

xydi_3-run_social_lstm

April 11, 2025

```
[9]: from tqdm import tqdm
import torch
import torch.nn as nn
import torch.optim as optim
from sklearn.metrics import accuracy_score, classification_report
import pandas as pd
from social_lstm_classifier import SocialLSTMClassifier

trajectory_features = ['Positionx', 'Positiony', 'Distance', 'Speed', 'Speed_
↳Change', 'Direction', 'Direction Change']

feature_combos = {
    # 'xy_2': ['Positionx', 'Positiony'],
    # 'xyd_3': ['Positionx', 'Positiony', 'Distance'],
    # 'xydsdc_7': ['Positionx', 'Positiony', 'Distance', 'Speed', 'Direction',
↳'Speed Change', 'Direction Change'],
    # 'xysd_4': ['Positionx', 'Positiony', 'Speed', 'Direction'],
    # 'xyds_4': ['Positionx', 'Positiony', 'Distance', 'Speed'],
    # 'xydd_4': ['Positionx', 'Positiony', 'Distance', 'Direction'],
    # 'xydsc_5': ['Positionx', 'Positiony', 'Distance', 'Speed', 'Speed_
↳Change'],
    # 'xyddc_5': ['Positionx', 'Positiony', 'Distance', 'Direction', 'Direction_
↳Change'],
    # 'xys_3': ['Positionx', 'Positiony', 'Speed'],
    'xydi_3': ['Positionx', 'Positiony', 'Direction'],
    # 'xysc_4': ['Positionx', 'Positiony', 'Speed', 'Speed Change'],
    # 'xydc_4': ['Positionx', 'Positiony', 'Direction', 'Direction Change']
}

train_data = torch.load("./train_social_lstm_full.pt")
test_data = torch.load("./test_social_lstm_full.pt")

results = []

def run_experiment(feature_set, name):
    input_size = len(feature_set)
    index_map = [trajectory_features.index(f) for f in feature_set]
```

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model = SocialLSTMClassifier(input_size=input_size)
criterion = nn.CrossEntropyLoss()
optimizer = optim.Adam(model.parameters(), lr=0.005)
epochs = 250

model.train()
for epoch in range(epochs):
    total_loss = 0.0
    for sample in tqdm(train_data, desc=f"Epoch {epoch+1}/{epochs}"):
        traj = sample['trajectory'][:, index_map].unsqueeze(1)
        neighbors = sample['neighbors'][:, :, index_map]
        mask = sample['neighbor_mask']
        label = torch.tensor([int(sample['cluster']) - 1], dtype=torch.long)

        optimizer.zero_grad()
        logits = model(traj, neighbors, mask)
        loss = criterion(logits, label)
        loss.backward()
        optimizer.step()

        total_loss += loss.item()

    avg_loss = total_loss / len(train_data)
    print(f"\n[Feature Set: {name}] Epoch [{epoch+1}/{epochs}] - Avg Loss:␣
↪{avg_loss:.4f}")

model.eval()
y_true = []
y_pred = []
with torch.no_grad():
    for sample in tqdm(train_data, desc=f"Epoch {epoch+1}/{epochs}"):
        traj = sample['trajectory'][:, index_map].unsqueeze(1)
        neighbors = sample['neighbors'][:, :, index_map]
        mask = sample['neighbor_mask']
        label = int(sample['cluster']) - 1
        logits = model(traj, neighbors, mask)
        pred = logits.argmax(dim=1).item()
        y_true.append(label)
        y_pred.append(pred)

acc = accuracy_score(y_true, y_pred)
clf_report = classification_report(y_true, y_pred, output_dict=True)
results.append({
    "Feature_Set": name,
    "Accuracy": acc,

```

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    "Macro_F1": clf_report['macro avg']['f1-score'],
    "Weighted_F1": clf_report['weighted avg']['f1-score']
})

```

```

for name, feats in feature_combos.items():
    run_experiment(feats, name)

```

```

/var/folders/nt/7f1y5h8s6qd2mh1ypgjkgbpw0000gn/T/ipykernel_90241/428396086.py:26
: FutureWarning: You are using `torch.load` with `weights_only=False` (the
current default value), which uses the default pickle module implicitly. It is
possible to construct malicious pickle data which will execute arbitrary code
during unpickling (See

```

<https://github.com/pytorch/pytorch/blob/main/SECURITY.md#untrusted-models> for more details). In a future release, the default value for `weights_only` will be flipped to `True`. This limits the functions that could be executed during unpickling. Arbitrary objects will no longer be allowed to be loaded via this mode unless they are explicitly allowlisted by the user via `torch.serialization.add_safe_globals`. We recommend you start setting `weights_only=True` for any use case where you don't have full control of the loaded file. Please open an issue on GitHub for any issues related to this experimental feature.

```

train_data = torch.load("./train_social_lstm_full.pt")

```

```

/var/folders/nt/7f1y5h8s6qd2mh1ypgjkgbpw0000gn/T/ipykernel_90241/428396086.py:27
: FutureWarning: You are using `torch.load` with `weights_only=False` (the
current default value), which uses the default pickle module implicitly. It is
possible to construct malicious pickle data which will execute arbitrary code
during unpickling (See

```

<https://github.com/pytorch/pytorch/blob/main/SECURITY.md#untrusted-models> for more details). In a future release, the default value for `weights_only` will be flipped to `True`. This limits the functions that could be executed during unpickling. Arbitrary objects will no longer be allowed to be loaded via this mode unless they are explicitly allowlisted by the user via `torch.serialization.add_safe_globals`. We recommend you start setting `weights_only=True` for any use case where you don't have full control of the loaded file. Please open an issue on GitHub for any issues related to this experimental feature.

```

test_data = torch.load("./test_social_lstm_full.pt")

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Epoch 1/250: 100%|          | 570/570 [00:03<00:00, 148.99it/s]

```

```

[Feature Set: xydi_3] Epoch [1/250] - Avg Loss: 0.6867

```

```

Epoch 2/250: 100%|          | 570/570 [00:03<00:00, 153.68it/s]

```

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[Feature Set: xydi_3] Epoch [2/250] - Avg Loss: 0.6738

```

```

Epoch 3/250: 100%|          | 570/570 [00:03<00:00, 151.35it/s]

```

[Feature Set: xydi_3] Epoch [3/250] - Avg Loss: 0.6779
Epoch 4/250: 100%| | 570/570 [00:03<00:00, 152.50it/s]

[Feature Set: xydi_3] Epoch [4/250] - Avg Loss: 0.6676
Epoch 5/250: 100%| | 570/570 [00:03<00:00, 153.78it/s]

[Feature Set: xydi_3] Epoch [5/250] - Avg Loss: 0.6767
Epoch 6/250: 100%| | 570/570 [00:03<00:00, 157.19it/s]

[Feature Set: xydi_3] Epoch [6/250] - Avg Loss: 0.6582
Epoch 7/250: 100%| | 570/570 [00:03<00:00, 157.44it/s]

[Feature Set: xydi_3] Epoch [7/250] - Avg Loss: 0.8705
Epoch 8/250: 100%| | 570/570 [00:03<00:00, 153.49it/s]

[Feature Set: xydi_3] Epoch [8/250] - Avg Loss: 0.6619
Epoch 9/250: 100%| | 570/570 [00:03<00:00, 157.56it/s]

[Feature Set: xydi_3] Epoch [9/250] - Avg Loss: 0.6453
Epoch 10/250: 100%| | 570/570 [00:03<00:00, 156.85it/s]

[Feature Set: xydi_3] Epoch [10/250] - Avg Loss: 0.7612
Epoch 11/250: 100%| | 570/570 [00:03<00:00, 153.34it/s]

[Feature Set: xydi_3] Epoch [11/250] - Avg Loss: 0.6638
Epoch 12/250: 100%| | 570/570 [00:03<00:00, 157.34it/s]

[Feature Set: xydi_3] Epoch [12/250] - Avg Loss: 0.6423
Epoch 13/250: 100%| | 570/570 [00:03<00:00, 156.39it/s]

[Feature Set: xydi_3] Epoch [13/250] - Avg Loss: 0.6354
Epoch 14/250: 100%| | 570/570 [00:03<00:00, 156.02it/s]

[Feature Set: xydi_3] Epoch [14/250] - Avg Loss: 0.6320
Epoch 15/250: 100%| | 570/570 [00:03<00:00, 153.81it/s]

[Feature Set: xydi_3] Epoch [15/250] - Avg Loss: 0.6094
Epoch 16/250: 100%| | 570/570 [00:03<00:00, 157.67it/s]

[Feature Set: xydi_3] Epoch [16/250] - Avg Loss: 0.6110
Epoch 17/250: 100%| | 570/570 [00:03<00:00, 153.43it/s]

[Feature Set: xydi_3] Epoch [17/250] - Avg Loss: 0.5826
Epoch 18/250: 100%| | 570/570 [00:03<00:00, 159.88it/s]

[Feature Set: xydi_3] Epoch [18/250] - Avg Loss: 0.5711
Epoch 19/250: 100%| | 570/570 [00:03<00:00, 157.36it/s]

[Feature Set: xydi_3] Epoch [19/250] - Avg Loss: 0.5782
Epoch 20/250: 100%| | 570/570 [00:03<00:00, 156.63it/s]

[Feature Set: xydi_3] Epoch [20/250] - Avg Loss: 0.5937
Epoch 21/250: 100%| | 570/570 [00:04<00:00, 141.35it/s]

[Feature Set: xydi_3] Epoch [21/250] - Avg Loss: 0.5942
Epoch 22/250: 100%| | 570/570 [00:03<00:00, 159.64it/s]

[Feature Set: xydi_3] Epoch [22/250] - Avg Loss: 0.5570
Epoch 23/250: 100%| | 570/570 [00:03<00:00, 158.06it/s]

[Feature Set: xydi_3] Epoch [23/250] - Avg Loss: 0.5633
Epoch 24/250: 100%| | 570/570 [00:03<00:00, 160.53it/s]

[Feature Set: xydi_3] Epoch [24/250] - Avg Loss: 0.5269
Epoch 25/250: 100%| | 570/570 [00:03<00:00, 153.96it/s]

[Feature Set: xydi_3] Epoch [25/250] - Avg Loss: 0.5009
Epoch 26/250: 100%| | 570/570 [00:03<00:00, 158.37it/s]

[Feature Set: xydi_3] Epoch [26/250] - Avg Loss: 0.4931
Epoch 27/250: 100%| | 570/570 [00:03<00:00, 160.21it/s]

[Feature Set: xydi_3] Epoch [27/250] - Avg Loss: 0.4781
Epoch 28/250: 100%| | 570/570 [00:03<00:00, 161.16it/s]

[Feature Set: xydi_3] Epoch [28/250] - Avg Loss: 0.4631
Epoch 29/250: 100%| | 570/570 [00:03<00:00, 156.11it/s]

[Feature Set: xydi_3] Epoch [29/250] - Avg Loss: 0.4915
Epoch 30/250: 100%| | 570/570 [00:03<00:00, 160.74it/s]

[Feature Set: xydi_3] Epoch [30/250] - Avg Loss: 0.4872
Epoch 31/250: 100%| | 570/570 [00:03<00:00, 158.97it/s]

[Feature Set: xydi_3] Epoch [31/250] - Avg Loss: 0.4930
Epoch 32/250: 100%| | 570/570 [00:04<00:00, 140.74it/s]

[Feature Set: xydi_3] Epoch [32/250] - Avg Loss: 0.4847
Epoch 33/250: 100%| | 570/570 [00:03<00:00, 157.66it/s]

[Feature Set: xydi_3] Epoch [33/250] - Avg Loss: 0.4495
Epoch 34/250: 100%| | 570/570 [00:03<00:00, 159.66it/s]

[Feature Set: xydi_3] Epoch [34/250] - Avg Loss: 0.3979
Epoch 35/250: 100%| | 570/570 [00:03<00:00, 156.14it/s]

[Feature Set: xydi_3] Epoch [35/250] - Avg Loss: 0.4009
Epoch 36/250: 100%| | 570/570 [00:03<00:00, 159.35it/s]

[Feature Set: xydi_3] Epoch [36/250] - Avg Loss: 0.4271
Epoch 37/250: 100%| | 570/570 [00:03<00:00, 156.27it/s]

[Feature Set: xydi_3] Epoch [37/250] - Avg Loss: 0.4643
Epoch 38/250: 100%| | 570/570 [00:03<00:00, 158.08it/s]

[Feature Set: xydi_3] Epoch [38/250] - Avg Loss: 0.3895
Epoch 39/250: 100%| | 570/570 [00:03<00:00, 160.52it/s]

[Feature Set: xydi_3] Epoch [39/250] - Avg Loss: 0.3785
Epoch 40/250: 100%| | 570/570 [00:03<00:00, 158.13it/s]

[Feature Set: xydi_3] Epoch [40/250] - Avg Loss: 0.4731
Epoch 41/250: 100%| | 570/570 [00:03<00:00, 160.62it/s]

[Feature Set: xydi_3] Epoch [41/250] - Avg Loss: 0.4614
Epoch 42/250: 100%| | 570/570 [00:03<00:00, 160.60it/s]

[Feature Set: xydi_3] Epoch [42/250] - Avg Loss: 0.4529
Epoch 43/250: 100%| | 570/570 [00:03<00:00, 158.59it/s]

[Feature Set: xydi_3] Epoch [43/250] - Avg Loss: 0.3871
Epoch 44/250: 100%| | 570/570 [00:03<00:00, 160.79it/s]

[Feature Set: xydi_3] Epoch [44/250] - Avg Loss: 0.3872
Epoch 45/250: 100%| | 570/570 [00:03<00:00, 160.85it/s]

[Feature Set: xydi_3] Epoch [45/250] - Avg Loss: 0.3426
Epoch 46/250: 100%| | 570/570 [00:03<00:00, 158.85it/s]

[Feature Set: xydi_3] Epoch [46/250] - Avg Loss: 0.3704
Epoch 47/250: 100%| | 570/570 [00:03<00:00, 160.35it/s]

[Feature Set: xydi_3] Epoch [47/250] - Avg Loss: 0.3542
Epoch 48/250: 100%| | 570/570 [00:03<00:00, 160.44it/s]

[Feature Set: xydi_3] Epoch [48/250] - Avg Loss: 0.3535
Epoch 49/250: 100%| | 570/570 [00:03<00:00, 158.43it/s]

[Feature Set: xydi_3] Epoch [49/250] - Avg Loss: 0.3499
Epoch 50/250: 100%| | 570/570 [00:03<00:00, 160.55it/s]

[Feature Set: xydi_3] Epoch [50/250] - Avg Loss: 0.3196
Epoch 51/250: 100%| | 570/570 [00:03<00:00, 160.27it/s]

[Feature Set: xydi_3] Epoch [51/250] - Avg Loss: 0.3329
Epoch 52/250: 100%| | 570/570 [00:03<00:00, 158.34it/s]

[Feature Set: xydi_3] Epoch [52/250] - Avg Loss: 0.3193
Epoch 53/250: 100%| | 570/570 [00:03<00:00, 152.32it/s]

[Feature Set: xydi_3] Epoch [53/250] - Avg Loss: 0.4147
Epoch 54/250: 100%| | 570/570 [00:03<00:00, 151.22it/s]

[Feature Set: xydi_3] Epoch [54/250] - Avg Loss: 0.3786
Epoch 55/250: 100%| | 570/570 [00:03<00:00, 160.60it/s]

[Feature Set: xydi_3] Epoch [55/250] - Avg Loss: 0.3414
Epoch 56/250: 100%| | 570/570 [00:03<00:00, 157.45it/s]

[Feature Set: xydi_3] Epoch [56/250] - Avg Loss: 0.3345
Epoch 57/250: 100%| | 570/570 [00:03<00:00, 160.99it/s]

[Feature Set: xydi_3] Epoch [57/250] - Avg Loss: 0.2929
Epoch 58/250: 100%| | 570/570 [00:03<00:00, 160.53it/s]

[Feature Set: xydi_3] Epoch [58/250] - Avg Loss: 0.2940
Epoch 59/250: 100%| | 570/570 [00:03<00:00, 158.49it/s]

[Feature Set: xydi_3] Epoch [59/250] - Avg Loss: 0.3310
Epoch 60/250: 100%| | 570/570 [00:03<00:00, 160.85it/s]

[Feature Set: xydi_3] Epoch [60/250] - Avg Loss: 0.3111
Epoch 61/250: 100%| | 570/570 [00:03<00:00, 160.41it/s]

[Feature Set: xydi_3] Epoch [61/250] - Avg Loss: 0.2699
Epoch 62/250: 100%| | 570/570 [00:03<00:00, 158.76it/s]

[Feature Set: xydi_3] Epoch [62/250] - Avg Loss: 0.2593
Epoch 63/250: 100%| | 570/570 [00:03<00:00, 160.79it/s]

[Feature Set: xydi_3] Epoch [63/250] - Avg Loss: 0.3489
Epoch 64/250: 100%| | 570/570 [00:03<00:00, 160.94it/s]

[Feature Set: xydi_3] Epoch [64/250] - Avg Loss: 0.3743
Epoch 65/250: 100%| | 570/570 [00:03<00:00, 157.98it/s]

[Feature Set: xydi_3] Epoch [65/250] - Avg Loss: 0.2987
Epoch 66/250: 100%| | 570/570 [00:03<00:00, 161.08it/s]

[Feature Set: xydi_3] Epoch [66/250] - Avg Loss: 0.2655
Epoch 67/250: 100%| | 570/570 [00:03<00:00, 158.07it/s]

[Feature Set: xydi_3] Epoch [67/250] - Avg Loss: 0.2724
Epoch 68/250: 100%| | 570/570 [00:03<00:00, 158.43it/s]

[Feature Set: xydi_3] Epoch [68/250] - Avg Loss: 0.2857
Epoch 69/250: 100%| | 570/570 [00:03<00:00, 159.78it/s]

[Feature Set: xydi_3] Epoch [69/250] - Avg Loss: 0.2316
Epoch 70/250: 100%| | 570/570 [00:03<00:00, 155.65it/s]

[Feature Set: xydi_3] Epoch [70/250] - Avg Loss: 0.2770
Epoch 71/250: 100%| | 570/570 [00:03<00:00, 155.64it/s]

[Feature Set: xydi_3] Epoch [71/250] - Avg Loss: 0.3245
Epoch 72/250: 100%| | 570/570 [00:03<00:00, 160.69it/s]

[Feature Set: xydi_3] Epoch [72/250] - Avg Loss: 0.2982
Epoch 73/250: 100%| | 570/570 [00:03<00:00, 160.83it/s]

[Feature Set: xydi_3] Epoch [73/250] - Avg Loss: 0.3183
Epoch 74/250: 100%| | 570/570 [00:03<00:00, 156.97it/s]

[Feature Set: xydi_3] Epoch [74/250] - Avg Loss: 0.2922
Epoch 75/250: 100%| | 570/570 [00:03<00:00, 161.11it/s]

[Feature Set: xydi_3] Epoch [75/250] - Avg Loss: 0.3727
Epoch 76/250: 100%| | 570/570 [00:03<00:00, 160.41it/s]

[Feature Set: xydi_3] Epoch [76/250] - Avg Loss: 0.3275
Epoch 77/250: 100%| | 570/570 [00:03<00:00, 158.68it/s]

[Feature Set: xydi_3] Epoch [77/250] - Avg Loss: 0.2290
Epoch 78/250: 100%| | 570/570 [00:03<00:00, 160.97it/s]

[Feature Set: xydi_3] Epoch [78/250] - Avg Loss: 0.1847
Epoch 79/250: 100%| | 570/570 [00:03<00:00, 160.93it/s]

[Feature Set: xydi_3] Epoch [79/250] - Avg Loss: 0.2940
Epoch 80/250: 100%| | 570/570 [00:03<00:00, 158.61it/s]

[Feature Set: xydi_3] Epoch [80/250] - Avg Loss: 0.3082
Epoch 81/250: 100%| | 570/570 [00:03<00:00, 160.88it/s]

[Feature Set: xydi_3] Epoch [81/250] - Avg Loss: 0.2392
Epoch 82/250: 100%| | 570/570 [00:03<00:00, 158.47it/s]

[Feature Set: xydi_3] Epoch [82/250] - Avg Loss: 0.2240
Epoch 83/250: 100%| | 570/570 [00:03<00:00, 158.58it/s]

[Feature Set: xydi_3] Epoch [83/250] - Avg Loss: 0.2327
Epoch 84/250: 100%| | 570/570 [00:03<00:00, 160.62it/s]

[Feature Set: xydi_3] Epoch [84/250] - Avg Loss: 0.3854
Epoch 85/250: 100%| | 570/570 [00:03<00:00, 161.09it/s]

[Feature Set: xydi_3] Epoch [85/250] - Avg Loss: 0.3276
Epoch 86/250: 100%| | 570/570 [00:03<00:00, 152.65it/s]

[Feature Set: xydi_3] Epoch [86/250] - Avg Loss: 0.2752
Epoch 87/250: 100%| | 570/570 [00:03<00:00, 156.71it/s]

[Feature Set: xydi_3] Epoch [87/250] - Avg Loss: 0.2923
Epoch 88/250: 100%| | 570/570 [00:03<00:00, 158.95it/s]

[Feature Set: xydi_3] Epoch [88/250] - Avg Loss: 0.2102
Epoch 89/250: 100%| | 570/570 [00:03<00:00, 157.31it/s]

[Feature Set: xydi_3] Epoch [89/250] - Avg Loss: 0.1999
Epoch 90/250: 100%| | 570/570 [00:03<00:00, 153.35it/s]

[Feature Set: xydi_3] Epoch [90/250] - Avg Loss: 0.2720
Epoch 91/250: 100%| | 570/570 [00:03<00:00, 157.12it/s]

[Feature Set: xydi_3] Epoch [91/250] - Avg Loss: 0.2786
Epoch 92/250: 100%| | 570/570 [00:03<00:00, 158.46it/s]

[Feature Set: xydi_3] Epoch [92/250] - Avg Loss: 0.3247
Epoch 93/250: 100%| | 570/570 [00:03<00:00, 160.66it/s]

[Feature Set: xydi_3] Epoch [93/250] - Avg Loss: 0.3202
Epoch 94/250: 100%| | 570/570 [00:03<00:00, 160.31it/s]

[Feature Set: xydi_3] Epoch [94/250] - Avg Loss: 0.2466
Epoch 95/250: 100%| | 570/570 [00:03<00:00, 157.50it/s]

[Feature Set: xydi_3] Epoch [95/250] - Avg Loss: 0.3545
Epoch 96/250: 100%| | 570/570 [00:03<00:00, 156.47it/s]

[Feature Set: xydi_3] Epoch [96/250] - Avg Loss: 0.3250
Epoch 97/250: 100%| | 570/570 [00:03<00:00, 156.55it/s]

[Feature Set: xydi_3] Epoch [97/250] - Avg Loss: 0.2319
Epoch 98/250: 100%| | 570/570 [00:03<00:00, 158.30it/s]

[Feature Set: xydi_3] Epoch [98/250] - Avg Loss: 0.2240
Epoch 99/250: 100%| | 570/570 [00:03<00:00, 158.73it/s]

[Feature Set: xydi_3] Epoch [99/250] - Avg Loss: 0.2399
Epoch 100/250: 100%| | 570/570 [00:03<00:00, 160.96it/s]

[Feature Set: xydi_3] Epoch [100/250] - Avg Loss: 0.2368
Epoch 101/250: 100%| | 570/570 [00:03<00:00, 158.48it/s]

[Feature Set: xydi_3] Epoch [101/250] - Avg Loss: 0.1835
Epoch 102/250: 100%| | 570/570 [00:03<00:00, 160.35it/s]

[Feature Set: xydi_3] Epoch [102/250] - Avg Loss: 0.2733
Epoch 103/250: 100%| | 570/570 [00:03<00:00, 158.28it/s]

[Feature Set: xydi_3] Epoch [103/250] - Avg Loss: 0.2088
Epoch 104/250: 100%| | 570/570 [00:03<00:00, 152.34it/s]

[Feature Set: xydi_3] Epoch [104/250] - Avg Loss: 0.3655
Epoch 105/250: 100%| | 570/570 [00:03<00:00, 160.13it/s]

[Feature Set: xydi_3] Epoch [105/250] - Avg Loss: 0.2385
Epoch 106/250: 100%| | 570/570 [00:03<00:00, 159.26it/s]

[Feature Set: xydi_3] Epoch [106/250] - Avg Loss: 0.2397
Epoch 107/250: 100%| | 570/570 [00:03<00:00, 158.41it/s]

[Feature Set: xydi_3] Epoch [107/250] - Avg Loss: 0.2753
Epoch 108/250: 100%| | 570/570 [00:03<00:00, 160.83it/s]

[Feature Set: xydi_3] Epoch [108/250] - Avg Loss: 0.2693
Epoch 109/250: 100%| | 570/570 [00:03<00:00, 157.76it/s]

[Feature Set: xydi_3] Epoch [109/250] - Avg Loss: 0.2988
Epoch 110/250: 100%| | 570/570 [00:03<00:00, 145.64it/s]

[Feature Set: xydi_3] Epoch [110/250] - Avg Loss: 0.1692
Epoch 111/250: 100%| | 570/570 [00:03<00:00, 156.36it/s]

[Feature Set: xydi_3] Epoch [111/250] - Avg Loss: 0.2460
Epoch 112/250: 100%| | 570/570 [00:03<00:00, 157.83it/s]

[Feature Set: xydi_3] Epoch [112/250] - Avg Loss: 0.2478
Epoch 113/250: 100%| | 570/570 [00:03<00:00, 155.14it/s]

[Feature Set: xydi_3] Epoch [113/250] - Avg Loss: 0.3508
Epoch 114/250: 100%| | 570/570 [00:03<00:00, 158.79it/s]

[Feature Set: xydi_3] Epoch [114/250] - Avg Loss: 0.2150
Epoch 115/250: 100%| | 570/570 [00:03<00:00, 158.19it/s]

[Feature Set: xydi_3] Epoch [115/250] - Avg Loss: 0.2423
Epoch 116/250: 100%| | 570/570 [00:03<00:00, 157.76it/s]

[Feature Set: xydi_3] Epoch [116/250] - Avg Loss: 0.2313
Epoch 117/250: 100%| | 570/570 [00:03<00:00, 158.89it/s]

[Feature Set: xydi_3] Epoch [117/250] - Avg Loss: 0.2803
Epoch 118/250: 100%| | 570/570 [00:03<00:00, 160.44it/s]

[Feature Set: xydi_3] Epoch [118/250] - Avg Loss: 0.2258
Epoch 119/250: 100%| | 570/570 [00:03<00:00, 157.11it/s]

[Feature Set: xydi_3] Epoch [119/250] - Avg Loss: 0.2600
Epoch 120/250: 100%| | 570/570 [00:03<00:00, 156.52it/s]

[Feature Set: xydi_3] Epoch [120/250] - Avg Loss: 0.1734
Epoch 121/250: 100%| | 570/570 [00:03<00:00, 157.12it/s]

[Feature Set: xydi_3] Epoch [121/250] - Avg Loss: 0.2392
Epoch 122/250: 100%| | 570/570 [00:03<00:00, 157.58it/s]

[Feature Set: xydi_3] Epoch [122/250] - Avg Loss: 0.2572
Epoch 123/250: 100%| | 570/570 [00:03<00:00, 159.19it/s]

[Feature Set: xydi_3] Epoch [123/250] - Avg Loss: 0.3282
Epoch 124/250: 100%| | 570/570 [00:03<00:00, 158.98it/s]

[Feature Set: xydi_3] Epoch [124/250] - Avg Loss: 0.2416
Epoch 125/250: 100%| | 570/570 [00:03<00:00, 158.14it/s]

[Feature Set: xydi_3] Epoch [125/250] - Avg Loss: 0.1762
Epoch 126/250: 100%| | 570/570 [00:03<00:00, 160.00it/s]

[Feature Set: xydi_3] Epoch [126/250] - Avg Loss: 0.2359
Epoch 127/250: 100%| | 570/570 [00:03<00:00, 159.48it/s]

[Feature Set: xydi_3] Epoch [127/250] - Avg Loss: 0.2201
Epoch 128/250: 100%| | 570/570 [00:03<00:00, 157.06it/s]

[Feature Set: xydi_3] Epoch [128/250] - Avg Loss: 0.2247
Epoch 129/250: 100%| | 570/570 [00:03<00:00, 159.94it/s]

[Feature Set: xydi_3] Epoch [129/250] - Avg Loss: 0.1529
Epoch 130/250: 100%| | 570/570 [00:03<00:00, 160.08it/s]

[Feature Set: xydi_3] Epoch [130/250] - Avg Loss: 0.3338
Epoch 131/250: 100%| | 570/570 [00:03<00:00, 156.75it/s]

[Feature Set: xydi_3] Epoch [131/250] - Avg Loss: 0.3100
Epoch 132/250: 100%| | 570/570 [00:03<00:00, 159.66it/s]

[Feature Set: xydi_3] Epoch [132/250] - Avg Loss: 0.2495
Epoch 133/250: 100%| | 570/570 [00:03<00:00, 159.06it/s]

[Feature Set: xydi_3] Epoch [133/250] - Avg Loss: 0.2336
Epoch 134/250: 100%| | 570/570 [00:03<00:00, 157.80it/s]

[Feature Set: xydi_3] Epoch [134/250] - Avg Loss: 0.3230
Epoch 135/250: 100%| | 570/570 [00:03<00:00, 159.99it/s]

[Feature Set: xydi_3] Epoch [135/250] - Avg Loss: 0.2149
Epoch 136/250: 100%| | 570/570 [00:03<00:00, 158.22it/s]

[Feature Set: xydi_3] Epoch [136/250] - Avg Loss: 0.3433
Epoch 137/250: 100%| | 570/570 [00:03<00:00, 151.25it/s]

[Feature Set: xydi_3] Epoch [137/250] - Avg Loss: 0.2390
Epoch 138/250: 100%| | 570/570 [00:03<00:00, 154.00it/s]

[Feature Set: xydi_3] Epoch [138/250] - Avg Loss: 0.1524
Epoch 139/250: 100%| | 570/570 [00:03<00:00, 158.84it/s]

[Feature Set: xydi_3] Epoch [139/250] - Avg Loss: 0.1958
Epoch 140/250: 100%| | 570/570 [00:03<00:00, 154.84it/s]

[Feature Set: xydi_3] Epoch [140/250] - Avg Loss: 0.1895
Epoch 141/250: 100%| | 570/570 [00:03<00:00, 158.62it/s]

[Feature Set: xydi_3] Epoch [141/250] - Avg Loss: 0.2578
Epoch 142/250: 100%| | 570/570 [00:03<00:00, 158.45it/s]

[Feature Set: xydi_3] Epoch [142/250] - Avg Loss: 0.2060
Epoch 143/250: 100%| | 570/570 [00:03<00:00, 157.80it/s]

[Feature Set: xydi_3] Epoch [143/250] - Avg Loss: 0.2203
Epoch 144/250: 100%| | 570/570 [00:03<00:00, 160.10it/s]

[Feature Set: xydi_3] Epoch [144/250] - Avg Loss: 0.2547
Epoch 145/250: 100%| | 570/570 [00:03<00:00, 159.89it/s]

[Feature Set: xydi_3] Epoch [145/250] - Avg Loss: 0.2016
Epoch 146/250: 100%| | 570/570 [00:03<00:00, 157.81it/s]

[Feature Set: xydi_3] Epoch [146/250] - Avg Loss: 0.1701
Epoch 147/250: 100%| | 570/570 [00:03<00:00, 157.65it/s]

[Feature Set: xydi_3] Epoch [147/250] - Avg Loss: 0.2152
Epoch 148/250: 100%| | 570/570 [00:04<00:00, 139.11it/s]

[Feature Set: xydi_3] Epoch [148/250] - Avg Loss: 0.2561
Epoch 149/250: 100%| | 570/570 [00:03<00:00, 150.53it/s]

[Feature Set: xydi_3] Epoch [149/250] - Avg Loss: 0.3279
Epoch 150/250: 100%| | 570/570 [00:03<00:00, 149.51it/s]

[Feature Set: xydi_3] Epoch [150/250] - Avg Loss: 0.2361
Epoch 151/250: 100%| | 570/570 [00:03<00:00, 156.07it/s]

[Feature Set: xydi_3] Epoch [151/250] - Avg Loss: 0.3521
Epoch 152/250: 100%| | 570/570 [00:03<00:00, 155.91it/s]

[Feature Set: xydi_3] Epoch [152/250] - Avg Loss: 0.1911
Epoch 153/250: 100%| | 570/570 [00:03<00:00, 149.54it/s]

[Feature Set: xydi_3] Epoch [153/250] - Avg Loss: 0.1863
Epoch 154/250: 100%| | 570/570 [00:03<00:00, 152.85it/s]

[Feature Set: xydi_3] Epoch [154/250] - Avg Loss: 0.2126
Epoch 155/250: 100%| | 570/570 [00:03<00:00, 156.30it/s]

[Feature Set: xydi_3] Epoch [155/250] - Avg Loss: 0.2333
Epoch 156/250: 100%| | 570/570 [00:03<00:00, 154.65it/s]

[Feature Set: xydi_3] Epoch [156/250] - Avg Loss: 0.2441
Epoch 157/250: 100%| | 570/570 [00:03<00:00, 156.16it/s]

[Feature Set: xydi_3] Epoch [157/250] - Avg Loss: 0.2319
Epoch 158/250: 100%| | 570/570 [00:03<00:00, 156.16it/s]

[Feature Set: xydi_3] Epoch [158/250] - Avg Loss: 0.3072
Epoch 159/250: 100%| | 570/570 [00:03<00:00, 154.05it/s]

[Feature Set: xydi_3] Epoch [159/250] - Avg Loss: 0.3226
Epoch 160/250: 100%| | 570/570 [00:03<00:00, 155.93it/s]

[Feature Set: xydi_3] Epoch [160/250] - Avg Loss: 0.3963
Epoch 161/250: 100%| | 570/570 [00:03<00:00, 156.46it/s]

[Feature Set: xydi_3] Epoch [161/250] - Avg Loss: 0.2647
Epoch 162/250: 100%| | 570/570 [00:03<00:00, 153.99it/s]

[Feature Set: xydi_3] Epoch [162/250] - Avg Loss: 0.2613
Epoch 163/250: 100%| | 570/570 [00:03<00:00, 156.67it/s]

[Feature Set: xydi_3] Epoch [163/250] - Avg Loss: 0.2045
Epoch 164/250: 100%| | 570/570 [00:03<00:00, 155.99it/s]

[Feature Set: xydi_3] Epoch [164/250] - Avg Loss: 0.3407
Epoch 165/250: 100%| | 570/570 [00:03<00:00, 153.86it/s]

[Feature Set: xydi_3] Epoch [165/250] - Avg Loss: 0.3301
Epoch 166/250: 100%| | 570/570 [00:03<00:00, 156.97it/s]

[Feature Set: xydi_3] Epoch [166/250] - Avg Loss: 0.2210
Epoch 167/250: 100%| | 570/570 [00:03<00:00, 156.06it/s]

[Feature Set: xydi_3] Epoch [167/250] - Avg Loss: 0.1395
Epoch 168/250: 100%| | 570/570 [00:03<00:00, 154.39it/s]

[Feature Set: xydi_3] Epoch [168/250] - Avg Loss: 0.1528
Epoch 169/250: 100%| | 570/570 [00:03<00:00, 155.29it/s]

[Feature Set: xydi_3] Epoch [169/250] - Avg Loss: 0.4134
Epoch 170/250: 100%| | 570/570 [00:03<00:00, 152.54it/s]

[Feature Set: xydi_3] Epoch [170/250] - Avg Loss: 0.2961
Epoch 171/250: 100%| | 570/570 [00:03<00:00, 154.02it/s]

[Feature Set: xydi_3] Epoch [171/250] - Avg Loss: 0.1874
Epoch 172/250: 100%| | 570/570 [00:03<00:00, 156.38it/s]

[Feature Set: xydi_3] Epoch [172/250] - Avg Loss: 0.3283
Epoch 173/250: 100%| | 570/570 [00:03<00:00, 156.09it/s]

[Feature Set: xydi_3] Epoch [173/250] - Avg Loss: 0.2644
Epoch 174/250: 100%| | 570/570 [00:03<00:00, 154.64it/s]

[Feature Set: xydi_3] Epoch [174/250] - Avg Loss: 0.2098
Epoch 175/250: 100%| | 570/570 [00:03<00:00, 156.29it/s]

[Feature Set: xydi_3] Epoch [175/250] - Avg Loss: 0.1814
Epoch 176/250: 100%| | 570/570 [00:03<00:00, 156.30it/s]

[Feature Set: xydi_3] Epoch [176/250] - Avg Loss: 0.2649
Epoch 177/250: 100%| | 570/570 [00:03<00:00, 154.84it/s]

[Feature Set: xydi_3] Epoch [177/250] - Avg Loss: 0.2681
Epoch 178/250: 100%| | 570/570 [00:03<00:00, 157.08it/s]

[Feature Set: xydi_3] Epoch [178/250] - Avg Loss: 0.2693
Epoch 179/250: 100%| | 570/570 [00:03<00:00, 156.45it/s]

[Feature Set: xydi_3] Epoch [179/250] - Avg Loss: 0.1855
Epoch 180/250: 100%| | 570/570 [00:03<00:00, 155.13it/s]

[Feature Set: xydi_3] Epoch [180/250] - Avg Loss: 0.3171
Epoch 181/250: 100%| | 570/570 [00:03<00:00, 154.78it/s]

[Feature Set: xydi_3] Epoch [181/250] - Avg Loss: 0.2898
Epoch 182/250: 100%| | 570/570 [00:03<00:00, 156.33it/s]

[Feature Set: xydi_3] Epoch [182/250] - Avg Loss: 0.3128
Epoch 183/250: 100%| | 570/570 [00:03<00:00, 154.70it/s]

[Feature Set: xydi_3] Epoch [183/250] - Avg Loss: 0.3796
Epoch 184/250: 100%| | 570/570 [00:03<00:00, 156.91it/s]

[Feature Set: xydi_3] Epoch [184/250] - Avg Loss: 0.1922
Epoch 185/250: 100%| | 570/570 [00:03<00:00, 156.22it/s]

[Feature Set: xydi_3] Epoch [185/250] - Avg Loss: 0.2093
Epoch 186/250: 100%| | 570/570 [00:03<00:00, 151.12it/s]

[Feature Set: xydi_3] Epoch [186/250] - Avg Loss: 0.2306
Epoch 187/250: 100%| | 570/570 [00:03<00:00, 155.49it/s]

[Feature Set: xydi_3] Epoch [187/250] - Avg Loss: 0.1944
Epoch 188/250: 100%| | 570/570 [00:03<00:00, 156.23it/s]

[Feature Set: xydi_3] Epoch [188/250] - Avg Loss: 0.2421
Epoch 189/250: 100%| | 570/570 [00:03<00:00, 154.38it/s]

[Feature Set: xydi_3] Epoch [189/250] - Avg Loss: 0.2234
Epoch 190/250: 100%| | 570/570 [00:03<00:00, 156.52it/s]

[Feature Set: xydi_3] Epoch [190/250] - Avg Loss: 0.2073
Epoch 191/250: 100%| | 570/570 [00:03<00:00, 150.20it/s]

[Feature Set: xydi_3] Epoch [191/250] - Avg Loss: 0.2032
Epoch 192/250: 100%| | 570/570 [00:03<00:00, 154.39it/s]

[Feature Set: xydi_3] Epoch [192/250] - Avg Loss: 0.1777
Epoch 193/250: 100%| | 570/570 [00:03<00:00, 156.32it/s]

[Feature Set: xydi_3] Epoch [193/250] - Avg Loss: 0.2519
Epoch 194/250: 100%| | 570/570 [00:03<00:00, 156.19it/s]

[Feature Set: xydi_3] Epoch [194/250] - Avg Loss: 0.2980
Epoch 195/250: 100%| | 570/570 [00:03<00:00, 154.72it/s]

[Feature Set: xydi_3] Epoch [195/250] - Avg Loss: 0.1901
Epoch 196/250: 100%| | 570/570 [00:03<00:00, 156.04it/s]

[Feature Set: xydi_3] Epoch [196/250] - Avg Loss: 0.3377
Epoch 197/250: 100%| | 570/570 [00:03<00:00, 154.85it/s]

[Feature Set: xydi_3] Epoch [197/250] - Avg Loss: 0.1904
Epoch 198/250: 100%| | 570/570 [00:03<00:00, 152.04it/s]

[Feature Set: xydi_3] Epoch [198/250] - Avg Loss: 0.2465
Epoch 199/250: 100%| | 570/570 [00:03<00:00, 155.56it/s]

[Feature Set: xydi_3] Epoch [199/250] - Avg Loss: 0.2930
Epoch 200/250: 100%| | 570/570 [00:03<00:00, 157.00it/s]

[Feature Set: xydi_3] Epoch [200/250] - Avg Loss: 0.5636
Epoch 201/250: 100%| | 570/570 [00:03<00:00, 154.41it/s]

[Feature Set: xydi_3] Epoch [201/250] - Avg Loss: 0.2507
Epoch 202/250: 100%| | 570/570 [00:03<00:00, 152.94it/s]

[Feature Set: xydi_3] Epoch [202/250] - Avg Loss: 0.2188
Epoch 203/250: 100%| | 570/570 [00:03<00:00, 154.26it/s]

[Feature Set: xydi_3] Epoch [203/250] - Avg Loss: 0.2169
Epoch 204/250: 100%| | 570/570 [00:03<00:00, 154.23it/s]

[Feature Set: xydi_3] Epoch [204/250] - Avg Loss: 0.1889
Epoch 205/250: 100%| | 570/570 [00:03<00:00, 156.51it/s]

[Feature Set: xydi_3] Epoch [205/250] - Avg Loss: 0.2444
Epoch 206/250: 100%| | 570/570 [00:03<00:00, 154.79it/s]

[Feature Set: xydi_3] Epoch [206/250] - Avg Loss: 0.2706
Epoch 207/250: 100%| | 570/570 [00:03<00:00, 156.24it/s]

[Feature Set: xydi_3] Epoch [207/250] - Avg Loss: 0.3041
Epoch 208/250: 100%| | 570/570 [00:03<00:00, 156.68it/s]

[Feature Set: xydi_3] Epoch [208/250] - Avg Loss: 0.2734
Epoch 209/250: 100%| | 570/570 [00:03<00:00, 154.61it/s]

[Feature Set: xydi_3] Epoch [209/250] - Avg Loss: 0.2434
Epoch 210/250: 100%| | 570/570 [00:03<00:00, 156.59it/s]

[Feature Set: xydi_3] Epoch [210/250] - Avg Loss: 0.2700
Epoch 211/250: 100%| | 570/570 [00:03<00:00, 155.75it/s]

[Feature Set: xydi_3] Epoch [211/250] - Avg Loss: 0.1922
Epoch 212/250: 100%| | 570/570 [00:03<00:00, 154.95it/s]

[Feature Set: xydi_3] Epoch [212/250] - Avg Loss: 0.1810
Epoch 213/250: 100%| | 570/570 [00:03<00:00, 150.39it/s]

[Feature Set: xydi_3] Epoch [213/250] - Avg Loss: 0.1576
Epoch 214/250: 100%| | 570/570 [00:03<00:00, 156.33it/s]

[Feature Set: xydi_3] Epoch [214/250] - Avg Loss: 0.2385
Epoch 215/250: 100%| | 570/570 [00:03<00:00, 153.64it/s]

[Feature Set: xydi_3] Epoch [215/250] - Avg Loss: 0.2034
Epoch 216/250: 100%| | 570/570 [00:03<00:00, 156.78it/s]

[Feature Set: xydi_3] Epoch [216/250] - Avg Loss: 0.3202
Epoch 217/250: 100%| | 570/570 [00:03<00:00, 156.44it/s]

[Feature Set: xydi_3] Epoch [217/250] - Avg Loss: 0.1757
Epoch 218/250: 100%| | 570/570 [00:03<00:00, 152.35it/s]

[Feature Set: xydi_3] Epoch [218/250] - Avg Loss: 0.3088
Epoch 219/250: 100%| | 570/570 [00:03<00:00, 152.22it/s]

[Feature Set: xydi_3] Epoch [219/250] - Avg Loss: 0.2640
Epoch 220/250: 100%| | 570/570 [00:03<00:00, 156.39it/s]

[Feature Set: xydi_3] Epoch [220/250] - Avg Loss: 0.2662
Epoch 221/250: 100%| | 570/570 [00:03<00:00, 154.57it/s]

[Feature Set: xydi_3] Epoch [221/250] - Avg Loss: 0.1810
Epoch 222/250: 100%| | 570/570 [00:03<00:00, 156.64it/s]

[Feature Set: xydi_3] Epoch [222/250] - Avg Loss: 0.3586
Epoch 223/250: 100%| | 570/570 [00:03<00:00, 155.81it/s]

[Feature Set: xydi_3] Epoch [223/250] - Avg Loss: 0.1538
Epoch 224/250: 100%| | 570/570 [00:03<00:00, 154.96it/s]

[Feature Set: xydi_3] Epoch [224/250] - Avg Loss: 0.2075
Epoch 225/250: 100%| | 570/570 [00:03<00:00, 156.31it/s]

[Feature Set: xydi_3] Epoch [225/250] - Avg Loss: 0.2307
Epoch 226/250: 100%| | 570/570 [00:03<00:00, 155.90it/s]

[Feature Set: xydi_3] Epoch [226/250] - Avg Loss: 0.2094
Epoch 227/250: 100%| | 570/570 [00:03<00:00, 148.15it/s]

[Feature Set: xydi_3] Epoch [227/250] - Avg Loss: 0.3989
Epoch 228/250: 100%| | 570/570 [00:03<00:00, 153.81it/s]

[Feature Set: xydi_3] Epoch [228/250] - Avg Loss: 0.4139
Epoch 229/250: 100%| | 570/570 [00:03<00:00, 156.04it/s]

[Feature Set: xydi_3] Epoch [229/250] - Avg Loss: 0.2835
Epoch 230/250: 100%| | 570/570 [00:03<00:00, 153.35it/s]

[Feature Set: xydi_3] Epoch [230/250] - Avg Loss: 0.2397
Epoch 231/250: 100%| | 570/570 [00:03<00:00, 155.12it/s]

[Feature Set: xydi_3] Epoch [231/250] - Avg Loss: 0.1688
Epoch 232/250: 100%| | 570/570 [00:03<00:00, 152.56it/s]

[Feature Set: xydi_3] Epoch [232/250] - Avg Loss: 0.6576
Epoch 233/250: 100%| | 570/570 [00:03<00:00, 153.52it/s]

[Feature Set: xydi_3] Epoch [233/250] - Avg Loss: 0.2962
Epoch 234/250: 100%| | 570/570 [00:03<00:00, 155.65it/s]

[Feature Set: xydi_3] Epoch [234/250] - Avg Loss: 0.1870
Epoch 235/250: 100%| | 570/570 [00:03<00:00, 152.07it/s]

[Feature Set: xydi_3] Epoch [235/250] - Avg Loss: 0.1857
Epoch 236/250: 100%| | 570/570 [00:03<00:00, 154.18it/s]

[Feature Set: xydi_3] Epoch [236/250] - Avg Loss: 0.1722
Epoch 237/250: 100%| | 570/570 [00:03<00:00, 154.23it/s]

[Feature Set: xydi_3] Epoch [237/250] - Avg Loss: 0.1617
Epoch 238/250: 100%| | 570/570 [00:03<00:00, 153.07it/s]

[Feature Set: xydi_3] Epoch [238/250] - Avg Loss: 0.2306
Epoch 239/250: 100%| | 570/570 [00:03<00:00, 150.72it/s]

[Feature Set: xydi_3] Epoch [239/250] - Avg Loss: 0.2341
Epoch 240/250: 100%| | 570/570 [00:03<00:00, 155.29it/s]

[Feature Set: xydi_3] Epoch [240/250] - Avg Loss: 0.2309
Epoch 241/250: 100%| | 570/570 [00:03<00:00, 156.12it/s]

[Feature Set: xydi_3] Epoch [241/250] - Avg Loss: 0.2442
Epoch 242/250: 100%| | 570/570 [00:03<00:00, 152.99it/s]

[Feature Set: xydi_3] Epoch [242/250] - Avg Loss: 0.1407
Epoch 243/250: 100%| | 570/570 [00:03<00:00, 155.12it/s]

[Feature Set: xydi_3] Epoch [243/250] - Avg Loss: 0.2053
Epoch 244/250: 100%| | 570/570 [00:03<00:00, 156.19it/s]

[Feature Set: xydi_3] Epoch [244/250] - Avg Loss: 0.2035
Epoch 245/250: 100%| | 570/570 [00:03<00:00, 154.16it/s]

[Feature Set: xydi_3] Epoch [245/250] - Avg Loss: 0.3462
Epoch 246/250: 100%| | 570/570 [00:03<00:00, 154.81it/s]

[Feature Set: xydi_3] Epoch [246/250] - Avg Loss: 0.2806
Epoch 247/250: 100%| | 570/570 [00:03<00:00, 156.08it/s]

[Feature Set: xydi_3] Epoch [247/250] - Avg Loss: 0.1848
Epoch 248/250: 100%| | 570/570 [00:03<00:00, 154.00it/s]

[Feature Set: xydi_3] Epoch [248/250] - Avg Loss: 0.1699
Epoch 249/250: 100%| | 570/570 [00:03<00:00, 156.48it/s]

[Feature Set: xydi_3] Epoch [249/250] - Avg Loss: 0.2845
Epoch 250/250: 100%| | 570/570 [00:03<00:00, 155.64it/s]

[Feature Set: xydi_3] Epoch [250/250] - Avg Loss: 0.2136
Epoch 250/250: 100%| | 570/570 [00:01<00:00, 340.05it/s]

```
[10]: df_results = pd.DataFrame(results)
      print(df_results)
```

	Feature_Set	Accuracy	Macro_F1	Weighted_F1
0	xydi_3	0.94386	0.938926	0.942885