during epoch: 2.50e-04 -> 2.39e-04

total runtime to train this model was 25.201023817062378 seconds

Hyperparameteres for model 2 at epoch 37

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.282113790512085 seconds

Loss: 0.6463

Train Accuracy: 77.13%

Test Accuracy: 75.86%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.5852742195129395 seconds

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

total runtime to train this model was 24.80301809310913 seconds

Hyperparameteres for model 3 at epoch 37

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2313783168792725 seconds

Loss: 0.6795

Train Accuracy: 76.06%

Test Accuracy: 73.78%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

```
--- Training Member 4 (Batch size: 256) ---
built data in 1.579909086227417 seconds
LR changed during epoch: 3.41e-04 -> 3.36e-04
total runtime to train this model was 25.069266319274902 seconds
Hyperparameteres for model 4 at epoch 37
lr: 0.0003660093682741275

weight_decay: 0.5

drop_path: 0.18626259427183606

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.199719190597534 seconds
Loss: 0.8134
Train Accuracy: 71.35%
Test Accuracy: 70.41%
Google Drive already mounted.
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_4_seed_38042.pt

=====
Epoch 37 Summary:
=====
Time: 147.06s (Avg member: 29.41s)
Population Mean Accuracy: 73.73%
Best Member Accuracy: 76.19%
Mean Batch Size: 256
Mean Learning Rate: 3.46e-04
Mean Weight Decay: 0.370

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

--- Training Member 0 (Batch size: 256) ---
built data in 1.6215715408325195 seconds
LR changed during epoch: 3.50e-04 -> 3.47e-04
total runtime to train this model was 24.781299352645874 seconds
Hyperparameteres for model 0 at epoch 38
lr: 0.00035996240070477407

weight_decay: 0.34234005784372074

drop_path: 0.25668365729351295

warmup_epochs: 5

batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.343754291534424 seconds
Loss: 0.7528
Train Accuracy: 73.47%
Test Accuracy: 72.80%
Google Drive already mounted.
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_38042.pt

--- Training Member 1 (Batch size: 256) ---
built data in 1.6403563022613525 seconds
```

LR changed during epoch: 1.17e-04 -> 1.75e-04  
total runtime to train this model was 24.846386432647705 seconds  
Hyperparameteres for model 1 at epoch 38  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3949482440948486 seconds  
Loss: 0.6176  
Train Accuracy: 78.21%  
Test Accuracy: 75.55%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7348136901855469 seconds  
LR changed during epoch: 2.39e-04 -> 2.28e-04  
total runtime to train this model was 24.09737539291382 seconds  
Hyperparameteres for model 2 at epoch 38  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7832372188568115 seconds  
Loss: 0.6288  
Train Accuracy: 77.81%  
Test Accuracy: 75.74%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7277019023895264 seconds  
LR changed during epoch: 2.44e-04 -> 2.43e-04  
total runtime to train this model was 23.727625608444214 seconds  
Hyperparameteres for model 3 at epoch 38  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.243839979171753 seconds  
Loss: 0.6749

Train Accuracy: 76.09%  
Test Accuracy: 74.08%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5863709449768066 seconds  
LR changed during epoch: 3.36e-04 -> 3.31e-04  
total runtime to train this model was 24.78956961631775 seconds  
Hyperparameteres for model 4 at epoch 38  
lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.244920253753662 seconds

Loss: 0.7997  
Train Accuracy: 71.93%  
Test Accuracy: 72.05%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 38 Summary:  
=====

Time: 144.78s (Avg member: 28.96s)  
Population Mean Accuracy: 74.04%  
Best Member Accuracy: 75.74%  
Mean Batch Size: 256  
Mean Learning Rate: 3.46e-04  
Mean Weight Decay: 0.370

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.574753999710083 seconds  
LR changed during epoch: 3.47e-04 -> 3.43e-04  
total runtime to train this model was 24.88412380218506 seconds  
Hyperparameteres for model 0 at epoch 39  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2635536193847656 seconds  
Loss: 0.7486  
Train Accuracy: 73.57%  
Test Accuracy: 72.58%

Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6044015884399414 seconds  
LR changed during epoch: 1.75e-04 -> 2.34e-04  
total runtime to train this model was 24.54280400276184 seconds  
Hyperparameteres for model 1 at epoch 39  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1815173625946045 seconds  
Loss: 0.6437  
Train Accuracy: 77.15%  
Test Accuracy: 75.17%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6110126972198486 seconds  
LR changed during epoch: 2.28e-04 -> 2.17e-04  
total runtime to train this model was 24.699277877807617 seconds  
Hyperparameteres for model 2 at epoch 39  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.220824956893921 seconds  
Loss: 0.6144  
Train Accuracy: 78.20%  
Test Accuracy: 75.53%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6348814964294434 seconds  
LR changed during epoch: 2.43e-04 -> 2.42e-04  
total runtime to train this model was 24.850355863571167 seconds  
Hyperparameteres for model 3 at epoch 39  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.224327564239502 seconds

Loss: 0.6702

Train Accuracy: 76.53%

Test Accuracy: 74.78%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.818429946899414 seconds

LR changed during epoch: 3.31e-04 -> 3.26e-04

total runtime to train this model was 24.100467920303345 seconds

Hyperparameteres for model 4 at epoch 39

lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8239893913269043 seconds

Loss: 0.7947

Train Accuracy: 71.90%

Test Accuracy: 71.90%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 39 Summary:

=====

Time: 144.20s (Avg member: 28.84s)

Population Mean Accuracy: 73.99%

Best Member Accuracy: 75.53%

Mean Batch Size: 256

Mean Learning Rate: 3.46e-04

Mean Weight Decay: 0.370

=====

Epoch 40/70

=====

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

built data in 1.7189655303955078 seconds

LR changed during epoch: 3.43e-04 -> 3.39e-04

total runtime to train this model was 23.89030694961548 seconds

Hyperparameteres for model 0 at epoch 40

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1568238735198975 seconds  
Loss: 0.7420  
Train Accuracy: 73.77%  
Test Accuracy: 73.30%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5841054916381836 seconds  
LR changed during epoch: 2.34e-04 -> 2.92e-04  
total runtime to train this model was 25.109858512878418 seconds  
Hyperparameteres for model 1 at epoch 40  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2132632732391357 seconds  
Loss: 0.6617  
Train Accuracy: 76.67%  
Test Accuracy: 75.39%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.5632095336914062 seconds  
LR changed during epoch: 2.17e-04 -> 2.05e-04  
total runtime to train this model was 24.875417470932007 seconds  
Hyperparameteres for model 2 at epoch 40  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2318623065948486 seconds  
Loss: 0.5987  
Train Accuracy: 78.78%  
Test Accuracy: 76.25%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6233744621276855 seconds  
LR changed during epoch: 2.42e-04 -> 2.41e-04  
total runtime to train this model was 24.974255084991455 seconds  
Hyperparameteres for model 3 at epoch 40  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2185933589935303 seconds  
Loss: 0.6647  
Train Accuracy: 76.34%  
Test Accuracy: 74.65%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6303060054779053 seconds  
LR changed during epoch: 3.26e-04 -> 3.20e-04  
total runtime to train this model was 24.763790130615234 seconds  
Hyperparameteres for model 4 at epoch 40  
lr: 0.0003660093682741275

weight\_decay: 0.5

drop\_path: 0.18626259427183606  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1671109199523926 seconds  
Loss: 0.7915  
Train Accuracy: 72.37%  
Test Accuracy: 72.19%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

--- Population Update (Epoch 40) ---

==== PBT Exploit & Explore ====  
Top performers: [76.25]  
Bottom performers: [72.19]  
Member 4: lr changed from 0.0003660093682741275 to 0.0005535546109995081  
Member 4: drop\_path changed from 0.18626259427183606 to 0.25070122668799566  
Member 4 copied from 2  
LR=5.54e-04, WD=0.500, DropPath=0.251, Warmup=5 epochs, Batch=256

=====  
Epoch 40 Summary:  
=====

Time: 144.91s (Avg member: 28.98s)  
Population Mean Accuracy: 74.36%  
Best Member Accuracy: 76.25%  
Mean Batch Size: 256  
Mean Learning Rate: 3.83e-04  
Mean Weight Decay: 0.370

=====  
Epoch 41/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.679896354675293 seconds  
LR changed during epoch: 3.39e-04 -> 3.35e-04  
total runtime to train this model was 25.010085105895996 seconds  
Hyperparameteres for model 0 at epoch 41  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.186619758605957 seconds  
Loss: 0.7383  
Train Accuracy: 73.81%  
Test Accuracy: 73.95%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6868369579315186 seconds  
LR changed during epoch: 2.92e-04 -> 2.92e-04  
total runtime to train this model was 25.403607845306396 seconds  
Hyperparameteres for model 1 at epoch 41  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2448229789733887 seconds  
Loss: 0.6771  
Train Accuracy: 76.22%  
Test Accuracy: 74.60%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6473703384399414 seconds  
LR changed during epoch: 2.05e-04 -> 1.94e-04  
total runtime to train this model was 25.67616891860962 seconds  
Hyperparameteres for model 2 at epoch 41  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.28652024269104 seconds  
Loss: 0.5895  
Train Accuracy: 79.10%  
Test Accuracy: 76.08%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.580953598022461 seconds  
LR changed during epoch: 2.41e-04 -> 2.39e-04  
total runtime to train this model was 25.502657890319824 seconds  
Hyperparameteres for model 3 at epoch 41  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2257964611053467 seconds  
Loss: 0.6596  
Train Accuracy: 76.74%  
Test Accuracy: 74.95%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6103005409240723 seconds  
LR changed during epoch: 5.65e-07 -> 1.11e-04  
total runtime to train this model was 25.006951570510864 seconds  
Hyperparameteres for model 4 at epoch 41  
lr: 0.0005535546109995081

weight\_decay: 0.5  
drop\_path: 0.25070122668799566  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.156799077987671 seconds  
Loss: 0.5520  
Train Accuracy: 80.45%  
Test Accuracy: 77.20%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 41 Summary:

=====

Time: 148.13s (Avg member: 29.63s)  
Population Mean Accuracy: 75.36%  
Best Member Accuracy: 77.20%  
Mean Batch Size: 256  
Mean Learning Rate: 3.83e-04  
Mean Weight Decay: 0.370

```
=====
Epoch 42/70
=====
```

--- Training Member 0 (Batch size: 256) ---  
built data in 1.598829984664917 seconds  
LR changed during epoch: 3.35e-04 -> 3.31e-04  
total runtime to train this model was 25.017306566238403 seconds  
Hyperparameteres for model 0 at epoch 42  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.258693218231201 seconds

Loss: 0.7263  
Train Accuracy: 74.40%  
Test Accuracy: 74.16%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6799976825714111 seconds  
LR changed during epoch: 2.92e-04 -> 2.91e-04  
total runtime to train this model was 25.26857566833496 seconds  
Hyperparameteres for model 1 at epoch 42  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7383220195770264 seconds

Loss: 0.6806  
Train Accuracy: 75.86%  
Test Accuracy: 74.28%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7385294437408447 seconds  
LR changed during epoch: 1.94e-04 -> 1.83e-04  
total runtime to train this model was 25.651405096054077 seconds  
Hyperparameteres for model 2 at epoch 42  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8567826747894287 seconds  
Loss: 0.5712  
Train Accuracy: 79.82%  
Test Accuracy: 76.72%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.614687204360962 seconds  
LR changed during epoch: 2.39e-04 -> 2.37e-04  
total runtime to train this model was 25.78217124938965 seconds  
Hyperparameteres for model 3 at epoch 42  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2184650897979736 seconds  
Loss: 0.6586  
Train Accuracy: 76.81%  
Test Accuracy: 75.17%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5907204151153564 seconds  
LR changed during epoch: 1.11e-04 -> 2.22e-04  
total runtime to train this model was 25.32017946243286 seconds  
Hyperparameteres for model 4 at epoch 42  
lr: 0.0005535546109995081

weight\_decay: 0.5  
drop\_path: 0.25070122668799566

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.177584648132324 seconds  
Loss: 0.5717  
Train Accuracy: 79.93%  
Test Accuracy: 76.47%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 42 Summary:

=====

Time: 148.74s (Avg member: 29.75s)

Population Mean Accuracy: 75.36%

Best Member Accuracy: 76.72%

Mean Batch Size: 256

Mean Learning Rate: 3.83e-04

Mean Weight Decay: 0.370

=====

Epoch 43/70

=====

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

built data in 1.607508659362793 seconds

LR changed during epoch: 3.31e-04 -> 3.26e-04

total runtime to train this model was 24.808318376541138 seconds

Hyperparameteres for model 0 at epoch 43

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2356038093566895 seconds

Loss: 0.7180

Train Accuracy: 74.70%

Test Accuracy: 74.06%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.569220781326294 seconds

LR changed during epoch: 2.91e-04 -> 2.90e-04

total runtime to train this model was 25.0466570854187 seconds

Hyperparameteres for model 1 at epoch 43

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2742366790771484 seconds

Loss: 0.6767

Train Accuracy: 76.13%

Test Accuracy: 74.03%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.7863705158233643 seconds

LR changed during epoch: 1.83e-04 -> 1.72e-04

total runtime to train this model was 24.2174813747406 seconds

Hyperparameteres for model 2 at epoch 43

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.172672986984253 seconds

Loss: 0.5579

Train Accuracy: 80.22%

Test Accuracy: 76.78%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.616943597793579 seconds

LR changed during epoch: 2.37e-04 -> 2.35e-04

total runtime to train this model was 25.06857395172119 seconds

Hyperparameteres for model 3 at epoch 43

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7248284816741943 seconds

Loss: 0.6501

Train Accuracy: 76.96%

Test Accuracy: 75.63%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.6179769039154053 seconds

LR changed during epoch: 2.22e-04 -> 3.33e-04

total runtime to train this model was 25.853172063827515 seconds

Hyperparameteres for model 4 at epoch 43

lr: 0.0005535546109995081

weight\_decay: 0.5

drop\_path: 0.25070122668799566

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.280853271484375 seconds

Loss: 0.6163

Train Accuracy: 78.06%

Test Accuracy: 75.22%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

```
=====
Epoch 43 Summary:
=====
```

Time: 147.19s (Avg member: 29.44s)  
Population Mean Accuracy: 75.14%  
Best Member Accuracy: 76.78%  
Mean Batch Size: 256  
Mean Learning Rate: 3.83e-04  
Mean Weight Decay: 0.370

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6039509773254395 seconds  
LR changed during epoch: 3.26e-04 -> 3.20e-04  
total runtime to train this model was 25.37458086013794 seconds  
Hyperparameteres for model 0 at epoch 44  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3833770751953125 seconds

Loss: 0.7130  
Train Accuracy: 74.96%  
Test Accuracy: 73.98%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5982778072357178 seconds  
LR changed during epoch: 2.90e-04 -> 2.89e-04  
total runtime to train this model was 25.436388969421387 seconds  
Hyperparameteres for model 1 at epoch 44  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.27158522605896 seconds

Loss: 0.6734  
Train Accuracy: 76.24%  
Test Accuracy: 74.92%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.7238571643829346 seconds  
LR changed during epoch: 1.72e-04 -> 1.62e-04  
total runtime to train this model was 25.16892409324646 seconds  
Hyperparameteres for model 2 at epoch 44  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9445972442626953 seconds  
Loss: 0.5422  
Train Accuracy: 80.78%  
Test Accuracy: 76.60%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.798248529434204 seconds  
LR changed during epoch: 2.35e-04 -> 2.33e-04  
total runtime to train this model was 24.733275413513184 seconds  
Hyperparameteres for model 3 at epoch 44  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.113879680633545 seconds  
Loss: 0.6500  
Train Accuracy: 76.93%  
Test Accuracy: 74.80%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6527073383331299 seconds  
LR changed during epoch: 3.33e-04 -> 4.43e-04  
total runtime to train this model was 25.970365524291992 seconds  
Hyperparameteres for model 4 at epoch 44  
lr: 0.0005535546109995081

weight\_decay: 0.5

drop\_path: 0.25070122668799566

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.429021120071411 seconds

Loss: 0.6644  
Train Accuracy: 76.41%  
Test Accuracy: 73.43%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 44 Summary:  
=====

Time: 149.40s (Avg member: 29.88s)  
Population Mean Accuracy: 74.75%  
Best Member Accuracy: 76.60%  
Mean Batch Size: 256  
Mean Learning Rate: 3.83e-04  
Mean Weight Decay: 0.370

=====  
Epoch 45/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6762681007385254 seconds  
LR changed during epoch: 3.20e-04 -> 3.15e-04  
total runtime to train this model was 25.607388734817505 seconds  
Hyperparameteres for model 0 at epoch 45  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3413071632385254 seconds

Loss: 0.7091  
Train Accuracy: 75.14%  
Test Accuracy: 74.45%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6148808002471924 seconds  
LR changed during epoch: 2.89e-04 -> 2.88e-04  
total runtime to train this model was 25.664963483810425 seconds  
Hyperparameteres for model 1 at epoch 45  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3014228343963623 seconds  
Loss: 0.6817  
Train Accuracy: 76.08%

Test Accuracy: 74.45%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.8131625652313232 seconds  
LR changed during epoch: 1.62e-04 -> 1.51e-04  
total runtime to train this model was 24.90614342689514 seconds  
Hyperparameteres for model 2 at epoch 45  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9994864463806152 seconds  
Loss: 0.5305  
Train Accuracy: 81.24%  
Test Accuracy: 77.43%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7741639614105225 seconds  
LR changed during epoch: 2.33e-04 -> 2.30e-04  
total runtime to train this model was 25.075883626937866 seconds  
Hyperparameteres for model 3 at epoch 45  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.875610113143921 seconds  
Loss: 0.6417  
Train Accuracy: 77.40%  
Test Accuracy: 73.63%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.634500503540039 seconds  
LR changed during epoch: 4.43e-04 -> 5.54e-04  
total runtime to train this model was 25.84231996536255 seconds  
Hyperparameteres for model 4 at epoch 45  
lr: 0.0005535546109995081

weight\_decay: 0.5  
drop\_path: 0.25070122668799566  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2585232257843018 seconds

Loss: 0.7168

Train Accuracy: 74.55%

Test Accuracy: 71.40%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

--- Population Update (Epoch 45) ---

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

Top performers: [77.43]

Bottom performers: [71.4]

Member 4: lr changed from 0.0005535546109995081 to 0.00037335173739611965

Member 4: drop\_path changed from 0.25070122668799566 to 0.15607098779143497

Member 4 copied from 2

LR=3.73e-04, WD=0.500, DropPath=0.156, Warmup=5 epochs, Batch=256

=====

Epoch 45 Summary:

=====

Time: 149.75s (Avg member: 29.95s)

Population Mean Accuracy: 74.27%

Best Member Accuracy: 77.43%

Mean Batch Size: 256

Mean Learning Rate: 3.47e-04

Mean Weight Decay: 0.370

=====

Epoch 46/70

=====

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

built data in 1.6141953468322754 seconds

LR changed during epoch: 3.15e-04 -> 3.09e-04

total runtime to train this model was 25.750680685043335 seconds

Hyperparameteres for model 0 at epoch 46

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2861337661743164 seconds

Loss: 0.6962

Train Accuracy: 75.36%

Test Accuracy: 74.39%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.642972707748413 seconds

LR changed during epoch: 2.88e-04 -> 2.86e-04

total runtime to train this model was 25.645159482955933 seconds

Hyperparameteres for model 1 at epoch 46

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2753617763519287 seconds

Loss: 0.6698

Train Accuracy: 76.25%

Test Accuracy: 74.81%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.8121531009674072 seconds

LR changed during epoch: 1.51e-04 -> 1.41e-04

total runtime to train this model was 25.457893133163452 seconds

Hyperparameteres for model 2 at epoch 46

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.2851128578186035 seconds

Loss: 0.5197

Train Accuracy: 81.60%

Test Accuracy: 77.18%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.6637752056121826 seconds

LR changed during epoch: 2.30e-04 -> 2.27e-04

total runtime to train this model was 26.063611268997192 seconds

Hyperparameteres for model 3 at epoch 46

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2756903171539307 seconds

Loss: 0.6359

Train Accuracy: 77.64%

Test Accuracy: 75.00%

Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.620591402053833 seconds  
LR changed during epoch: 3.81e-07 -> 7.51e-05  
total runtime to train this model was 25.897233963012695 seconds  
Hyperparameteres for model 4 at epoch 46  
lr: 0.00037335173739611965

weight\_decay: 0.5  
drop\_path: 0.15607098779143497  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3241846561431885 seconds  
Loss: 0.4956  
Train Accuracy: 82.26%  
Test Accuracy: 78.33%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 46 Summary:  
=====

Time: 150.94s (Avg member: 30.19s)  
Population Mean Accuracy: 75.94%  
Best Member Accuracy: 78.33%  
Mean Batch Size: 256  
Mean Learning Rate: 3.47e-04  
Mean Weight Decay: 0.370

=====  
Epoch 47/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6390659809112549 seconds  
LR changed during epoch: 3.09e-04 -> 3.03e-04  
total runtime to train this model was 25.690141439437866 seconds  
Hyperparameteres for model 0 at epoch 47  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074  
drop\_path: 0.25668365729351295  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.299086332321167 seconds  
Loss: 0.6913  
Train Accuracy: 75.68%  
Test Accuracy: 75.60%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6185963153839111 seconds  
LR changed during epoch: 2.86e-04 -> 2.84e-04  
total runtime to train this model was 25.81798267364502 seconds  
Hyperparameteres for model 1 at epoch 47  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4542641639709473 seconds  
Loss: 0.6688  
Train Accuracy: 76.29%  
Test Accuracy: 74.57%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.8432824611663818 seconds  
LR changed during epoch: 1.41e-04 -> 1.30e-04  
total runtime to train this model was 25.044049501419067 seconds  
Hyperparameteres for model 2 at epoch 47  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.304610252380371 seconds  
Loss: 0.5037  
Train Accuracy: 82.08%  
Test Accuracy: 77.91%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6081702709197998 seconds  
LR changed during epoch: 2.27e-04 -> 2.24e-04  
total runtime to train this model was 26.055461883544922 seconds  
Hyperparameteres for model 3 at epoch 47  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.295233726501465 seconds  
Loss: 0.6328  
Train Accuracy: 77.68%  
Test Accuracy: 75.71%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6366870403289795 seconds  
LR changed during epoch: 7.51e-05 -> 1.50e-04  
total runtime to train this model was 25.654468536376953 seconds  
Hyperparameteres for model 4 at epoch 47  
lr: 0.00037335173739611965

weight\_decay: 0.5  
  
drop\_path: 0.15607098779143497  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2741663455963135 seconds  
Loss: 0.5045  
Train Accuracy: 82.08%  
Test Accuracy: 77.89%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

---

---

#### Epoch 47 Summary:

---

---

Time: 150.50s (Avg member: 30.10s)  
Population Mean Accuracy: 76.34%  
Best Member Accuracy: 77.91%  
Mean Batch Size: 256  
Mean Learning Rate: 3.47e-04  
Mean Weight Decay: 0.370

---

---

#### Epoch 48/70

---

---

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6293227672576904 seconds  
LR changed during epoch: 3.03e-04 -> 2.96e-04  
total runtime to train this model was 25.228957891464233 seconds  
Hyperparameteres for model 0 at epoch 48  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074  
  
drop\_path: 0.25668365729351295  
  
warmup\_epochs: 5  
  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.246060371398926 seconds

Loss: 0.6795  
Train Accuracy: 76.08%  
Test Accuracy: 75.13%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.7319202423095703 seconds  
LR changed during epoch: 2.84e-04 -> 2.81e-04  
total runtime to train this model was 25.55046010017395 seconds  
Hyperparameteres for model 1 at epoch 48  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647  
drop\_path: 0.3098434224489126  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.827306032180786 seconds  
Loss: 0.6727  
Train Accuracy: 76.07%  
Test Accuracy: 74.53%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7576849460601807 seconds  
LR changed during epoch: 1.30e-04 -> 1.20e-04  
total runtime to train this model was 24.765527486801147 seconds  
Hyperparameteres for model 2 at epoch 48  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0247585773468018 seconds  
Loss: 0.4907  
Train Accuracy: 82.62%  
Test Accuracy: 77.80%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.643777847290039 seconds  
LR changed during epoch: 2.24e-04 -> 2.21e-04  
total runtime to train this model was 26.143467903137207 seconds  
Hyperparameteres for model 3 at epoch 48  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2584056854248047 seconds  
Loss: 0.6292  
Train Accuracy: 77.74%  
Test Accuracy: 75.73%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6002938747406006 seconds  
LR changed during epoch: 1.50e-04 -> 2.24e-04  
total runtime to train this model was 25.275620460510254 seconds  
Hyperparameteres for model 4 at epoch 48  
lr: 0.00037335173739611965

weight\_decay: 0.5  
drop\_path: 0.15607098779143497

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2713613510131836 seconds  
Loss: 0.5307  
Train Accuracy: 81.25%  
Test Accuracy: 76.97%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 48 Summary:  
=====

Time: 149.20s (Avg member: 29.84s)  
Population Mean Accuracy: 76.03%  
Best Member Accuracy: 77.80%  
Mean Batch Size: 256  
Mean Learning Rate: 3.47e-04  
Mean Weight Decay: 0.370

=====  
Epoch 49/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5956594944000244 seconds  
LR changed during epoch: 2.96e-04 -> 2.89e-04  
total runtime to train this model was 25.31310772895813 seconds  
Hyperparameteres for model 0 at epoch 49  
lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074  
drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2316226959228516 seconds  
Loss: 0.6745  
Train Accuracy: 75.91%  
Test Accuracy: 74.76%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6142852306365967 seconds  
LR changed during epoch: 2.81e-04 -> 2.78e-04  
total runtime to train this model was 25.31380581855774 seconds  
Hyperparameteres for model 1 at epoch 49  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4216573238372803 seconds  
Loss: 0.6722  
Train Accuracy: 76.14%  
Test Accuracy: 75.15%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.8147549629211426 seconds  
LR changed during epoch: 1.20e-04 -> 1.11e-04  
total runtime to train this model was 24.616929531097412 seconds  
Hyperparameteres for model 2 at epoch 49  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2420473098754883 seconds  
Loss: 0.4758  
Train Accuracy: 83.32%  
Test Accuracy: 78.18%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5908243656158447 seconds  
LR changed during epoch: 2.21e-04 -> 2.17e-04  
total runtime to train this model was 25.33749508857727 seconds  
Hyperparameteres for model 3 at epoch 49

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2432806491851807 seconds

Loss: 0.6218

Train Accuracy: 78.00%

Test Accuracy: 75.71%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.6510825157165527 seconds

LR changed during epoch: 2.24e-04 -> 2.99e-04

total runtime to train this model was 25.450744152069092 seconds

Hyperparameteres for model 4 at epoch 49

lr: 0.00037335173739611965

weight\_decay: 0.5

drop\_path: 0.15607098779143497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2471399307250977 seconds

Loss: 0.5765

Train Accuracy: 79.55%

Test Accuracy: 75.61%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 49 Summary:

=====

Time: 147.97s (Avg member: 29.59s)

Population Mean Accuracy: 75.88%

Best Member Accuracy: 78.18%

Mean Batch Size: 256

Mean Learning Rate: 3.47e-04

Mean Weight Decay: 0.370

=====

Epoch 50/70

=====

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

built data in 1.5896461009979248 seconds

LR changed during epoch: 2.89e-04 -> 2.82e-04

total runtime to train this model was 25.272146463394165 seconds

Hyperparameteres for model 0 at epoch 50

lr: 0.00035996240070477407

weight\_decay: 0.34234005784372074

drop\_path: 0.25668365729351295

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2242493629455566 seconds

Loss: 0.6657

Train Accuracy: 76.51%

Test Accuracy: 74.26%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.5780322551727295 seconds

LR changed during epoch: 2.78e-04 -> 2.75e-04

total runtime to train this model was 25.227558851242065 seconds

Hyperparameteres for model 1 at epoch 50

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1862294673919678 seconds

Loss: 0.6710

Train Accuracy: 76.26%

Test Accuracy: 75.52%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.7205042839050293 seconds

LR changed during epoch: 1.11e-04 -> 1.01e-04

total runtime to train this model was 24.701247930526733 seconds

Hyperparameteres for model 2 at epoch 50

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8358731269836426 seconds

Loss: 0.4671

Train Accuracy: 83.46%

Test Accuracy: 78.22%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.7882370948791504 seconds  
LR changed during epoch: 2.17e-04 -> 2.14e-04  
total runtime to train this model was 24.65831160545349 seconds  
Hyperparameteres for model 3 at epoch 50  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0012500286102295 seconds  
Loss: 0.6170  
Train Accuracy: 78.18%  
Test Accuracy: 76.12%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.596221685409546 seconds  
LR changed during epoch: 2.99e-04 -> 3.73e-04  
total runtime to train this model was 25.727583169937134 seconds  
Hyperparameteres for model 4 at epoch 50  
lr: 0.00037335173739611965

weight\_decay: 0.5

drop\_path: 0.15607098779143497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2290265560150146 seconds  
Loss: 0.6112  
Train Accuracy: 78.13%  
Test Accuracy: 75.00%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

==== PBT Exploit & Explore ====  
Top performers: [78.22]  
Bottom performers: [74.26]  
Member 0: lr changed from 0.00035996240070477407 to 0.0004192019286653853  
Member 0: weight\_decay changed from 0.34234005784372074 to 0.3069949647772656  
Member 0: drop\_path changed from 0.25668365729351295 to 0.16446627111480136  
Member 0 copied from 2  
LR=4.19e-04, WD=0.307, DropPath=0.164, Warmup=5 epochs, Batch=256

=====  
Epoch 50 Summary:  
=====

Time: 147.58s (Avg member: 29.51s)  
Population Mean Accuracy: 75.82%

Best Member Accuracy: 78.22%

Mean Batch Size: 256

Mean Learning Rate: 3.59e-04

Mean Weight Decay: 0.363

=====

Epoch 51/70

=====

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

built data in 1.6290316581726074 seconds

LR changed during epoch: 4.28e-07 -> 8.43e-05

total runtime to train this model was 25.266485691070557 seconds

Hyperparameteres for model 0 at epoch 51

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2321605682373047 seconds

Loss: 0.4588

Train Accuracy: 83.56%

Test Accuracy: 78.64%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.584623098373413 seconds

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

total runtime to train this model was 25.08446431159973 seconds

Hyperparameteres for model 1 at epoch 51

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.1837949752807617 seconds

Loss: 0.6617

Train Accuracy: 76.67%

Test Accuracy: 75.27%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.6000871658325195 seconds

LR changed during epoch: 1.01e-04 -> 9.23e-05

total runtime to train this model was 25.341569662094116 seconds

Hyperparameteres for model 2 at epoch 51

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.27778697013855 seconds

Loss: 0.4574

Train Accuracy: 83.74%

Test Accuracy: 78.12%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.7448582649230957 seconds

LR changed during epoch: 2.14e-04 -> 2.10e-04

total runtime to train this model was 24.52388834953308 seconds

Hyperparameteres for model 3 at epoch 51

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.23561692237854 seconds

Loss: 0.6098

Train Accuracy: 78.61%

Test Accuracy: 75.34%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.6370313167572021 seconds

LR changed during epoch: 3.73e-04 -> 3.73e-04

total runtime to train this model was 25.304286003112793 seconds

Hyperparameteres for model 4 at epoch 51

lr: 0.00037335173739611965

weight\_decay: 0.5

drop\_path: 0.15607098779143497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.488637924194336 seconds

Loss: 0.6309

Train Accuracy: 77.79%

Test Accuracy: 74.77%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

```
=====
Epoch 51 Summary:
```

```
Time: 147.47s (Avg member: 29.49s)
Population Mean Accuracy: 76.43%
Best Member Accuracy: 78.64%
Mean Batch Size: 256
Mean Learning Rate: 3.59e-04
Mean Weight Decay: 0.363
```

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

```
--- Training Member 0 (Batch size: 256) ---
built data in 1.6340758800506592 seconds
LR changed during epoch: 8.43e-05 -> 1.68e-04
total runtime to train this model was 25.4981906414032 seconds
Hyperparameteres for model 0 at epoch 52
lr: 0.0004192019286653853
```

```
weight_decay: 0.3069949647772656
```

```
drop_path: 0.16446627111480136
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.2502834796905518 seconds
Loss: 0.4831
Train Accuracy: 82.75%
Test Accuracy: 78.15%
Google Drive already mounted.
```

```
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_0_seed_38042.pt
```

```
--- Training Member 1 (Batch size: 256) ---
built data in 1.5996625423431396 seconds
LR changed during epoch: 2.72e-04 -> 2.68e-04
total runtime to train this model was 25.50159478187561 seconds
Hyperparameteres for model 1 at epoch 52
lr: 0.0002917661696515262
```

```
weight_decay: 0.49727262108778647
```

```
drop_path: 0.3098434224489126
```

```
warmup_epochs: 5
```

```
batch_size: 256
```

```
_____ end of hyperparam printing _____
evaluation in 2.1953623294830322 seconds
Loss: 0.6672
Train Accuracy: 76.64%
Test Accuracy: 75.33%
Google Drive already mounted.
```

```
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_1_seed_38042.pt
```

```
--- Training Member 2 (Batch size: 256) ---
built data in 1.5995900630950928 seconds
```

LR changed during epoch: 9.23e-05 -> 8.35e-05  
total runtime to train this model was 25.396318674087524 seconds  
Hyperparameteres for model 2 at epoch 52  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2342443466186523 seconds  
Loss: 0.4468  
Train Accuracy: 84.19%  
Test Accuracy: 78.28%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6893489360809326 seconds  
LR changed during epoch: 2.10e-04 -> 2.05e-04  
total runtime to train this model was 25.02496337890625 seconds  
Hyperparameteres for model 3 at epoch 52  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.855886697769165 seconds  
Loss: 0.6107  
Train Accuracy: 78.46%  
Test Accuracy: 76.38%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.7089738845825195 seconds  
LR changed during epoch: 3.73e-04 -> 3.72e-04  
total runtime to train this model was 24.844919681549072 seconds  
Hyperparameteres for model 4 at epoch 52  
lr: 0.00037335173739611965

weight\_decay: 0.5

drop\_path: 0.15607098779143497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9685583114624023 seconds  
Loss: 0.6429

Train Accuracy: 77.07%  
Test Accuracy: 75.17%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 52 Summary:  
=====

Time: 148.24s (Avg member: 29.65s)  
Population Mean Accuracy: 76.66%  
Best Member Accuracy: 78.28%  
Mean Batch Size: 256  
Mean Learning Rate: 3.59e-04  
Mean Weight Decay: 0.363

=====  
Epoch 53/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6390039920806885 seconds  
LR changed during epoch: 1.68e-04 -> 2.52e-04  
total runtime to train this model was 25.552875995635986 seconds  
Hyperparameteres for model 0 at epoch 53  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2613933086395264 seconds

Loss: 0.5200  
Train Accuracy: 81.44%  
Test Accuracy: 77.58%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.597466230392456 seconds  
LR changed during epoch: 2.68e-04 -> 2.64e-04  
total runtime to train this model was 25.49916100502014 seconds  
Hyperparameteres for model 1 at epoch 53  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.275019645690918 seconds  
Loss: 0.6633  
Train Accuracy: 76.62%  
Test Accuracy: 74.82%

Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6298375129699707 seconds  
LR changed during epoch: 8.35e-05 -> 7.51e-05  
total runtime to train this model was 25.31356430053711 seconds  
Hyperparameteres for model 2 at epoch 53  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.252864360809326 seconds  
Loss: 0.4321  
Train Accuracy: 84.67%  
Test Accuracy: 78.61%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6546885967254639 seconds  
LR changed during epoch: 2.05e-04 -> 2.01e-04  
total runtime to train this model was 25.158296585083008 seconds  
Hyperparameteres for model 3 at epoch 53  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5505473613739014 seconds  
Loss: 0.6005  
Train Accuracy: 78.79%  
Test Accuracy: 76.01%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.789149522781372 seconds  
LR changed during epoch: 3.72e-04 -> 3.71e-04  
total runtime to train this model was 24.584962844848633 seconds  
Hyperparameteres for model 4 at epoch 53  
lr: 0.00037335173739611965

weight\_decay: 0.5  
drop\_path: 0.15607098779143497  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.1675896644592285 seconds

Loss: 0.6479  
Train Accuracy: 76.90%  
Test Accuracy: 75.51%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 53 Summary:

=====

Time: 148.16s (Avg member: 29.63s)  
Population Mean Accuracy: 76.51%  
Best Member Accuracy: 78.61%  
Mean Batch Size: 256  
Mean Learning Rate: 3.59e-04  
Mean Weight Decay: 0.363

=====

Epoch 54/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.6019504070281982 seconds  
LR changed during epoch: 2.52e-04 -> 3.36e-04  
total runtime to train this model was 25.423041343688965 seconds  
Hyperparameteres for model 0 at epoch 54  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2397634983062744 seconds

Loss: 0.5731  
Train Accuracy: 79.61%  
Test Accuracy: 76.10%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.618051528930664 seconds  
LR changed during epoch: 2.64e-04 -> 2.60e-04  
total runtime to train this model was 25.385591506958008 seconds  
Hyperparameteres for model 1 at epoch 54  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2742578983306885 seconds  
Loss: 0.6556  
Train Accuracy: 76.88%  
Test Accuracy: 75.41%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.60933256149292 seconds  
LR changed during epoch: 7.51e-05 -> 6.71e-05  
total runtime to train this model was 25.42525815963745 seconds  
Hyperparameteres for model 2 at epoch 54  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.221231460571289 seconds  
Loss: 0.4241  
Train Accuracy: 84.94%  
Test Accuracy: 78.33%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6171674728393555 seconds  
LR changed during epoch: 2.01e-04 -> 1.96e-04  
total runtime to train this model was 25.339664459228516 seconds  
Hyperparameteres for model 3 at epoch 54  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2030253410339355 seconds  
Loss: 0.6055  
Train Accuracy: 78.70%  
Test Accuracy: 75.87%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.7363195419311523 seconds  
LR changed during epoch: 3.71e-04 -> 3.70e-04  
total runtime to train this model was 24.56614589691162 seconds  
Hyperparameteres for model 4 at epoch 54  
lr: 0.00037335173739611965

weight\_decay: 0.5

drop\_path: 0.15607098779143497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0941271781921387 seconds

Loss: 0.6503

Train Accuracy: 76.94%

Test Accuracy: 74.93%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 54 Summary:

=====

Time: 147.63s (Avg member: 29.53s)

Population Mean Accuracy: 76.13%

Best Member Accuracy: 78.33%

Mean Batch Size: 256

Mean Learning Rate: 3.59e-04

Mean Weight Decay: 0.363

=====

Epoch 55/70

=====

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

built data in 1.7186987400054932 seconds

LR changed during epoch: 3.36e-04 -> 4.19e-04

total runtime to train this model was 25.342167615890503 seconds

Hyperparameteres for model 0 at epoch 55

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.490091323852539 seconds

Loss: 0.6064

Train Accuracy: 78.35%

Test Accuracy: 75.22%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.5833981037139893 seconds

LR changed during epoch: 2.60e-04 -> 2.55e-04

total runtime to train this model was 25.54114317893982 seconds

Hyperparameteres for model 1 at epoch 55

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1762778759002686 seconds  
Loss: 0.6515  
Train Accuracy: 76.99%  
Test Accuracy: 75.74%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6258931159973145 seconds  
LR changed during epoch: 6.71e-05 -> 5.94e-05  
total runtime to train this model was 25.257445573806763 seconds  
Hyperparameteres for model 2 at epoch 55  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.211324453353882 seconds  
Loss: 0.4138  
Train Accuracy: 85.32%  
Test Accuracy: 79.02%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6153113842010498 seconds  
LR changed during epoch: 1.96e-04 -> 1.92e-04  
total runtime to train this model was 25.03647470474243 seconds  
Hyperparameteres for model 3 at epoch 55  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.202981948852539 seconds  
Loss: 0.5858  
Train Accuracy: 79.37%  
Test Accuracy: 75.86%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.660703420639038 seconds  
LR changed during epoch: 3.70e-04 -> 3.68e-04

total runtime to train this model was 25.969651460647583 seconds

Hyperparameteres for model 4 at epoch 55

lr: 0.00037335173739611965

weight\_decay: 0.5

drop\_path: 0.15607098779143497

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9273788928985596 seconds

Loss: 0.6534

Train Accuracy: 76.87%

Test Accuracy: 72.33%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

--- Population Update (Epoch 55) ---

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

Top performers: [79.02]

Bottom performers: [72.33]

Member 4: lr changed from 0.00037335173739611965 to 0.0004596857325746771

Member 4: weight\_decay changed from 0.5 to 0.43691229865660836

Member 4: drop\_path changed from 0.15607098779143497 to 0.1980296121392649

Member 4 copied from 2

LR=4.60e-04, WD=0.437, DropPath=0.198, Warmup=5 epochs, Batch=256

=====

Epoch 55 Summary:

=====

Time: 148.58s (Avg member: 29.71s)

Population Mean Accuracy: 75.63%

Best Member Accuracy: 79.02%

Mean Batch Size: 256

Mean Learning Rate: 3.76e-04

Mean Weight Decay: 0.350

=====

Epoch 56/70

=====

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

built data in 1.7665562629699707 seconds

LR changed during epoch: 4.19e-04 -> 4.19e-04

total runtime to train this model was 25.097564697265625 seconds

Hyperparameteres for model 0 at epoch 56

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9287261962890625 seconds

Loss: 0.6381  
Train Accuracy: 77.30%  
Test Accuracy: 75.10%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6203315258026123 seconds  
LR changed during epoch: 2.55e-04 -> 2.50e-04  
total runtime to train this model was 25.660163640975952 seconds  
Hyperparameteres for model 1 at epoch 56  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3438265323638916 seconds

Loss: 0.6549  
Train Accuracy: 76.96%  
Test Accuracy: 75.26%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6257238388061523 seconds  
LR changed during epoch: 5.94e-05 -> 5.22e-05  
total runtime to train this model was 25.56068992614746 seconds  
Hyperparameteres for model 2 at epoch 56  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.258815288543701 seconds

Loss: 0.4033  
Train Accuracy: 85.81%  
Test Accuracy: 78.78%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6347038745880127 seconds  
LR changed during epoch: 1.92e-04 -> 1.87e-04  
total runtime to train this model was 25.39361333847046 seconds  
Hyperparameteres for model 3 at epoch 56  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.368652820587158 seconds

Loss: 0.5834

Train Accuracy: 79.53%

Test Accuracy: 76.33%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.673335075378418 seconds

LR changed during epoch: 4.69e-07 -> 9.24e-05

total runtime to train this model was 25.158894300460815 seconds

Hyperparameteres for model 4 at epoch 56

lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836

drop\_path: 0.1980296121392649

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.7215850353240967 seconds

Loss: 0.4131

Train Accuracy: 85.38%

Test Accuracy: 78.79%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 56 Summary:

=====

Time: 149.06s (Avg member: 29.81s)

Population Mean Accuracy: 76.85%

Best Member Accuracy: 78.79%

Mean Batch Size: 256

Mean Learning Rate: 3.76e-04

Mean Weight Decay: 0.350

=====

Epoch 57/70

=====

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

built data in 1.7807180881500244 seconds

LR changed during epoch: 4.19e-04 -> 4.18e-04

total runtime to train this model was 24.66592764854431 seconds

Hyperparameteres for model 0 at epoch 57

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2052338123321533 seconds  
Loss: 0.6341  
Train Accuracy: 77.37%  
Test Accuracy: 75.13%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6147594451904297 seconds  
LR changed during epoch: 2.50e-04 -> 2.45e-04  
total runtime to train this model was 25.52867603302002 seconds  
Hyperparameteres for model 1 at epoch 57  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.307965040206909 seconds  
Loss: 0.6482  
Train Accuracy: 77.15%  
Test Accuracy: 76.20%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6356558799743652 seconds  
LR changed during epoch: 5.22e-05 -> 4.54e-05  
total runtime to train this model was 25.595757484436035 seconds  
Hyperparameteres for model 2 at epoch 57  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.284459114074707 seconds  
Loss: 0.3944  
Train Accuracy: 86.00%  
Test Accuracy: 78.83%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6392912864685059 seconds  
LR changed during epoch: 1.87e-04 -> 1.82e-04  
total runtime to train this model was 25.502726078033447 seconds  
Hyperparameteres for model 3 at epoch 57

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.211705446243286 seconds

Loss: 0.5748

Train Accuracy: 79.77%

Test Accuracy: 76.24%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.6352174282073975 seconds

LR changed during epoch: 9.24e-05 -> 1.84e-04

total runtime to train this model was 25.55032753944397 seconds

Hyperparameteres for model 4 at epoch 57

lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836

drop\_path: 0.1980296121392649

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.527308940887451 seconds

Loss: 0.4502

Train Accuracy: 83.91%

Test Accuracy: 77.95%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 57 Summary:

=====

Time: 148.91s (Avg member: 29.78s)

Population Mean Accuracy: 76.87%

Best Member Accuracy: 78.83%

Mean Batch Size: 256

Mean Learning Rate: 3.76e-04

Mean Weight Decay: 0.350

=====

Epoch 58/70

=====

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

built data in 1.8283302783966064 seconds

LR changed during epoch: 4.18e-04 -> 4.17e-04

total runtime to train this model was 24.92593288421631 seconds

Hyperparameteres for model 0 at epoch 58

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2117502689361572 seconds

Loss: 0.6318

Train Accuracy: 77.56%

Test Accuracy: 75.39%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.6110618114471436 seconds

LR changed during epoch: 2.45e-04 -> 2.40e-04

total runtime to train this model was 25.64818787574768 seconds

Hyperparameteres for model 1 at epoch 58

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.295668840408325 seconds

Loss: 0.6441

Train Accuracy: 77.42%

Test Accuracy: 75.62%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.656034231185913 seconds

LR changed during epoch: 4.54e-05 -> 3.90e-05

total runtime to train this model was 25.57688546180725 seconds

Hyperparameteres for model 2 at epoch 58

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2816333770751953 seconds

Loss: 0.3842

Train Accuracy: 86.29%

Test Accuracy: 78.96%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

```
--- Training Member 3 (Batch size: 256) ---
built data in 1.6171443462371826 seconds
LR changed during epoch: 1.82e-04 -> 1.76e-04
total runtime to train this model was 25.67805528640747 seconds
Hyperparameteres for model 3 at epoch 58
lr: 0.0002441756069039894

weight_decay: 0.427017108353093
drop_path: 0.27804434317397886
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.2298195362091064 seconds
Loss: 0.5738
Train Accuracy: 79.81%
Test Accuracy: 77.39%
Google Drive already mounted.
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_3_seed_38042.pt

--- Training Member 4 (Batch size: 256) ---
built data in 1.6354646682739258 seconds
LR changed during epoch: 1.84e-04 -> 2.76e-04
total runtime to train this model was 25.685561180114746 seconds
Hyperparameteres for model 4 at epoch 58
lr: 0.0004596857325746771

weight_decay: 0.43691229865660836
drop_path: 0.1980296121392649
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.7089669704437256 seconds
Loss: 0.4969
Train Accuracy: 82.34%
Test Accuracy: 77.31%
Google Drive already mounted.
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_4_seed_38042.pt

=====
Epoch 58 Summary:
=====
Time: 149.85s (Avg member: 29.97s)
Population Mean Accuracy: 76.93%
Best Member Accuracy: 78.96%
Mean Batch Size: 256
Mean Learning Rate: 3.76e-04
Mean Weight Decay: 0.350

=====
Epoch 59/70
=====

--- Training Member 0 (Batch size: 256) ---
built data in 1.7393653392791748 seconds
```

LR changed during epoch: 4.17e-04 -> 4.15e-04  
total runtime to train this model was 25.26664090156555 seconds  
Hyperparameteres for model 0 at epoch 59  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0585389137268066 seconds  
Loss: 0.6344  
Train Accuracy: 77.44%  
Test Accuracy: 75.16%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6184566020965576 seconds  
LR changed during epoch: 2.40e-04 -> 2.35e-04  
total runtime to train this model was 25.68553113937378 seconds  
Hyperparameteres for model 1 at epoch 59  
lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2314112186431885 seconds  
Loss: 0.6413  
Train Accuracy: 77.31%  
Test Accuracy: 75.99%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.637171983718872 seconds  
LR changed during epoch: 3.90e-05 -> 3.30e-05  
total runtime to train this model was 25.379754781723022 seconds  
Hyperparameteres for model 2 at epoch 59  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1675472259521484 seconds  
Loss: 0.3819

Train Accuracy: 86.43%  
Test Accuracy: 78.98%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6477444171905518 seconds  
LR changed during epoch: 1.76e-04 -> 1.71e-04  
total runtime to train this model was 25.42922830581665 seconds  
Hyperparameteres for model 3 at epoch 59  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2375452518463135 seconds  
Loss: 0.5665  
Train Accuracy: 80.11%  
Test Accuracy: 77.18%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6919190883636475 seconds  
LR changed during epoch: 2.76e-04 -> 3.68e-04  
total runtime to train this model was 24.93105387687683 seconds  
Hyperparameteres for model 4 at epoch 59  
lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836  
drop\_path: 0.1980296121392649  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5710885524749756 seconds  
Loss: 0.5566  
Train Accuracy: 80.24%  
Test Accuracy: 76.45%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 59 Summary:

=====

Time: 148.56s (Avg member: 29.71s)  
Population Mean Accuracy: 76.75%  
Best Member Accuracy: 78.98%  
Mean Batch Size: 256  
Mean Learning Rate: 3.76e-04  
Mean Weight Decay: 0.350

=====

Epoch 60/70

---

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

built data in 1.7317254543304443 seconds

LR changed during epoch: 4.15e-04 -> 4.13e-04

total runtime to train this model was 24.574735641479492 seconds

Hyperparameteres for model 0 at epoch 60

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.1372272968292236 seconds

Loss: 0.6320

Train Accuracy: 77.33%

Test Accuracy: 75.53%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.6233704090118408 seconds

LR changed during epoch: 2.35e-04 -> 2.29e-04

total runtime to train this model was 25.67424178123474 seconds

Hyperparameteres for model 1 at epoch 60

lr: 0.0002917661696515262

weight\_decay: 0.49727262108778647

drop\_path: 0.3098434224489126

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.309384346008301 seconds

Loss: 0.6394

Train Accuracy: 77.61%

Test Accuracy: 75.45%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.6082801818847656 seconds

LR changed during epoch: 3.30e-05 -> 2.76e-05

total runtime to train this model was 25.643333911895752 seconds

Hyperparameteres for model 2 at epoch 60

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2178165912628174 seconds

Loss: 0.3736

Train Accuracy: 86.58%

Test Accuracy: 79.26%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.6107354164123535 seconds

LR changed during epoch: 1.71e-04 -> 1.66e-04

total runtime to train this model was 25.307131052017212 seconds

Hyperparameteres for model 3 at epoch 60

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.235549211502075 seconds

Loss: 0.5588

Train Accuracy: 80.42%

Test Accuracy: 77.76%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.593888521194458 seconds

LR changed during epoch: 3.68e-04 -> 4.60e-04

total runtime to train this model was 25.42756676673889 seconds

Hyperparameteres for model 4 at epoch 60

lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836

drop\_path: 0.1980296121392649

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2999658584594727 seconds

Loss: 0.6033

Train Accuracy: 78.43%

Test Accuracy: 75.94%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

--- Population Update (Epoch 60) ---

==== PBT Exploit & Explore ===

Top performers: [79.26]

Bottom performers: [75.45]

Member 1: lr changed from 0.0002917661696515262 to 0.00028809369933882557

Member 1: weight\_decay changed from 0.49727262108778647 to 0.5  
Member 1: drop\_path changed from 0.3098434224489126 to 0.3446755770395824  
Member 1 copied from 2  
LR=2.88e-04, WD=0.500, DropPath=0.345, Warmup=5 epochs, Batch=256

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

Time: 148.27s (Avg member: 29.65s)  
Population Mean Accuracy: 76.79%  
Best Member Accuracy: 79.26%  
Mean Batch Size: 256  
Mean Learning Rate: 3.75e-04  
Mean Weight Decay: 0.351

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

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7632005214691162 seconds  
LR changed during epoch: 4.13e-04 -> 4.10e-04  
total runtime to train this model was 26.016996145248413 seconds  
Hyperparameteres for model 0 at epoch 61  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.19006085395813 seconds

Loss: 0.6347  
Train Accuracy: 77.52%  
Test Accuracy: 75.24%  
Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6189491748809814 seconds  
LR changed during epoch: 2.94e-07 -> 5.79e-05  
total runtime to train this model was 25.63029670715332 seconds  
Hyperparameteres for model 1 at epoch 61  
lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2901670932769775 seconds  
Loss: 0.3906  
Train Accuracy: 86.03%  
Test Accuracy: 79.34%

Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6036205291748047 seconds  
LR changed during epoch: 2.76e-05 -> 2.26e-05  
total runtime to train this model was 25.282569885253906 seconds  
Hyperparameteres for model 2 at epoch 61  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2899818420410156 seconds  
Loss: 0.3648  
Train Accuracy: 86.97%  
Test Accuracy: 79.26%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.640742540359497 seconds  
LR changed during epoch: 1.66e-04 -> 1.60e-04  
total runtime to train this model was 25.63997530937195 seconds  
Hyperparameteres for model 3 at epoch 61  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2795116901397705 seconds  
Loss: 0.5567  
Train Accuracy: 80.41%  
Test Accuracy: 77.48%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6201965808868408 seconds  
LR changed during epoch: 4.60e-04 -> 4.59e-04  
total runtime to train this model was 25.59656262397766 seconds  
Hyperparameteres for model 4 at epoch 61  
lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836  
drop\_path: 0.1980296121392649  
warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.257666826248169 seconds

Loss: 0.6371  
Train Accuracy: 77.18%  
Test Accuracy: 75.54%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 61 Summary:

=====

Time: 149.98s (Avg member: 30.00s)  
Population Mean Accuracy: 77.37%  
Best Member Accuracy: 79.34%  
Mean Batch Size: 256  
Mean Learning Rate: 3.75e-04  
Mean Weight Decay: 0.351

=====

Epoch 62/70

=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.7719860076904297 seconds  
LR changed during epoch: 4.10e-04 -> 4.07e-04  
total runtime to train this model was 24.543023824691772 seconds  
Hyperparameteres for model 0 at epoch 62  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4157156944274902 seconds

Loss: 0.6285  
Train Accuracy: 77.66%  
Test Accuracy: 74.99%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.5920562744140625 seconds  
LR changed during epoch: 5.79e-05 -> 1.16e-04  
total runtime to train this model was 25.651153802871704 seconds  
Hyperparameteres for model 1 at epoch 62  
lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3146543502807617 seconds  
Loss: 0.4209  
Train Accuracy: 85.12%  
Test Accuracy: 78.79%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6297025680541992 seconds  
LR changed during epoch: 2.26e-05 -> 1.81e-05  
total runtime to train this model was 25.514251470565796 seconds  
Hyperparameteres for model 2 at epoch 62  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2673099040985107 seconds  
Loss: 0.3589  
Train Accuracy: 87.16%  
Test Accuracy: 79.08%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6144256591796875 seconds  
LR changed during epoch: 1.60e-04 -> 1.55e-04  
total runtime to train this model was 25.8387393951416 seconds  
Hyperparameteres for model 3 at epoch 62  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.278191089630127 seconds  
Loss: 0.5480  
Train Accuracy: 80.75%  
Test Accuracy: 77.06%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.5987298488616943 seconds  
LR changed during epoch: 4.59e-04 -> 4.59e-04  
total runtime to train this model was 25.659145832061768 seconds  
Hyperparameteres for model 4 at epoch 62  
lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836

drop\_path: 0.1980296121392649  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3515398502349854 seconds  
Loss: 0.6465  
Train Accuracy: 77.14%  
Test Accuracy: 73.78%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====  
Epoch 62 Summary:  
=====

Time: 149.27s (Avg member: 29.85s)  
Population Mean Accuracy: 76.74%  
Best Member Accuracy: 79.08%  
Mean Batch Size: 256  
Mean Learning Rate: 3.75e-04  
Mean Weight Decay: 0.351

=====  
Epoch 63/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.727097988128662 seconds  
LR changed during epoch: 4.07e-04 -> 4.04e-04  
total runtime to train this model was 25.07664966583252 seconds  
Hyperparameteres for model 0 at epoch 63  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.9812347888946533 seconds  
Loss: 0.6318  
Train Accuracy: 77.55%  
Test Accuracy: 75.87%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.7487461566925049 seconds  
LR changed during epoch: 1.16e-04 -> 1.73e-04  
total runtime to train this model was 25.335978984832764 seconds  
Hyperparameteres for model 1 at epoch 63  
lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.8892667293548584 seconds  
Loss: 0.4464  
Train Accuracy: 84.18%  
Test Accuracy: 78.43%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6089322566986084 seconds  
LR changed during epoch: 1.81e-05 -> 1.42e-05  
total runtime to train this model was 25.69291925430298 seconds  
Hyperparameteres for model 2 at epoch 63  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196  
drop\_path: 0.21704259365986278

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2894539833068848 seconds  
Loss: 0.3581  
Train Accuracy: 87.23%  
Test Accuracy: 79.28%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6158978939056396 seconds  
LR changed during epoch: 1.55e-04 -> 1.49e-04  
total runtime to train this model was 25.729642868041992 seconds  
Hyperparameteres for model 3 at epoch 63  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886

warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1933443546295166 seconds  
Loss: 0.5413  
Train Accuracy: 81.06%  
Test Accuracy: 77.49%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6332852840423584 seconds  
LR changed during epoch: 4.59e-04 -> 4.57e-04

total runtime to train this model was 25.34273362159729 seconds

Hyperparameteres for model 4 at epoch 63

lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836

drop\_path: 0.1980296121392649

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.2370100021362305 seconds

Loss: 0.6495

Train Accuracy: 76.89%

Test Accuracy: 75.41%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 63 Summary:

=====

Time: 149.35s (Avg member: 29.87s)

Population Mean Accuracy: 77.30%

Best Member Accuracy: 79.28%

Mean Batch Size: 256

Mean Learning Rate: 3.75e-04

Mean Weight Decay: 0.351

=====

Epoch 64/70

=====

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

built data in 1.6415555477142334 seconds

LR changed during epoch: 4.04e-04 -> 4.00e-04

total runtime to train this model was 25.200812339782715 seconds

Hyperparameteres for model 0 at epoch 64

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.5672762393951416 seconds

Loss: 0.6209

Train Accuracy: 78.01%

Test Accuracy: 75.49%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.8256559371948242 seconds

LR changed during epoch: 1.73e-04 -> 2.31e-04

total runtime to train this model was 24.603870153427124 seconds

Hyperparameteres for model 1 at epoch 64

lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2555150985717773 seconds

Loss: 0.4912

Train Accuracy: 82.48%

Test Accuracy: 77.48%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.6015126705169678 seconds

LR changed during epoch: 1.42e-05 -> 1.07e-05

total runtime to train this model was 26.066446781158447 seconds

Hyperparameteres for model 2 at epoch 64

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.329392194747925 seconds

Loss: 0.3530

Train Accuracy: 87.49%

Test Accuracy: 79.29%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.6290371417999268 seconds

LR changed during epoch: 1.49e-04 -> 1.43e-04

total runtime to train this model was 25.95762848854065 seconds

Hyperparameteres for model 3 at epoch 64

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.285841226577759 seconds

Loss: 0.5383

Train Accuracy: 81.17%

Test Accuracy: 77.46%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.6089060306549072 seconds

LR changed during epoch: 4.57e-04 -> 4.55e-04

total runtime to train this model was 25.71599578857422 seconds

Hyperparameteres for model 4 at epoch 64

lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836

drop\_path: 0.1980296121392649

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3461966514587402 seconds

Loss: 0.6582

Train Accuracy: 76.83%

Test Accuracy: 75.73%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 64 Summary:

=====

Time: 149.84s (Avg member: 29.97s)

Population Mean Accuracy: 77.09%

Best Member Accuracy: 79.29%

Mean Batch Size: 256

Mean Learning Rate: 3.75e-04

Mean Weight Decay: 0.351

=====

Epoch 65/70

=====

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

built data in 1.617222547531128 seconds

LR changed during epoch: 4.00e-04 -> 3.95e-04

total runtime to train this model was 25.467233657836914 seconds

Hyperparameteres for model 0 at epoch 65

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3529417514801025 seconds

Loss: 0.6216

Train Accuracy: 77.95%

Test Accuracy: 76.04%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.7427351474761963 seconds  
LR changed during epoch: 2.31e-04 -> 2.88e-04  
total runtime to train this model was 24.288334608078003 seconds  
Hyperparameteres for model 1 at epoch 65  
lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.230015993118286 seconds  
Loss: 0.5250  
Train Accuracy: 81.19%  
Test Accuracy: 76.96%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.6773769855499268 seconds  
LR changed during epoch: 1.07e-05 -> 7.74e-06  
total runtime to train this model was 25.28682780265808 seconds  
Hyperparameteres for model 2 at epoch 65  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.4314026832580566 seconds  
Loss: 0.3504  
Train Accuracy: 87.42%  
Test Accuracy: 79.20%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6009161472320557 seconds  
LR changed during epoch: 1.43e-04 -> 1.37e-04  
total runtime to train this model was 25.400182723999023 seconds  
Hyperparameteres for model 3 at epoch 65  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.334327459335327 seconds  
Loss: 0.5321  
Train Accuracy: 81.33%  
Test Accuracy: 77.79%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6187665462493896 seconds  
LR changed during epoch: 4.55e-04 -> 4.53e-04  
total runtime to train this model was 25.759299278259277 seconds  
Hyperparameteres for model 4 at epoch 65  
lr: 0.0004596857325746771

weight\_decay: 0.43691229865660836

drop\_path: 0.1980296121392649

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1953768730163574 seconds  
Loss: 0.6621  
Train Accuracy: 76.67%  
Test Accuracy: 72.99%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

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

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

Top performers: [79.2]

Bottom performers: [72.99]

Member 4: lr changed from 0.0004596857325746771 to 0.00032915427221629813  
Member 4: weight\_decay changed from 0.43691229865660836 to 0.4038313148125787  
Member 4: drop\_path changed from 0.1980296121392649 to 0.12407076159181914  
Member 4 copied from 2  
LR=3.29e-04, WD=0.404, DropPath=0.124, Warmup=5 epochs, Batch=256

=====  
Epoch 65 Summary:  
=====

Time: 148.29s (Avg member: 29.65s)  
Population Mean Accuracy: 76.60%  
Best Member Accuracy: 79.20%  
Mean Batch Size: 256  
Mean Learning Rate: 3.49e-04  
Mean Weight Decay: 0.344

=====  
Epoch 66/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5964062213897705 seconds  
LR changed during epoch: 3.95e-04 -> 3.90e-04  
total runtime to train this model was 25.289937019348145 seconds  
Hyperparameteres for model 0 at epoch 66  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2387378215789795 seconds

Loss: 0.6148

Train Accuracy: 78.33%

Test Accuracy: 75.53%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.7180495262145996 seconds

LR changed during epoch: 2.88e-04 -> 2.88e-04

total runtime to train this model was 25.301767349243164 seconds

Hyperparameteres for model 1 at epoch 66

lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.2212331295013428 seconds

Loss: 0.5512

Train Accuracy: 80.45%

Test Accuracy: 76.64%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.7234842777252197 seconds

LR changed during epoch: 7.74e-06 -> 5.32e-06

total runtime to train this model was 25.30445098876953 seconds

Hyperparameteres for model 2 at epoch 66

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.6290371417999268 seconds

Loss: 0.3488

Train Accuracy: 87.62%

Test Accuracy: 79.35%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

```
--- Training Member 3 (Batch size: 256) ---
built data in 1.6750378608703613 seconds
LR changed during epoch: 1.37e-04 -> 1.31e-04
total runtime to train this model was 25.89114284515381 seconds
Hyperparameteres for model 3 at epoch 66
lr: 0.0002441756069039894

weight_decay: 0.427017108353093
drop_path: 0.27804434317397886
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.171143054962158 seconds
Loss: 0.5148
Train Accuracy: 81.72%
Test Accuracy: 77.69%
Google Drive already mounted.
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_3_seed_38042.pt

--- Training Member 4 (Batch size: 256) ---
built data in 1.6035916805267334 seconds
LR changed during epoch: 3.36e-07 -> 6.62e-05
total runtime to train this model was 25.60220956802368 seconds
Hyperparameteres for model 4 at epoch 66
lr: 0.00032915427221629813

weight_decay: 0.4038313148125787
drop_path: 0.12407076159181914
warmup_epochs: 5
batch_size: 256

_____ end of hyperparam printing _____
evaluation in 2.219588279724121 seconds
Loss: 0.3690
Train Accuracy: 86.99%
Test Accuracy: 79.22%
Google Drive already mounted.
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab_Checkpoints/pbt_checkpoints/model_4_seed_38042.pt

=====
Epoch 66 Summary:
=====
Time: 149.38s (Avg member: 29.88s)
Population Mean Accuracy: 77.69%
Best Member Accuracy: 79.35%
Mean Batch Size: 256
Mean Learning Rate: 3.49e-04
Mean Weight Decay: 0.344

=====
Epoch 67/70
=====

--- Training Member 0 (Batch size: 256) ---
built data in 1.6865036487579346 seconds
```

LR changed during epoch: 3.90e-04 -> 3.85e-04  
total runtime to train this model was 25.417775630950928 seconds  
Hyperparameteres for model 0 at epoch 67  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2273125648498535 seconds  
Loss: 0.6086  
Train Accuracy: 78.33%  
Test Accuracy: 75.67%  
Google Drive already mounted.  
Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.6552963256835938 seconds  
LR changed during epoch: 2.88e-04 -> 2.87e-04  
total runtime to train this model was 25.206361293792725 seconds  
Hyperparameteres for model 1 at epoch 67  
lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.5420405864715576 seconds  
Loss: 0.5576  
Train Accuracy: 80.13%  
Test Accuracy: 76.68%  
Google Drive already mounted.  
Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.7621071338653564 seconds  
LR changed during epoch: 5.32e-06 -> 3.43e-06  
total runtime to train this model was 24.69681453704834 seconds  
Hyperparameteres for model 2 at epoch 67  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.206165313720703 seconds  
Loss: 0.3471

Train Accuracy: 87.63%  
Test Accuracy: 79.31%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.5933833122253418 seconds  
LR changed during epoch: 1.31e-04 -> 1.25e-04  
total runtime to train this model was 25.389938831329346 seconds  
Hyperparameteres for model 3 at epoch 67  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.242302417755127 seconds  
Loss: 0.5114  
Train Accuracy: 81.92%  
Test Accuracy: 78.22%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.6475498676300049 seconds  
LR changed during epoch: 6.62e-05 -> 1.32e-04  
total runtime to train this model was 25.555182456970215 seconds  
Hyperparameteres for model 4 at epoch 67  
lr: 0.00032915427221629813

weight\_decay: 0.4038313148125787  
drop\_path: 0.12407076159181914  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.3061392307281494 seconds  
Loss: 0.4013  
Train Accuracy: 85.60%  
Test Accuracy: 78.60%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 67 Summary:

=====

Time: 148.38s (Avg member: 29.68s)  
Population Mean Accuracy: 77.70%  
Best Member Accuracy: 79.31%  
Mean Batch Size: 256  
Mean Learning Rate: 3.49e-04  
Mean Weight Decay: 0.344

=====

Epoch 68/70

---

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

built data in 1.6177594661712646 seconds

LR changed during epoch: 3.85e-04 -> 3.79e-04

total runtime to train this model was 26.152817487716675 seconds

Hyperparameteres for model 0 at epoch 68

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.261950731277466 seconds

Loss: 0.6065

Train Accuracy: 78.44%

Test Accuracy: 76.46%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.6047687530517578 seconds

LR changed during epoch: 2.87e-04 -> 2.87e-04

total runtime to train this model was 25.733326196670532 seconds

Hyperparameteres for model 1 at epoch 68

lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.4874188899993896 seconds

Loss: 0.5675

Train Accuracy: 79.64%

Test Accuracy: 76.52%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.7740740776062012 seconds

LR changed during epoch: 3.43e-06 -> 2.08e-06

total runtime to train this model was 25.19217324256897 seconds

Hyperparameteres for model 2 at epoch 68

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.0320827960968018 seconds

Loss: 0.3427

Train Accuracy: 87.73%

Test Accuracy: 79.26%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.5944912433624268 seconds

LR changed during epoch: 1.25e-04 -> 1.20e-04

total runtime to train this model was 25.678980112075806 seconds

Hyperparameteres for model 3 at epoch 68

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.1950221061706543 seconds

Loss: 0.5066

Train Accuracy: 82.32%

Test Accuracy: 78.09%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.590872049331665 seconds

LR changed during epoch: 1.32e-04 -> 1.98e-04

total runtime to train this model was 25.771889209747314 seconds

Hyperparameteres for model 4 at epoch 68

lr: 0.00032915427221629813

weight\_decay: 0.4038313148125787

drop\_path: 0.12407076159181914

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.325483798980713 seconds

Loss: 0.4400

Train Accuracy: 84.25%

Test Accuracy: 77.47%

Google Drive already mounted.

Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 68 Summary:

=====

Time: 150.21s (Avg member: 30.04s)

Population Mean Accuracy: 77.56%

Best Member Accuracy: 79.26%

Mean Batch Size: 256  
Mean Learning Rate: 3.49e-04  
Mean Weight Decay: 0.344

=====  
Epoch 69/70  
=====

--- Training Member 0 (Batch size: 256) ---  
built data in 1.5861563682556152 seconds  
LR changed during epoch: 3.79e-04 -> 3.73e-04  
total runtime to train this model was 25.523138999938965 seconds  
Hyperparameteres for model 0 at epoch 69  
lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2606186866760254 seconds  
Loss: 0.5966  
Train Accuracy: 78.95%  
Test Accuracy: 75.96%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

--- Training Member 1 (Batch size: 256) ---  
built data in 1.601985216140747 seconds  
LR changed during epoch: 2.87e-04 -> 2.85e-04  
total runtime to train this model was 25.59713053703308 seconds  
Hyperparameteres for model 1 at epoch 69  
lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.2649779319763184 seconds  
Loss: 0.5708  
Train Accuracy: 79.76%  
Test Accuracy: 76.39%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

--- Training Member 2 (Batch size: 256) ---  
built data in 1.9080946445465088 seconds  
LR changed during epoch: 2.08e-06 -> 1.27e-06  
total runtime to train this model was 24.330950260162354 seconds  
Hyperparameteres for model 2 at epoch 69  
lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 3.4790031909942627 seconds  
Loss: 0.3420  
Train Accuracy: 87.98%  
Test Accuracy: 79.46%  
Google Drive already mounted.  
Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

--- Training Member 3 (Batch size: 256) ---  
built data in 1.6153666973114014 seconds  
LR changed during epoch: 1.20e-04 -> 1.14e-04  
total runtime to train this model was 25.509299278259277 seconds  
Hyperparameteres for model 3 at epoch 69  
lr: 0.0002441756069039894

weight\_decay: 0.427017108353093  
drop\_path: 0.27804434317397886  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.221473455429077 seconds  
Loss: 0.4966  
Train Accuracy: 82.49%  
Test Accuracy: 77.95%  
Google Drive already mounted.  
Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

--- Training Member 4 (Batch size: 256) ---  
built data in 1.673079013824463 seconds  
LR changed during epoch: 1.98e-04 -> 2.64e-04  
total runtime to train this model was 25.525962591171265 seconds  
Hyperparameteres for model 4 at epoch 69  
lr: 0.00032915427221629813

weight\_decay: 0.4038313148125787  
drop\_path: 0.12407076159181914  
warmup\_epochs: 5  
batch\_size: 256

\_\_\_\_\_ end of hyperparam printing \_\_\_\_\_  
evaluation in 2.25565767288208 seconds  
Loss: 0.4828  
Train Accuracy: 82.66%  
Test Accuracy: 76.77%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

=====

Epoch 69 Summary:

```
=====
```

Time: 148.54s (Avg member: 29.71s)

Population Mean Accuracy: 77.31%

Best Member Accuracy: 79.46%

Mean Batch Size: 256

Mean Learning Rate: 3.49e-04

Mean Weight Decay: 0.344

```
=====
```

Epoch 70/70

```
=====
```

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

built data in 1.6021695137023926 seconds

LR changed during epoch: 3.73e-04 -> 3.67e-04

total runtime to train this model was 25.399497032165527 seconds

Hyperparameteres for model 0 at epoch 70

lr: 0.0004192019286653853

weight\_decay: 0.3069949647772656

drop\_path: 0.16446627111480136

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3446507453918457 seconds

Loss: 0.5969

Train Accuracy: 78.98%

Test Accuracy: 77.31%

Google Drive already mounted.

Member 0: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_0\_seed\_38042.pt

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

built data in 1.6162848472595215 seconds

LR changed during epoch: 2.85e-04 -> 2.84e-04

total runtime to train this model was 25.53445339202881 seconds

Hyperparameteres for model 1 at epoch 70

lr: 0.00028809369933882557

weight\_decay: 0.5

drop\_path: 0.3446755770395824

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.376296043395996 seconds

Loss: 0.5702

Train Accuracy: 79.76%

Test Accuracy: 76.80%

Google Drive already mounted.

Member 1: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_1\_seed\_38042.pt

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

built data in 1.7536005973815918 seconds

LR changed during epoch: 1.27e-06 -> 1.00e-06

total runtime to train this model was 24.59127902984619 seconds

Hyperparameteres for model 2 at epoch 70

lr: 0.00046580972075259094

weight\_decay: 0.08322155840047196

drop\_path: 0.21704259365986278

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 3.2345635890960693 seconds

Loss: 0.3463

Train Accuracy: 87.67%

Test Accuracy: 79.40%

Google Drive already mounted.

Member 2: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_2\_seed\_38042.pt

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

built data in 1.69635009765625 seconds

LR changed during epoch: 1.14e-04 -> 1.08e-04

total runtime to train this model was 25.284122467041016 seconds

Hyperparameteres for model 3 at epoch 70

lr: 0.0002441756069039894

weight\_decay: 0.427017108353093

drop\_path: 0.27804434317397886

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.6302661895751953 seconds

Loss: 0.4945

Train Accuracy: 82.74%

Test Accuracy: 78.75%

Google Drive already mounted.

Member 3: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_3\_seed\_38042.pt

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

built data in 1.6132714748382568 seconds

LR changed during epoch: 2.64e-04 -> 3.29e-04

total runtime to train this model was 25.80181121826172 seconds

Hyperparameteres for model 4 at epoch 70

lr: 0.00032915427221629813

weight\_decay: 0.4038313148125787

drop\_path: 0.12407076159181914

warmup\_epochs: 5

batch\_size: 256

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

evaluation in 2.3417582511901855 seconds

Loss: 0.5310

Train Accuracy: 80.93%

Test Accuracy: 74.92%  
Google Drive already mounted.  
Member 4: Checkpoint saved to /content/drive/MyDrive/Colab\_Checkpoints/pbt\_checkpoints/model\_4\_seed\_38042.pt

--- Population Update (Epoch 70) ---

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

Top performers: [79.4]

Bottom performers: [74.92]

Member 4: lr changed from 0.00032915427221629813 to 0.0002843052649597151

Member 4: weight\_decay changed from 0.4038313148125787 to 0.32946300137199935

Member 4: drop\_path changed from 0.12407076159181914 to 0.19293406428963156

Member 4 copied from 2

LR=2.84e-04, WD=0.329, DropPath=0.193, Warmup=5 epochs, Batch=256

=====

Epoch 70 Summary:

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Time: 149.12s (Avg member: 29.82s)

Population Mean Accuracy: 77.44%

Best Member Accuracy: 79.40%

Mean Batch Size: 256

Mean Learning Rate: 3.40e-04

Mean Weight Decay: 0.329

=====

PBT TRAINING COMPLETE

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Best member: 2

Best accuracy: 79.40%

Best hyperparameters:

Learning Rate: 4.66e-04

Weight Decay: 0.083

Drop Path Rate: 0.217

Warmup Epochs: 5

Batch Size: 256

=====

PBT TIMING REPORT

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Overall Statistics Value

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Total runtime 10315.09s (171.92 min)

Number of epochs 70

Number of population updates 14

Epoch Timing Value

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Average epoch time 147.35s

Std epoch time 3.90s

Min epoch time 142.84s (epoch 31)

Max epoch time 173.62s (epoch 1)

Member Training Timing Value

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Average member time per epoch 29.47s

Total training time 10314.26s

Training efficiency 100.0%

Population Update Timing Value

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Average update time	0.02s
Total update time	0.21s
Update efficiency	0.0%
<hr/>	
Batch Size Analysis	Avg Time      Samples
<hr/>	
Batch size 256	29.47s      350
<hr/>	
Per-Member Statistics	Avg Time      Total Time
<hr/>	
Member 0	29.56s      2068.88s
Member 1	29.46s      2062.46s
Member 2	29.45s      2061.51s
Member 3	29.42s      2059.24s
Member 4	29.46s      2062.17s
<hr/>	

Experiment completed successfully!

Results saved to: pbt\_vit\_timing\_results.png

Detailed timing saved to: pbt\_detailed\_timing.png