

test_xydi3_0.001_250

April 17, 2025

```
[7]: 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]
```

```

model = SocialLSTMClassifier(input_size=input_size)
criterion = nn.CrossEntropyLoss()
optimizer = optim.Adam(model.parameters(), lr=0.001)
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]
        traj = sample['trajectory'][:, index_map] # [T, 1, D]
        neighbors = [frame[:, index_map] for frame in sample['neighbors']]
        ↪ # list[T][N_i, D]

        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]
#         traj = sample['trajectory'][:, index_map] # [T, 1, D]
#         neighbors = [frame[:, index_map] for frame in
        ↪ sample['neighbors']] # list[T][N_i, D]
#         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)

model.eval()
y_true = []
y_pred = []
with torch.no_grad():
    for sample in tqdm(test_data, desc=f"[Eval] {name}"):
        traj = sample['trajectory'][:, index_map]
        neighbors = [frame[:, index_map] for frame in sample['neighbors']]
        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,
    "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_2483/3570158580.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_2483/3570158580.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")
Epoch 1/250: 100%|          | 570/570 [00:03<00:00, 168.78it/s]
```

[Feature Set: xydi_3] Epoch [1/250] - Avg Loss: 0.6738

```
Epoch 2/250: 100%|          | 570/570 [00:03<00:00, 182.48it/s]
```

[Feature Set: xydi_3] Epoch [2/250] - Avg Loss: 0.6634

```
Epoch 3/250: 100%|          | 570/570 [00:03<00:00, 182.43it/s]
```

[Feature Set: xydi_3] Epoch [3/250] - Avg Loss: 0.6575

```
Epoch 4/250: 100%|          | 570/570 [00:03<00:00, 181.77it/s]
```

[Feature Set: xydi_3] Epoch [4/250] - Avg Loss: 0.6496

```
Epoch 5/250: 100%|          | 570/570 [00:03<00:00, 183.68it/s]
```

[Feature Set: xydi_3] Epoch [5/250] - Avg Loss: 0.6380

```
Epoch 6/250: 100%|          | 570/570 [00:03<00:00, 182.21it/s]
```

[Feature Set: xydi_3] Epoch [6/250] - Avg Loss: 0.6249

```
Epoch 7/250: 100%|          | 570/570 [00:03<00:00, 183.31it/s]
```

[Feature Set: xydi_3] Epoch [7/250] - Avg Loss: 0.6121

```
Epoch 8/250: 100%|          | 570/570 [00:03<00:00, 181.98it/s]
```

[Feature Set: xydi_3] Epoch [8/250] - Avg Loss: 0.5789

```
Epoch 9/250: 100%|          | 570/570 [00:03<00:00, 183.63it/s]
```

[Feature Set: xydi_3] Epoch [9/250] - Avg Loss: 0.5584

```
Epoch 10/250: 100%|         | 570/570 [00:03<00:00, 182.37it/s]
```

[Feature Set: xydi_3] Epoch [10/250] - Avg Loss: 0.5364
Epoch 11/250: 100%| | 570/570 [00:03<00:00, 183.62it/s]

[Feature Set: xydi_3] Epoch [11/250] - Avg Loss: 0.5342
Epoch 12/250: 100%| | 570/570 [00:03<00:00, 181.49it/s]

[Feature Set: xydi_3] Epoch [12/250] - Avg Loss: 0.5081
Epoch 13/250: 100%| | 570/570 [00:03<00:00, 183.58it/s]

[Feature Set: xydi_3] Epoch [13/250] - Avg Loss: 0.4782
Epoch 14/250: 100%| | 570/570 [00:03<00:00, 182.55it/s]

[Feature Set: xydi_3] Epoch [14/250] - Avg Loss: 0.4764
Epoch 15/250: 100%| | 570/570 [00:03<00:00, 183.76it/s]

[Feature Set: xydi_3] Epoch [15/250] - Avg Loss: 0.4463
Epoch 16/250: 100%| | 570/570 [00:03<00:00, 182.55it/s]

[Feature Set: xydi_3] Epoch [16/250] - Avg Loss: 0.4173
Epoch 17/250: 100%| | 570/570 [00:03<00:00, 183.40it/s]

[Feature Set: xydi_3] Epoch [17/250] - Avg Loss: 0.4016
Epoch 18/250: 100%| | 570/570 [00:03<00:00, 182.76it/s]

[Feature Set: xydi_3] Epoch [18/250] - Avg Loss: 0.3732
Epoch 19/250: 100%| | 570/570 [00:03<00:00, 183.64it/s]

[Feature Set: xydi_3] Epoch [19/250] - Avg Loss: 0.3494
Epoch 20/250: 100%| | 570/570 [00:03<00:00, 182.63it/s]

[Feature Set: xydi_3] Epoch [20/250] - Avg Loss: 0.3412
Epoch 21/250: 100%| | 570/570 [00:03<00:00, 183.58it/s]

[Feature Set: xydi_3] Epoch [21/250] - Avg Loss: 0.3288
Epoch 22/250: 100%| | 570/570 [00:03<00:00, 180.73it/s]

[Feature Set: xydi_3] Epoch [22/250] - Avg Loss: 0.3425
Epoch 23/250: 100%| | 570/570 [00:03<00:00, 183.79it/s]

[Feature Set: xydi_3] Epoch [23/250] - Avg Loss: 0.3026
Epoch 24/250: 100%| | 570/570 [00:03<00:00, 182.32it/s]

[Feature Set: xydi_3] Epoch [24/250] - Avg Loss: 0.2867
Epoch 25/250: 100%| | 570/570 [00:03<00:00, 177.63it/s]

[Feature Set: xydi_3] Epoch [25/250] - Avg Loss: 0.2723
Epoch 26/250: 100%| | 570/570 [00:03<00:00, 177.68it/s]

[Feature Set: xydi_3] Epoch [26/250] - Avg Loss: 0.2675
Epoch 27/250: 100%| | 570/570 [00:03<00:00, 181.43it/s]

[Feature Set: xydi_3] Epoch [27/250] - Avg Loss: 0.2801
Epoch 28/250: 100%| | 570/570 [00:03<00:00, 183.22it/s]

[Feature Set: xydi_3] Epoch [28/250] - Avg Loss: 0.2681
Epoch 29/250: 100%| | 570/570 [00:03<00:00, 181.70it/s]

[Feature Set: xydi_3] Epoch [29/250] - Avg Loss: 0.2343
Epoch 30/250: 100%| | 570/570 [00:03<00:00, 176.82it/s]

[Feature Set: xydi_3] Epoch [30/250] - Avg Loss: 0.2123
Epoch 31/250: 100%| | 570/570 [00:03<00:00, 178.94it/s]

[Feature Set: xydi_3] Epoch [31/250] - Avg Loss: 0.2187
Epoch 32/250: 100%| | 570/570 [00:03<00:00, 181.04it/s]

[Feature Set: xydi_3] Epoch [32/250] - Avg Loss: 0.2153
Epoch 33/250: 100%| | 570/570 [00:03<00:00, 182.17it/s]

[Feature Set: xydi_3] Epoch [33/250] - Avg Loss: 0.1986
Epoch 34/250: 100%| | 570/570 [00:03<00:00, 182.01it/s]

[Feature Set: xydi_3] Epoch [34/250] - Avg Loss: 0.2020
Epoch 35/250: 100%| | 570/570 [00:03<00:00, 179.95it/s]

[Feature Set: xydi_3] Epoch [35/250] - Avg Loss: 0.2289
Epoch 36/250: 100%| | 570/570 [00:03<00:00, 182.27it/s]

[Feature Set: xydi_3] Epoch [36/250] - Avg Loss: 0.1789
Epoch 37/250: 100%| | 570/570 [00:03<00:00, 181.42it/s]

[Feature Set: xydi_3] Epoch [37/250] - Avg Loss: 0.1788
Epoch 38/250: 100%| | 570/570 [00:03<00:00, 182.24it/s]

[Feature Set: xydi_3] Epoch [38/250] - Avg Loss: 0.1646
Epoch 39/250: 100%| | 570/570 [00:03<00:00, 182.11it/s]

[Feature Set: xydi_3] Epoch [39/250] - Avg Loss: 0.1747
Epoch 40/250: 100%| | 570/570 [00:03<00:00, 183.28it/s]

[Feature Set: xydi_3] Epoch [40/250] - Avg Loss: 0.1560
Epoch 41/250: 100%| | 570/570 [00:03<00:00, 181.58it/s]

[Feature Set: xydi_3] Epoch [41/250] - Avg Loss: 0.1728
Epoch 42/250: 100%| | 570/570 [00:03<00:00, 183.95it/s]

[Feature Set: xydi_3] Epoch [42/250] - Avg Loss: 0.1731
Epoch 43/250: 100%| | 570/570 [00:03<00:00, 182.27it/s]

[Feature Set: xydi_3] Epoch [43/250] - Avg Loss: 0.1461
Epoch 44/250: 100%| | 570/570 [00:03<00:00, 180.79it/s]

[Feature Set: xydi_3] Epoch [44/250] - Avg Loss: 0.1679
Epoch 45/250: 100%| | 570/570 [00:03<00:00, 180.99it/s]

[Feature Set: xydi_3] Epoch [45/250] - Avg Loss: 0.1348
Epoch 46/250: 100%| | 570/570 [00:03<00:00, 182.97it/s]

[Feature Set: xydi_3] Epoch [46/250] - Avg Loss: 0.1064
Epoch 47/250: 100%| | 570/570 [00:03<00:00, 182.24it/s]

[Feature Set: xydi_3] Epoch [47/250] - Avg Loss: 0.0997
Epoch 48/250: 100%| | 570/570 [00:03<00:00, 183.47it/s]

[Feature Set: xydi_3] Epoch [48/250] - Avg Loss: 0.1335
Epoch 49/250: 100%| | 570/570 [00:03<00:00, 181.76it/s]

[Feature Set: xydi_3] Epoch [49/250] - Avg Loss: 0.1113
Epoch 50/250: 100%| | 570/570 [00:03<00:00, 183.10it/s]

[Feature Set: xydi_3] Epoch [50/250] - Avg Loss: 0.1478
Epoch 51/250: 100%| | 570/570 [00:03<00:00, 178.93it/s]

[Feature Set: xydi_3] Epoch [51/250] - Avg Loss: 0.0741
Epoch 52/250: 100%| | 570/570 [00:03<00:00, 180.27it/s]

[Feature Set: xydi_3] Epoch [52/250] - Avg Loss: 0.1516
Epoch 53/250: 100%| | 570/570 [00:03<00:00, 175.07it/s]

[Feature Set: xydi_3] Epoch [53/250] - Avg Loss: 0.1047
Epoch 54/250: 100%| | 570/570 [00:03<00:00, 173.13it/s]

[Feature Set: xydi_3] Epoch [54/250] - Avg Loss: 0.0674
Epoch 55/250: 100%| | 570/570 [00:03<00:00, 177.59it/s]

[Feature Set: xydi_3] Epoch [55/250] - Avg Loss: 0.0887
Epoch 56/250: 100%| | 570/570 [00:03<00:00, 182.31it/s]

[Feature Set: xydi_3] Epoch [56/250] - Avg Loss: 0.1348
Epoch 57/250: 100%| | 570/570 [00:03<00:00, 182.20it/s]

[Feature Set: xydi_3] Epoch [57/250] - Avg Loss: 0.1659
Epoch 58/250: 100%| | 570/570 [00:03<00:00, 183.26it/s]

[Feature Set: xydi_3] Epoch [58/250] - Avg Loss: 0.1047
Epoch 59/250: 100%| | 570/570 [00:03<00:00, 181.26it/s]

[Feature Set: xydi_3] Epoch [59/250] - Avg Loss: 0.0749
Epoch 60/250: 100%| | 570/570 [00:03<00:00, 182.49it/s]

[Feature Set: xydi_3] Epoch [60/250] - Avg Loss: 0.0499
Epoch 61/250: 100%| | 570/570 [00:03<00:00, 181.71it/s]

[Feature Set: xydi_3] Epoch [61/250] - Avg Loss: 0.0599
Epoch 62/250: 100%| | 570/570 [00:03<00:00, 182.75it/s]

[Feature Set: xydi_3] Epoch [62/250] - Avg Loss: 0.0929
Epoch 63/250: 100%| | 570/570 [00:03<00:00, 181.16it/s]

[Feature Set: xydi_3] Epoch [63/250] - Avg Loss: 0.0775
Epoch 64/250: 100%| | 570/570 [00:03<00:00, 183.01it/s]

[Feature Set: xydi_3] Epoch [64/250] - Avg Loss: 0.0833
Epoch 65/250: 100%| | 570/570 [00:03<00:00, 181.50it/s]

[Feature Set: xydi_3] Epoch [65/250] - Avg Loss: 0.0553
Epoch 66/250: 100%| | 570/570 [00:03<00:00, 183.06it/s]

[Feature Set: xydi_3] Epoch [66/250] - Avg Loss: 0.0783
Epoch 67/250: 100%| | 570/570 [00:03<00:00, 175.63it/s]

[Feature Set: xydi_3] Epoch [67/250] - Avg Loss: 0.1259
Epoch 68/250: 100%| | 570/570 [00:03<00:00, 174.63it/s]

[Feature Set: xydi_3] Epoch [68/250] - Avg Loss: 0.0846
Epoch 69/250: 100%| | 570/570 [00:03<00:00, 182.50it/s]

[Feature Set: xydi_3] Epoch [69/250] - Avg Loss: 0.0728
Epoch 70/250: 100%| | 570/570 [00:03<00:00, 182.25it/s]

[Feature Set: xydi_3] Epoch [70/250] - Avg Loss: 0.0406
Epoch 71/250: 100%| | 570/570 [00:03<00:00, 182.86it/s]

[Feature Set: xydi_3] Epoch [71/250] - Avg Loss: 0.0457
Epoch 72/250: 100%| | 570/570 [00:03<00:00, 181.30it/s]

[Feature Set: xydi_3] Epoch [72/250] - Avg Loss: 0.1263
Epoch 73/250: 100%| | 570/570 [00:03<00:00, 183.54it/s]

[Feature Set: xydi_3] Epoch [73/250] - Avg Loss: 0.0786
Epoch 74/250: 100%| | 570/570 [00:03<00:00, 181.96it/s]

[Feature Set: xydi_3] Epoch [74/250] - Avg Loss: 0.0843
Epoch 75/250: 100%| | 570/570 [00:03<00:00, 183.61it/s]

[Feature Set: xydi_3] Epoch [75/250] - Avg Loss: 0.0717
Epoch 76/250: 100%| | 570/570 [00:03<00:00, 178.31it/s]

[Feature Set: xydi_3] Epoch [76/250] - Avg Loss: 0.0795
Epoch 77/250: 100%| | 570/570 [00:03<00:00, 184.08it/s]

[Feature Set: xydi_3] Epoch [77/250] - Avg Loss: 0.0370
Epoch 78/250: 100%| | 570/570 [00:03<00:00, 182.43it/s]

[Feature Set: xydi_3] Epoch [78/250] - Avg Loss: 0.0267
Epoch 79/250: 100%| | 570/570 [00:03<00:00, 183.39it/s]

[Feature Set: xydi_3] Epoch [79/250] - Avg Loss: 0.0608
Epoch 80/250: 100%| | 570/570 [00:03<00:00, 182.09it/s]

[Feature Set: xydi_3] Epoch [80/250] - Avg Loss: 0.0894
Epoch 81/250: 100%| | 570/570 [00:03<00:00, 182.29it/s]

[Feature Set: xydi_3] Epoch [81/250] - Avg Loss: 0.0288
Epoch 82/250: 100%| | 570/570 [00:03<00:00, 181.91it/s]

[Feature Set: xydi_3] Epoch [82/250] - Avg Loss: 0.0666
Epoch 83/250: 100%| | 570/570 [00:03<00:00, 183.01it/s]

[Feature Set: xydi_3] Epoch [83/250] - Avg Loss: 0.0619
Epoch 84/250: 100%| | 570/570 [00:03<00:00, 167.00it/s]

[Feature Set: xydi_3] Epoch [84/250] - Avg Loss: 0.0468
Epoch 85/250: 100%| | 570/570 [00:03<00:00, 174.25it/s]

[Feature Set: xydi_3] Epoch [85/250] - Avg Loss: 0.1036
Epoch 86/250: 100%| | 570/570 [00:03<00:00, 181.31it/s]

[Feature Set: xydi_3] Epoch [86/250] - Avg Loss: 0.0528
Epoch 87/250: 100%| | 570/570 [00:03<00:00, 180.00it/s]

[Feature Set: xydi_3] Epoch [87/250] - Avg Loss: 0.0706
Epoch 88/250: 100%| | 570/570 [00:03<00:00, 183.25it/s]

[Feature Set: xydi_3] Epoch [88/250] - Avg Loss: 0.0421
Epoch 89/250: 100%| | 570/570 [00:03<00:00, 179.82it/s]

[Feature Set: xydi_3] Epoch [89/250] - Avg Loss: 0.0515
Epoch 90/250: 100%| | 570/570 [00:03<00:00, 183.49it/s]

[Feature Set: xydi_3] Epoch [90/250] - Avg Loss: 0.0852
Epoch 91/250: 100%| | 570/570 [00:03<00:00, 181.95it/s]

[Feature Set: xydi_3] Epoch [91/250] - Avg Loss: 0.0614
Epoch 92/250: 100%| | 570/570 [00:03<00:00, 182.99it/s]

[Feature Set: xydi_3] Epoch [92/250] - Avg Loss: 0.0549
Epoch 93/250: 100%| | 570/570 [00:03<00:00, 181.92it/s]

[Feature Set: xydi_3] Epoch [93/250] - Avg Loss: 0.0513
Epoch 94/250: 100%| | 570/570 [00:03<00:00, 176.68it/s]

[Feature Set: xydi_3] Epoch [94/250] - Avg Loss: 0.0341
Epoch 95/250: 100%| | 570/570 [00:03<00:00, 178.41it/s]

[Feature Set: xydi_3] Epoch [95/250] - Avg Loss: 0.0853
Epoch 96/250: 100%| | 570/570 [00:03<00:00, 182.47it/s]

[Feature Set: xydi_3] Epoch [96/250] - Avg Loss: 0.0217
Epoch 97/250: 100%| | 570/570 [00:03<00:00, 180.62it/s]

[Feature Set: xydi_3] Epoch [97/250] - Avg Loss: 0.0209
Epoch 98/250: 100%| | 570/570 [00:03<00:00, 176.83it/s]

[Feature Set: xydi_3] Epoch [98/250] - Avg Loss: 0.1031
Epoch 99/250: 100%| | 570/570 [00:03<00:00, 183.51it/s]

[Feature Set: xydi_3] Epoch [99/250] - Avg Loss: 0.0903
Epoch 100/250: 100%| | 570/570 [00:03<00:00, 172.42it/s]

[Feature Set: xydi_3] Epoch [100/250] - Avg Loss: 0.0229
Epoch 101/250: 100%| | 570/570 [00:03<00:00, 178.31it/s]

[Feature Set: xydi_3] Epoch [101/250] - Avg Loss: 0.0157
Epoch 102/250: 100%| | 570/570 [00:03<00:00, 178.17it/s]

[Feature Set: xydi_3] Epoch [102/250] - Avg Loss: 0.0544
Epoch 103/250: 100%| | 570/570 [00:03<00:00, 179.17it/s]

[Feature Set: xydi_3] Epoch [103/250] - Avg Loss: 0.0684
Epoch 104/250: 100%| | 570/570 [00:03<00:00, 183.35it/s]

[Feature Set: xydi_3] Epoch [104/250] - Avg Loss: 0.0315
Epoch 105/250: 100%| | 570/570 [00:03<00:00, 180.10it/s]

[Feature Set: xydi_3] Epoch [105/250] - Avg Loss: 0.0607
Epoch 106/250: 100%| | 570/570 [00:03<00:00, 177.80it/s]

[Feature Set: xydi_3] Epoch [106/250] - Avg Loss: 0.0137
Epoch 107/250: 100%| | 570/570 [00:03<00:00, 168.08it/s]

[Feature Set: xydi_3] Epoch [107/250] - Avg Loss: 0.0274
Epoch 108/250: 100%| | 570/570 [00:03<00:00, 182.44it/s]

[Feature Set: xydi_3] Epoch [108/250] - Avg Loss: 0.0173
Epoch 109/250: 100%| | 570/570 [00:03<00:00, 178.76it/s]

[Feature Set: xydi_3] Epoch [109/250] - Avg Loss: 0.0259
Epoch 110/250: 100%| | 570/570 [00:03<00:00, 182.66it/s]

[Feature Set: xydi_3] Epoch [110/250] - Avg Loss: 0.1026
Epoch 111/250: 100%| | 570/570 [00:03<00:00, 182.30it/s]

[Feature Set: xydi_3] Epoch [111/250] - Avg Loss: 0.0300
Epoch 112/250: 100%| | 570/570 [00:03<00:00, 182.90it/s]

[Feature Set: xydi_3] Epoch [112/250] - Avg Loss: 0.0191
Epoch 113/250: 100%| | 570/570 [00:03<00:00, 182.40it/s]

[Feature Set: xydi_3] Epoch [113/250] - Avg Loss: 0.0101
Epoch 114/250: 100%| | 570/570 [00:03<00:00, 183.46it/s]

[Feature Set: xydi_3] Epoch [114/250] - Avg Loss: 0.0510
Epoch 115/250: 100%| | 570/570 [00:03<00:00, 182.26it/s]

[Feature Set: xydi_3] Epoch [115/250] - Avg Loss: 0.0570
Epoch 116/250: 100%| | 570/570 [00:03<00:00, 183.39it/s]

[Feature Set: xydi_3] Epoch [116/250] - Avg Loss: 0.0201
Epoch 117/250: 100%| | 570/570 [00:03<00:00, 181.69it/s]

[Feature Set: xydi_3] Epoch [117/250] - Avg Loss: 0.0156
Epoch 118/250: 100%| | 570/570 [00:03<00:00, 179.97it/s]

[Feature Set: xydi_3] Epoch [118/250] - Avg Loss: 0.0135
Epoch 119/250: 100%| | 570/570 [00:03<00:00, 181.35it/s]

[Feature Set: xydi_3] Epoch [119/250] - Avg Loss: 0.0363
Epoch 120/250: 100%| | 570/570 [00:03<00:00, 179.69it/s]

[Feature Set: xydi_3] Epoch [120/250] - Avg Loss: 0.0839
Epoch 121/250: 100%| | 570/570 [00:03<00:00, 182.25it/s]

[Feature Set: xydi_3] Epoch [121/250] - Avg Loss: 0.0375
Epoch 122/250: 100%| | 570/570 [00:03<00:00, 183.72it/s]

[Feature Set: xydi_3] Epoch [122/250] - Avg Loss: 0.0576
Epoch 123/250: 100%| | 570/570 [00:03<00:00, 183.20it/s]

[Feature Set: xydi_3] Epoch [123/250] - Avg Loss: 0.0392
Epoch 124/250: 100%| | 570/570 [00:03<00:00, 154.35it/s]

[Feature Set: xydi_3] Epoch [124/250] - Avg Loss: 0.0599
Epoch 125/250: 100%| | 570/570 [00:03<00:00, 150.00it/s]

[Feature Set: xydi_3] Epoch [125/250] - Avg Loss: 0.0110
Epoch 126/250: 100%| | 570/570 [00:03<00:00, 176.91it/s]

[Feature Set: xydi_3] Epoch [126/250] - Avg Loss: 0.0381
Epoch 127/250: 100%| | 570/570 [00:03<00:00, 178.36it/s]

[Feature Set: xydi_3] Epoch [127/250] - Avg Loss: 0.0716
Epoch 128/250: 100%| | 570/570 [00:03<00:00, 181.72it/s]

[Feature Set: xydi_3] Epoch [128/250] - Avg Loss: 0.0585
Epoch 129/250: 100%| | 570/570 [00:03<00:00, 178.04it/s]

[Feature Set: xydi_3] Epoch [129/250] - Avg Loss: 0.0153
Epoch 130/250: 100%| | 570/570 [00:03<00:00, 169.78it/s]

[Feature Set: xydi_3] Epoch [130/250] - Avg Loss: 0.0098
Epoch 131/250: 100%| | 570/570 [00:03<00:00, 173.16it/s]

[Feature Set: xydi_3] Epoch [131/250] - Avg Loss: 0.0260
Epoch 132/250: 100%| | 570/570 [00:03<00:00, 177.27it/s]

[Feature Set: xydi_3] Epoch [132/250] - Avg Loss: 0.0289
Epoch 133/250: 100%| | 570/570 [00:03<00:00, 180.34it/s]

[Feature Set: xydi_3] Epoch [133/250] - Avg Loss: 0.1080
Epoch 134/250: 100%| | 570/570 [00:03<00:00, 182.21it/s]

[Feature Set: xydi_3] Epoch [134/250] - Avg Loss: 0.0677
Epoch 135/250: 100%| | 570/570 [00:03<00:00, 182.57it/s]

[Feature Set: xydi_3] Epoch [135/250] - Avg Loss: 0.0172
Epoch 136/250: 100%| | 570/570 [00:03<00:00, 179.17it/s]

[Feature Set: xydi_3] Epoch [136/250] - Avg Loss: 0.0129
Epoch 137/250: 100%| | 570/570 [00:03<00:00, 182.09it/s]

[Feature Set: xydi_3] Epoch [137/250] - Avg Loss: 0.0379
Epoch 138/250: 100%| | 570/570 [00:03<00:00, 176.29it/s]

[Feature Set: xydi_3] Epoch [138/250] - Avg Loss: 0.0098
Epoch 139/250: 100%| | 570/570 [00:03<00:00, 182.80it/s]

[Feature Set: xydi_3] Epoch [139/250] - Avg Loss: 0.0042
Epoch 140/250: 100%| | 570/570 [00:03<00:00, 181.67it/s]

[Feature Set: xydi_3] Epoch [140/250] - Avg Loss: 0.0310
Epoch 141/250: 100%| | 570/570 [00:03<00:00, 183.04it/s]

[Feature Set: xydi_3] Epoch [141/250] - Avg Loss: 0.0910
Epoch 142/250: 100%| | 570/570 [00:03<00:00, 180.58it/s]

[Feature Set: xydi_3] Epoch [142/250] - Avg Loss: 0.0397
Epoch 143/250: 100%| | 570/570 [00:03<00:00, 181.50it/s]

[Feature Set: xydi_3] Epoch [143/250] - Avg Loss: 0.0153
Epoch 144/250: 100%| | 570/570 [00:03<00:00, 176.75it/s]

[Feature Set: xydi_3] Epoch [144/250] - Avg Loss: 0.0152
Epoch 145/250: 100%| | 570/570 [00:03<00:00, 183.46it/s]

[Feature Set: xydi_3] Epoch [145/250] - Avg Loss: 0.0370
Epoch 146/250: 100%| | 570/570 [00:03<00:00, 181.25it/s]

[Feature Set: xydi_3] Epoch [146/250] - Avg Loss: 0.0510
Epoch 147/250: 100%| | 570/570 [00:03<00:00, 182.96it/s]

[Feature Set: xydi_3] Epoch [147/250] - Avg Loss: 0.0198
Epoch 148/250: 100%| | 570/570 [00:03<00:00, 182.56it/s]

[Feature Set: xydi_3] Epoch [148/250] - Avg Loss: 0.0062
Epoch 149/250: 100%| | 570/570 [00:03<00:00, 182.83it/s]

[Feature Set: xydi_3] Epoch [149/250] - Avg Loss: 0.0170
Epoch 150/250: 100%| | 570/570 [00:03<00:00, 174.16it/s]

[Feature Set: xydi_3] Epoch [150/250] - Avg Loss: 0.0493
Epoch 151/250: 100%| | 570/570 [00:03<00:00, 175.21it/s]

[Feature Set: xydi_3] Epoch [151/250] - Avg Loss: 0.0151
Epoch 152/250: 100%| | 570/570 [00:03<00:00, 179.72it/s]

[Feature Set: xydi_3] Epoch [152/250] - Avg Loss: 0.0206
Epoch 153/250: 100%| | 570/570 [00:03<00:00, 183.51it/s]

[Feature Set: xydi_3] Epoch [153/250] - Avg Loss: 0.0161
Epoch 154/250: 100%| | 570/570 [00:03<00:00, 182.39it/s]

[Feature Set: xydi_3] Epoch [154/250] - Avg Loss: 0.0479
Epoch 155/250: 100%| | 570/570 [00:03<00:00, 183.05it/s]

[Feature Set: xydi_3] Epoch [155/250] - Avg Loss: 0.0524
Epoch 156/250: 100%| | 570/570 [00:03<00:00, 182.68it/s]

[Feature Set: xydi_3] Epoch [156/250] - Avg Loss: 0.0272
Epoch 157/250: 100%| | 570/570 [00:03<00:00, 180.76it/s]

[Feature Set: xydi_3] Epoch [157/250] - Avg Loss: 0.0256
Epoch 158/250: 100%| | 570/570 [00:03<00:00, 182.34it/s]

[Feature Set: xydi_3] Epoch [158/250] - Avg Loss: 0.0451
Epoch 159/250: 100%| | 570/570 [00:03<00:00, 182.65it/s]

[Feature Set: xydi_3] Epoch [159/250] - Avg Loss: 0.0340
Epoch 160/250: 100%| | 570/570 [00:03<00:00, 182.12it/s]

[Feature Set: xydi_3] Epoch [160/250] - Avg Loss: 0.0111
Epoch 161/250: 100%| | 570/570 [00:03<00:00, 182.67it/s]

[Feature Set: xydi_3] Epoch [161/250] - Avg Loss: 0.0415
Epoch 162/250: 100%| | 570/570 [00:03<00:00, 182.23it/s]

[Feature Set: xydi_3] Epoch [162/250] - Avg Loss: 0.0975
Epoch 163/250: 100%| | 570/570 [00:03<00:00, 182.83it/s]

[Feature Set: xydi_3] Epoch [163/250] - Avg Loss: 0.0184
Epoch 164/250: 100%| | 570/570 [00:03<00:00, 180.31it/s]

[Feature Set: xydi_3] Epoch [164/250] - Avg Loss: 0.0141
Epoch 165/250: 100%| | 570/570 [00:03<00:00, 172.28it/s]

[Feature Set: xydi_3] Epoch [165/250] - Avg Loss: 0.0117
Epoch 166/250: 100%| | 570/570 [00:03<00:00, 182.93it/s]

[Feature Set: xydi_3] Epoch [166/250] - Avg Loss: 0.0204
Epoch 167/250: 100%| | 570/570 [00:03<00:00, 181.84it/s]

[Feature Set: xydi_3] Epoch [167/250] - Avg Loss: 0.0438
Epoch 168/250: 100%| | 570/570 [00:03<00:00, 183.12it/s]

[Feature Set: xydi_3] Epoch [168/250] - Avg Loss: 0.0206
Epoch 169/250: 100%| | 570/570 [00:03<00:00, 181.96it/s]

[Feature Set: xydi_3] Epoch [169/250] - Avg Loss: 0.0054
Epoch 170/250: 100%| | 570/570 [00:03<00:00, 183.35it/s]

[Feature Set: xydi_3] Epoch [170/250] - Avg Loss: 0.0024
Epoch 171/250: 100%| | 570/570 [00:03<00:00, 181.71it/s]

[Feature Set: xydi_3] Epoch [171/250] - Avg Loss: 0.0034
Epoch 172/250: 100%| | 570/570 [00:03<00:00, 183.17it/s]

[Feature Set: xydi_3] Epoch [172/250] - Avg Loss: 0.0594
Epoch 173/250: 100%| | 570/570 [00:03<00:00, 181.95it/s]

[Feature Set: xydi_3] Epoch [173/250] - Avg Loss: 0.0454
Epoch 174/250: 100%| | 570/570 [00:03<00:00, 183.76it/s]

[Feature Set: xydi_3] Epoch [174/250] - Avg Loss: 0.0132
Epoch 175/250: 100%| | 570/570 [00:03<00:00, 182.67it/s]

[Feature Set: xydi_3] Epoch [175/250] - Avg Loss: 0.0921
Epoch 176/250: 100%| | 570/570 [00:03<00:00, 183.12it/s]

[Feature Set: xydi_3] Epoch [176/250] - Avg Loss: 0.0213
Epoch 177/250: 100%| | 570/570 [00:03<00:00, 181.75it/s]

[Feature Set: xydi_3] Epoch [177/250] - Avg Loss: 0.0263
Epoch 178/250: 100%| | 570/570 [00:03<00:00, 174.46it/s]

[Feature Set: xydi_3] Epoch [178/250] - Avg Loss: 0.0145
Epoch 179/250: 100%| | 570/570 [00:03<00:00, 178.45it/s]

[Feature Set: xydi_3] Epoch [179/250] - Avg Loss: 0.0048
Epoch 180/250: 100%| | 570/570 [00:03<00:00, 183.18it/s]

[Feature Set: xydi_3] Epoch [180/250] - Avg Loss: 0.0268
Epoch 181/250: 100%| | 570/570 [00:03<00:00, 182.29it/s]

[Feature Set: xydi_3] Epoch [181/250] - Avg Loss: 0.0623
Epoch 182/250: 100%| | 570/570 [00:03<00:00, 179.26it/s]

[Feature Set: xydi_3] Epoch [182/250] - Avg Loss: 0.0517
Epoch 183/250: 100%| | 570/570 [00:03<00:00, 181.56it/s]

[Feature Set: xydi_3] Epoch [183/250] - Avg Loss: 0.0203
Epoch 184/250: 100%| | 570/570 [00:03<00:00, 183.91it/s]

[Feature Set: xydi_3] Epoch [184/250] - Avg Loss: 0.0406
Epoch 185/250: 100%| | 570/570 [00:03<00:00, 182.76it/s]

[Feature Set: xydi_3] Epoch [185/250] - Avg Loss: 0.0425
Epoch 186/250: 100%| | 570/570 [00:03<00:00, 183.46it/s]

[Feature Set: xydi_3] Epoch [186/250] - Avg Loss: 0.0161
Epoch 187/250: 100%| | 570/570 [00:03<00:00, 182.47it/s]

[Feature Set: xydi_3] Epoch [187/250] - Avg Loss: 0.0533
Epoch 188/250: 100%| | 570/570 [00:03<00:00, 183.83it/s]

[Feature Set: xydi_3] Epoch [188/250] - Avg Loss: 0.0251
Epoch 189/250: 100%| | 570/570 [00:03<00:00, 182.06it/s]

[Feature Set: xydi_3] Epoch [189/250] - Avg Loss: 0.0197
Epoch 190/250: 100%| | 570/570 [00:03<00:00, 183.15it/s]

[Feature Set: xydi_3] Epoch [190/250] - Avg Loss: 0.0067
Epoch 191/250: 100%| | 570/570 [00:03<00:00, 182.41it/s]

[Feature Set: xydi_3] Epoch [191/250] - Avg Loss: 0.0105
Epoch 192/250: 100%| | 570/570 [00:03<00:00, 183.33it/s]

[Feature Set: xydi_3] Epoch [192/250] - Avg Loss: 0.0064
Epoch 193/250: 100%| | 570/570 [00:03<00:00, 182.45it/s]

[Feature Set: xydi_3] Epoch [193/250] - Avg Loss: 0.0095
Epoch 194/250: 100%| | 570/570 [00:03<00:00, 183.28it/s]

[Feature Set: xydi_3] Epoch [194/250] - Avg Loss: 0.0399
Epoch 195/250: 100%| | 570/570 [00:03<00:00, 179.48it/s]

[Feature Set: xydi_3] Epoch [195/250] - Avg Loss: 0.0329
Epoch 196/250: 100%| | 570/570 [00:03<00:00, 176.88it/s]

[Feature Set: xydi_3] Epoch [196/250] - Avg Loss: 0.0083
Epoch 197/250: 100%| | 570/570 [00:03<00:00, 174.27it/s]

[Feature Set: xydi_3] Epoch [197/250] - Avg Loss: 0.0262
Epoch 198/250: 100%| | 570/570 [00:03<00:00, 179.37it/s]

[Feature Set: xydi_3] Epoch [198/250] - Avg Loss: 0.0236
Epoch 199/250: 100%| | 570/570 [00:03<00:00, 182.03it/s]

[Feature Set: xydi_3] Epoch [199/250] - Avg Loss: 0.0504
Epoch 200/250: 100%| | 570/570 [00:03<00:00, 182.88it/s]

[Feature Set: xydi_3] Epoch [200/250] - Avg Loss: 0.0224
Epoch 201/250: 100%| | 570/570 [00:03<00:00, 182.00it/s]

[Feature Set: xydi_3] Epoch [201/250] - Avg Loss: 0.0043
Epoch 202/250: 100%| | 570/570 [00:03<00:00, 183.45it/s]

[Feature Set: xydi_3] Epoch [202/250] - Avg Loss: 0.0032
Epoch 203/250: 100%| | 570/570 [00:03<00:00, 180.51it/s]

[Feature Set: xydi_3] Epoch [203/250] - Avg Loss: 0.0020
Epoch 204/250: 100%| | 570/570 [00:03<00:00, 183.13it/s]

[Feature Set: xydi_3] Epoch [204/250] - Avg Loss: 0.0447
Epoch 205/250: 100%| | 570/570 [00:03<00:00, 181.91it/s]

[Feature Set: xydi_3] Epoch [205/250] - Avg Loss: 0.0334
Epoch 206/250: 100%| | 570/570 [00:03<00:00, 183.60it/s]

[Feature Set: xydi_3] Epoch [206/250] - Avg Loss: 0.0435
Epoch 207/250: 100%| | 570/570 [00:03<00:00, 182.38it/s]

[Feature Set: xydi_3] Epoch [207/250] - Avg Loss: 0.0048
Epoch 208/250: 100%| | 570/570 [00:03<00:00, 183.12it/s]

[Feature Set: xydi_3] Epoch [208/250] - Avg Loss: 0.0019
Epoch 209/250: 100%| | 570/570 [00:03<00:00, 181.27it/s]

[Feature Set: xydi_3] Epoch [209/250] - Avg Loss: 0.0018
Epoch 210/250: 100%| | 570/570 [00:03<00:00, 182.37it/s]

[Feature Set: xydi_3] Epoch [210/250] - Avg Loss: 0.0029
Epoch 211/250: 100%| | 570/570 [00:03<00:00, 181.98it/s]

[Feature Set: xydi_3] Epoch [211/250] - Avg Loss: 0.0561
Epoch 212/250: 100%| | 570/570 [00:03<00:00, 183.75it/s]

[Feature Set: xydi_3] Epoch [212/250] - Avg Loss: 0.0207
Epoch 213/250: 100%| | 570/570 [00:03<00:00, 182.58it/s]

[Feature Set: xydi_3] Epoch [213/250] - Avg Loss: 0.0381
Epoch 214/250: 100%| | 570/570 [00:03<00:00, 177.68it/s]

[Feature Set: xydi_3] Epoch [214/250] - Avg Loss: 0.0093
Epoch 215/250: 100%| | 570/570 [00:03<00:00, 174.75it/s]

[Feature Set: xydi_3] Epoch [215/250] - Avg Loss: 0.0130
Epoch 216/250: 100%| | 570/570 [00:03<00:00, 178.88it/s]

[Feature Set: xydi_3] Epoch [216/250] - Avg Loss: 0.0220
Epoch 217/250: 100%| | 570/570 [00:03<00:00, 178.20it/s]

[Feature Set: xydi_3] Epoch [217/250] - Avg Loss: 0.0307
Epoch 218/250: 100%| | 570/570 [00:03<00:00, 181.72it/s]

[Feature Set: xydi_3] Epoch [218/250] - Avg Loss: 0.0456
Epoch 219/250: 100%| | 570/570 [00:03<00:00, 182.60it/s]

[Feature Set: xydi_3] Epoch [219/250] - Avg Loss: 0.0221
Epoch 220/250: 100%| | 570/570 [00:03<00:00, 182.24it/s]

[Feature Set: xydi_3] Epoch [220/250] - Avg Loss: 0.0082
Epoch 221/250: 100%| | 570/570 [00:03<00:00, 182.90it/s]

[Feature Set: xydi_3] Epoch [221/250] - Avg Loss: 0.0161
Epoch 222/250: 100%| | 570/570 [00:03<00:00, 176.83it/s]

[Feature Set: xydi_3] Epoch [222/250] - Avg Loss: 0.0141
Epoch 223/250: 100%| | 570/570 [00:03<00:00, 178.99it/s]

[Feature Set: xydi_3] Epoch [223/250] - Avg Loss: 0.0364
Epoch 224/250: 100%| | 570/570 [00:03<00:00, 179.13it/s]

[Feature Set: xydi_3] Epoch [224/250] - Avg Loss: 0.0162
Epoch 225/250: 100%| | 570/570 [00:03<00:00, 179.14it/s]

[Feature Set: xydi_3] Epoch [225/250] - Avg Loss: 0.0235
Epoch 226/250: 100%| | 570/570 [00:03<00:00, 176.54it/s]

[Feature Set: xydi_3] Epoch [226/250] - Avg Loss: 0.0186
Epoch 227/250: 100%| | 570/570 [00:03<00:00, 182.63it/s]

[Feature Set: xydi_3] Epoch [227/250] - Avg Loss: 0.0047
Epoch 228/250: 100%| | 570/570 [00:03<00:00, 182.87it/s]

[Feature Set: xydi_3] Epoch [228/250] - Avg Loss: 0.0184
Epoch 229/250: 100%| | 570/570 [00:03<00:00, 164.93it/s]

[Feature Set: xydi_3] Epoch [229/250] - Avg Loss: 0.0136
Epoch 230/250: 100%| | 570/570 [00:03<00:00, 181.37it/s]

[Feature Set: xydi_3] Epoch [230/250] - Avg Loss: 0.0025
Epoch 231/250: 100%| | 570/570 [00:03<00:00, 183.57it/s]

[Feature Set: xydi_3] Epoch [231/250] - Avg Loss: 0.1120
Epoch 232/250: 100%| | 570/570 [00:03<00:00, 180.31it/s]

[Feature Set: xydi_3] Epoch [232/250] - Avg Loss: 0.0623
Epoch 233/250: 100%| | 570/570 [00:03<00:00, 180.53it/s]

[Feature Set: xydi_3] Epoch [233/250] - Avg Loss: 0.0383
Epoch 234/250: 100%| | 570/570 [00:03<00:00, 182.27it/s]

[Feature Set: xydi_3] Epoch [234/250] - Avg Loss: 0.0761
Epoch 235/250: 100%| | 570/570 [00:03<00:00, 184.09it/s]

[Feature Set: xydi_3] Epoch [235/250] - Avg Loss: 0.0117
Epoch 236/250: 100%| | 570/570 [00:03<00:00, 182.23it/s]

[Feature Set: xydi_3] Epoch [236/250] - Avg Loss: 0.0362
Epoch 237/250: 100%| | 570/570 [00:03<00:00, 184.10it/s]

[Feature Set: xydi_3] Epoch [237/250] - Avg Loss: 0.0275
Epoch 238/250: 100%| | 570/570 [00:03<00:00, 182.66it/s]

[Feature Set: xydi_3] Epoch [238/250] - Avg Loss: 0.0042
Epoch 239/250: 100%| | 570/570 [00:03<00:00, 181.92it/s]

[Feature Set: xydi_3] Epoch [239/250] - Avg Loss: 0.0062
Epoch 240/250: 100%| | 570/570 [00:03<00:00, 182.94it/s]

[Feature Set: xydi_3] Epoch [240/250] - Avg Loss: 0.0029
Epoch 241/250: 100%| | 570/570 [00:03<00:00, 182.01it/s]

[Feature Set: xydi_3] Epoch [241/250] - Avg Loss: 0.0096
Epoch 242/250: 100%| | 570/570 [00:03<00:00, 179.20it/s]

[Feature Set: xydi_3] Epoch [242/250] - Avg Loss: 0.0308
Epoch 243/250: 100%| | 570/570 [00:03<00:00, 183.52it/s]

[Feature Set: xydi_3] Epoch [243/250] - Avg Loss: 0.0162
Epoch 244/250: 100%| | 570/570 [00:03<00:00, 178.05it/s]

[Feature Set: xydi_3] Epoch [244/250] - Avg Loss: 0.0227
Epoch 245/250: 100%| | 570/570 [00:03<00:00, 182.25it/s]

[Feature Set: xydi_3] Epoch [245/250] - Avg Loss: 0.0471
Epoch 246/250: 100%| | 570/570 [00:03<00:00, 176.83it/s]

[Feature Set: xydi_3] Epoch [246/250] - Avg Loss: 0.0497
Epoch 247/250: 100%| | 570/570 [00:03<00:00, 176.36it/s]

[Feature Set: xydi_3] Epoch [247/250] - Avg Loss: 0.0263
Epoch 248/250: 100%| | 570/570 [00:03<00:00, 180.91it/s]

[Feature Set: xydi_3] Epoch [248/250] - Avg Loss: 0.0164
Epoch 249/250: 100%| | 570/570 [00:03<00:00, 181.28it/s]

[Feature Set: xydi_3] Epoch [249/250] - Avg Loss: 0.0037
Epoch 250/250: 100%| | 570/570 [00:03<00:00, 183.60it/s]

[Feature Set: xydi_3] Epoch [250/250] - Avg Loss: 0.0253

[Eval] xydi_3: 100%| | 143/143 [00:00<00:00, 309.16it/s]

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

	Feature_Set	Accuracy	Macro_F1	Weighted_F1
0	xydi_3	0.615385	0.556777	0.62102