

```
Last login: Sun Mar 23 02:01:42 on ttys000
(base) athish@MacBook-Air-5 ~ % cd ~/Desktop
```

```
(base) athish@MacBook-Air-5 Desktop % cd Athish_SaiDL_Assignment
```

```
(base) athish@MacBook-Air-5 Athish_SaiDL_Assignment % source coreml/bin/activate
```

```
(coreml) (base) athish@MacBook-Air-5 Athish_SaiDL_Assignment % cd coreml
```

```
(coreml) (base) athish@MacBook-Air-5 coreml % python Bonus_Task.py
```

```
=== Training with asymmetric noise rate  $\eta = 0.1$  ===
```

```
--- Training with CE ---
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```
Epoch 10/100, Train Acc: 79.23%, Test Acc: 79.97%
Epoch 20/100, Train Acc: 86.98%, Test Acc: 79.91%
Epoch 30/100, Train Acc: 91.48%, Test Acc: 80.72%
Epoch 40/100, Train Acc: 94.25%, Test Acc: 78.60%
Epoch 50/100, Train Acc: 96.88%, Test Acc: 80.28%
Epoch 60/100, Train Acc: 98.57%, Test Acc: 80.65%
Epoch 70/100, Train Acc: 99.54%, Test Acc: 81.32%
Epoch 80/100, Train Acc: 99.78%, Test Acc: 81.41%
Epoch 90/100, Train Acc: 99.84%, Test Acc: 81.41%
Epoch 100/100, Train Acc: 99.85%, Test Acc: 81.42%
Best Test Accuracy with CE: 82.02%
```

```
--- Training with FL ---
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```
Epoch 10/100, Train Acc: 75.77%, Test Acc: 77.54%
Epoch 20/100, Train Acc: 83.46%, Test Acc: 79.97%
Epoch 30/100, Train Acc: 87.72%, Test Acc: 79.22%
Epoch 40/100, Train Acc: 91.49%, Test Acc: 79.89%
Epoch 50/100, Train Acc: 94.08%, Test Acc: 80.00%
Epoch 60/100, Train Acc: 96.70%, Test Acc: 81.00%
Epoch 70/100, Train Acc: 98.45%, Test Acc: 81.39%
Epoch 80/100, Train Acc: 99.09%, Test Acc: 81.12%
Epoch 90/100, Train Acc: 99.29%, Test Acc: 81.34%
Epoch 100/100, Train Acc: 99.38%, Test Acc: 81.38%
Best Test Accuracy with FL: 81.56%
```

```
--- Training with NCE ---
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```
Epoch 10/100, Train Acc: 51.17%, Test Acc: 54.28%
Epoch 20/100, Train Acc: 56.65%, Test Acc: 59.71%
Epoch 30/100, Train Acc: 60.23%, Test Acc: 58.96%
Epoch 40/100, Train Acc: 63.07%, Test Acc: 62.96%
Epoch 50/100, Train Acc: 65.59%, Test Acc: 66.18%
Epoch 60/100, Train Acc: 68.00%, Test Acc: 66.88%
Epoch 70/100, Train Acc: 70.43%, Test Acc: 68.13%
Epoch 80/100, Train Acc: 72.06%, Test Acc: 69.04%
Epoch 90/100, Train Acc: 73.30%, Test Acc: 69.29%
Epoch 100/100, Train Acc: 73.69%, Test Acc: 69.22%
Best Test Accuracy with NCE: 69.38%
```

```
--- Training with NFL ---
```

```
Epoch 10/100, Train Acc: 57.56%, Test Acc: 60.84%
Epoch 20/100, Train Acc: 63.89%, Test Acc: 65.31%
Epoch 30/100, Train Acc: 66.95%, Test Acc: 66.86%
Epoch 40/100, Train Acc: 69.99%, Test Acc: 68.66%
Epoch 50/100, Train Acc: 72.69%, Test Acc: 67.11%
Epoch 60/100, Train Acc: 75.72%, Test Acc: 64.42%
```

Epoch 70/100, Train Acc: 79.06%, Test Acc: 71.04%
Epoch 80/100, Train Acc: 81.73%, Test Acc: 71.16%
Epoch 90/100, Train Acc: 83.41%, Test Acc: 71.60%
Epoch 100/100, Train Acc: 83.79%, Test Acc: 71.61%
Best Test Accuracy with NFL: 71.78%

--- Training with MAE ---

Epoch 10/100, Train Acc: 63.13%, Test Acc: 61.87%
Epoch 20/100, Train Acc: 68.54%, Test Acc: 67.34%
Epoch 30/100, Train Acc: 71.72%, Test Acc: 67.38%
Epoch 40/100, Train Acc: 74.11%, Test Acc: 67.77%
Epoch 50/100, Train Acc: 80.73%, Test Acc: 74.53%
Epoch 60/100, Train Acc: 83.67%, Test Acc: 75.13%
Epoch 70/100, Train Acc: 85.46%, Test Acc: 75.11%
Epoch 80/100, Train Acc: 86.30%, Test Acc: 75.63%
Epoch 90/100, Train Acc: 86.66%, Test Acc: 75.80%
Epoch 100/100, Train Acc: 86.73%, Test Acc: 75.75%
Best Test Accuracy with MAE: 75.96%

--- Training with RCE ---

Epoch 10/100, Train Acc: 44.02%, Test Acc: 44.88%
Epoch 20/100, Train Acc: 57.73%, Test Acc: 58.89%
Epoch 30/100, Train Acc: 71.35%, Test Acc: 74.05%
Epoch 40/100, Train Acc: 78.79%, Test Acc: 79.20%
Epoch 50/100, Train Acc: 83.54%, Test Acc: 79.40%
Epoch 60/100, Train Acc: 88.03%, Test Acc: 82.07%
Epoch 70/100, Train Acc: 91.11%, Test Acc: 83.10%
Epoch 80/100, Train Acc: 92.86%, Test Acc: 83.36%
Epoch 90/100, Train Acc: 93.44%, Test Acc: 83.38%
Epoch 100/100, Train Acc: 93.54%, Test Acc: 83.44%
Best Test Accuracy with RCE: 83.52%

--- Training with APL-NCE+MAE ---

Epoch 10/100, Train Acc: 73.00%, Test Acc: 72.67%
Epoch 20/100, Train Acc: 80.13%, Test Acc: 78.47%
Epoch 30/100, Train Acc: 84.79%, Test Acc: 78.84%
Epoch 40/100, Train Acc: 88.35%, Test Acc: 80.97%
Epoch 50/100, Train Acc: 91.00%, Test Acc: 81.28%
Epoch 60/100, Train Acc: 93.53%, Test Acc: 79.01%
Epoch 70/100, Train Acc: 95.40%, Test Acc: 80.49%
Epoch 80/100, Train Acc: 96.46%, Test Acc: 81.37%
Epoch 90/100, Train Acc: 97.00%, Test Acc: 80.90%
Epoch 100/100, Train Acc: 97.10%, Test Acc: 81.11%
Best Test Accuracy with APL-NCE+MAE: 81.78%

--- Training with APL-NCE+RCE ---

Epoch 10/100, Train Acc: 55.12%, Test Acc: 59.75%
Epoch 20/100, Train Acc: 69.29%, Test Acc: 71.57%
Epoch 30/100, Train Acc: 75.70%, Test Acc: 77.45%
Epoch 40/100, Train Acc: 80.80%, Test Acc: 78.78%
Epoch 50/100, Train Acc: 85.22%, Test Acc: 79.60%
Epoch 60/100, Train Acc: 89.12%, Test Acc: 82.07%
Epoch 70/100, Train Acc: 92.25%, Test Acc: 83.11%
Epoch 80/100, Train Acc: 93.58%, Test Acc: 83.45%
Epoch 90/100, Train Acc: 94.12%, Test Acc: 83.19%
Epoch 100/100, Train Acc: 94.22%, Test Acc: 83.12%
Best Test Accuracy with APL-NCE+RCE: 83.45%

--- Training with APL-NFL+MAE ---

Epoch 10/100, Train Acc: 73.65%, Test Acc: 74.41%
Epoch 20/100, Train Acc: 80.70%, Test Acc: 76.49%
Epoch 30/100, Train Acc: 85.54%, Test Acc: 79.41%
Epoch 40/100, Train Acc: 88.86%, Test Acc: 80.05%
Epoch 50/100, Train Acc: 91.79%, Test Acc: 79.74%
Epoch 60/100, Train Acc: 94.06%, Test Acc: 80.25%
Epoch 70/100, Train Acc: 95.77%, Test Acc: 81.17%
Epoch 80/100, Train Acc: 96.93%, Test Acc: 80.66%
Epoch 90/100, Train Acc: 97.43%, Test Acc: 80.59%
Epoch 100/100, Train Acc: 97.54%, Test Acc: 80.61%
Best Test Accuracy with APL-NFL+MAE: 81.43%

--- Training with APL-NFL+RCE ---

Epoch 10/100, Train Acc: 58.67%, Test Acc: 61.21%
Epoch 20/100, Train Acc: 69.90%, Test Acc: 72.37%
Epoch 30/100, Train Acc: 76.01%, Test Acc: 76.52%
Epoch 40/100, Train Acc: 81.30%, Test Acc: 80.92%
Epoch 50/100, Train Acc: 85.63%, Test Acc: 81.79%
Epoch 60/100, Train Acc: 89.43%, Test Acc: 82.63%
Epoch 70/100, Train Acc: 92.26%, Test Acc: 82.97%
Epoch 80/100, Train Acc: 93.68%, Test Acc: 83.51%
Epoch 90/100, Train Acc: 94.14%, Test Acc: 83.43%
Epoch 100/100, Train Acc: 94.20%, Test Acc: 83.39%
Best Test Accuracy with APL-NFL+RCE: 83.66%

=== Training with asymmetric noise rate $\eta = 0.2$ ===

--- Training with CE ---

Epoch 10/100, Train Acc: 74.48%, Test Acc: 78.82%
Epoch 20/100, Train Acc: 82.62%, Test Acc: 80.17%
Epoch 30/100, Train Acc: 87.21%, Test Acc: 78.28%
Epoch 40/100, Train Acc: 91.26%, Test Acc: 75.95%
Epoch 50/100, Train Acc: 94.44%, Test Acc: 77.97%
Epoch 60/100, Train Acc: 97.21%, Test Acc: 77.21%
Epoch 70/100, Train Acc: 99.06%, Test Acc: 76.38%
Epoch 80/100, Train Acc: 99.56%, Test Acc: 77.42%
Epoch 90/100, Train Acc: 99.68%, Test Acc: 76.79%
Epoch 100/100, Train Acc: 99.72%, Test Acc: 76.98%
Best Test Accuracy with CE: 80.59%

--- Training with FL ---

Epoch 10/100, Train Acc: 71.90%, Test Acc: 77.99%
Epoch 20/100, Train Acc: 79.71%, Test Acc: 75.53%
Epoch 30/100, Train Acc: 83.83%, Test Acc: 79.07%
Epoch 40/100, Train Acc: 87.55%, Test Acc: 78.38%
Epoch 50/100, Train Acc: 90.57%, Test Acc: 78.38%
Epoch 60/100, Train Acc: 94.26%, Test Acc: 79.36%
Epoch 70/100, Train Acc: 97.12%, Test Acc: 78.87%
Epoch 80/100, Train Acc: 98.46%, Test Acc: 78.53%
Epoch 90/100, Train Acc: 98.89%, Test Acc: 78.39%
Epoch 100/100, Train Acc: 99.05%, Test Acc: 78.42%
Best Test Accuracy with FL: 80.47%

--- Training with NCE ---

Epoch 10/100, Train Acc: 48.40%, Test Acc: 51.22%
Epoch 20/100, Train Acc: 53.68%, Test Acc: 55.82%
Epoch 30/100, Train Acc: 56.66%, Test Acc: 57.58%

Epoch 40/100, Train Acc: 59.71%, Test Acc: 60.91%
Epoch 50/100, Train Acc: 61.85%, Test Acc: 63.00%
Epoch 60/100, Train Acc: 63.99%, Test Acc: 65.12%
Epoch 70/100, Train Acc: 65.99%, Test Acc: 66.07%
Epoch 80/100, Train Acc: 67.59%, Test Acc: 66.28%
Epoch 90/100, Train Acc: 68.85%, Test Acc: 66.46%
Epoch 100/100, Train Acc: 69.12%, Test Acc: 66.38%
Best Test Accuracy with NCE: 66.64%

--- Training with NFL ---

Epoch 10/100, Train Acc: 55.20%, Test Acc: 60.42%
Epoch 20/100, Train Acc: 61.35%, Test Acc: 64.09%
Epoch 30/100, Train Acc: 64.27%, Test Acc: 62.53%
Epoch 40/100, Train Acc: 66.74%, Test Acc: 67.52%
Epoch 50/100, Train Acc: 69.76%, Test Acc: 67.82%
Epoch 60/100, Train Acc: 72.21%, Test Acc: 70.00%
Epoch 70/100, Train Acc: 74.75%, Test Acc: 69.55%
Epoch 80/100, Train Acc: 77.11%, Test Acc: 69.28%
Epoch 90/100, Train Acc: 78.37%, Test Acc: 69.40%
Epoch 100/100, Train Acc: 78.79%, Test Acc: 69.70%
Best Test Accuracy with NFL: 70.09%

--- Training with MAE ---

Epoch 10/100, Train Acc: 47.23%, Test Acc: 43.10%
Epoch 20/100, Train Acc: 57.14%, Test Acc: 51.37%
Epoch 30/100, Train Acc: 60.68%, Test Acc: 53.22%
Epoch 40/100, Train Acc: 62.61%, Test Acc: 53.78%
Epoch 50/100, Train Acc: 63.90%, Test Acc: 52.87%
Epoch 60/100, Train Acc: 64.80%, Test Acc: 53.60%
Epoch 70/100, Train Acc: 65.18%, Test Acc: 54.01%
Epoch 80/100, Train Acc: 68.95%, Test Acc: 57.00%
Epoch 90/100, Train Acc: 71.12%, Test Acc: 57.87%
Epoch 100/100, Train Acc: 71.55%, Test Acc: 58.23%
Best Test Accuracy with MAE: 58.33%

--- Training with RCE ---

Epoch 10/100, Train Acc: 40.29%, Test Acc: 39.36%
Epoch 20/100, Train Acc: 47.89%, Test Acc: 43.06%
Epoch 30/100, Train Acc: 61.16%, Test Acc: 59.24%
Epoch 40/100, Train Acc: 68.66%, Test Acc: 65.01%
Epoch 50/100, Train Acc: 73.58%, Test Acc: 70.78%
Epoch 60/100, Train Acc: 77.88%, Test Acc: 72.40%
Epoch 70/100, Train Acc: 81.59%, Test Acc: 72.55%
Epoch 80/100, Train Acc: 83.74%, Test Acc: 73.44%
Epoch 90/100, Train Acc: 84.40%, Test Acc: 73.22%
Epoch 100/100, Train Acc: 84.53%, Test Acc: 73.38%
Best Test Accuracy with RCE: 73.54%

--- Training with APL-NCE+MAE ---

Epoch 10/100, Train Acc: 68.94%, Test Acc: 71.14%
Epoch 20/100, Train Acc: 76.16%, Test Acc: 77.16%
Epoch 30/100, Train Acc: 80.50%, Test Acc: 74.45%
Epoch 40/100, Train Acc: 84.37%, Test Acc: 76.64%
Epoch 50/100, Train Acc: 87.92%, Test Acc: 79.53%
Epoch 60/100, Train Acc: 90.90%, Test Acc: 76.37%
Epoch 70/100, Train Acc: 93.57%, Test Acc: 76.74%
Epoch 80/100, Train Acc: 95.18%, Test Acc: 76.78%
Epoch 90/100, Train Acc: 96.04%, Test Acc: 76.93%

Epoch 100/100, Train Acc: 96.21%, Test Acc: 77.01%
Best Test Accuracy with APL-NCE+MAE: 79.94%

--- Training with APL-NCE+RCE ---

Epoch 10/100, Train Acc: 49.95%, Test Acc: 54.35%
Epoch 20/100, Train Acc: 63.95%, Test Acc: 66.63%
Epoch 30/100, Train Acc: 70.90%, Test Acc: 70.41%
Epoch 40/100, Train Acc: 76.40%, Test Acc: 76.53%
Epoch 50/100, Train Acc: 80.97%, Test Acc: 79.71%
Epoch 60/100, Train Acc: 85.27%, Test Acc: 79.93%
Epoch 70/100, Train Acc: 88.96%, Test Acc: 79.92%
Epoch 80/100, Train Acc: 91.01%, Test Acc: 80.48%
Epoch 90/100, Train Acc: 91.70%, Test Acc: 80.26%
Epoch 100/100, Train Acc: 91.84%, Test Acc: 80.17%
Best Test Accuracy with APL-NCE+RCE: 80.88%

--- Training with APL-NFL+MAE ---

Epoch 10/100, Train Acc: 70.85%, Test Acc: 74.13%
Epoch 20/100, Train Acc: 77.88%, Test Acc: 75.21%
Epoch 30/100, Train Acc: 82.44%, Test Acc: 78.10%
Epoch 40/100, Train Acc: 86.09%, Test Acc: 78.92%
Epoch 50/100, Train Acc: 89.63%, Test Acc: 78.75%
Epoch 60/100, Train Acc: 92.77%, Test Acc: 75.59%
Epoch 70/100, Train Acc: 95.13%, Test Acc: 76.96%
Epoch 80/100, Train Acc: 96.57%, Test Acc: 76.61%
Epoch 90/100, Train Acc: 97.18%, Test Acc: 76.23%
Epoch 100/100, Train Acc: 97.40%, Test Acc: 76.00%
Best Test Accuracy with APL-NFL+MAE: 79.78%

--- Training with APL-NFL+RCE ---

Epoch 10/100, Train Acc: 56.84%, Test Acc: 62.97%
Epoch 20/100, Train Acc: 67.72%, Test Acc: 72.34%
Epoch 30/100, Train Acc: 73.56%, Test Acc: 75.58%
Epoch 40/100, Train Acc: 78.54%, Test Acc: 78.49%
Epoch 50/100, Train Acc: 82.87%, Test Acc: 80.27%
Epoch 60/100, Train Acc: 86.80%, Test Acc: 79.76%
Epoch 70/100, Train Acc: 89.84%, Test Acc: 80.57%
Epoch 80/100, Train Acc: 91.55%, Test Acc: 79.90%
Epoch 90/100, Train Acc: 92.17%, Test Acc: 80.18%
Epoch 100/100, Train Acc: 92.31%, Test Acc: 80.20%
Best Test Accuracy with APL-NFL+RCE: 80.77%

=== Training with asymmetric noise rate $\eta = 0.3$ ===

--- Training with CE ---

Epoch 10/100, Train Acc: 71.39%, Test Acc: 77.76%
Epoch 20/100, Train Acc: 78.89%, Test Acc: 77.75%
Epoch 30/100, Train Acc: 84.40%, Test Acc: 75.69%
Epoch 40/100, Train Acc: 89.74%, Test Acc: 72.60%
Epoch 50/100, Train Acc: 94.30%, Test Acc: 73.37%
Epoch 60/100, Train Acc: 97.86%, Test Acc: 73.38%
Epoch 70/100, Train Acc: 99.43%, Test Acc: 72.55%
Epoch 80/100, Train Acc: 99.69%, Test Acc: 72.32%
Epoch 90/100, Train Acc: 99.83%, Test Acc: 73.05%
Epoch 100/100, Train Acc: 99.80%, Test Acc: 73.15%
Best Test Accuracy with CE: 79.41%

--- Training with FL ---

Epoch 10/100, Train Acc: 68.14%, Test Acc: 74.87%
Epoch 20/100, Train Acc: 75.45%, Test Acc: 75.26%
Epoch 30/100, Train Acc: 79.30%, Test Acc: 76.47%
Epoch 40/100, Train Acc: 83.15%, Test Acc: 74.88%
Epoch 50/100, Train Acc: 86.81%, Test Acc: 77.32%
Epoch 60/100, Train Acc: 91.94%, Test Acc: 73.89%
Epoch 70/100, Train Acc: 95.95%, Test Acc: 74.89%
Epoch 80/100, Train Acc: 97.90%, Test Acc: 74.46%
Epoch 90/100, Train Acc: 98.46%, Test Acc: 73.89%
Epoch 100/100, Train Acc: 98.63%, Test Acc: 73.93%
Best Test Accuracy with FL: 77.98%

--- Training with NCE ---

Epoch 10/100, Train Acc: 46.82%, Test Acc: 48.34%
Epoch 20/100, Train Acc: 51.74%, Test Acc: 52.34%
Epoch 30/100, Train Acc: 54.11%, Test Acc: 51.94%
Epoch 40/100, Train Acc: 56.83%, Test Acc: 55.68%
Epoch 50/100, Train Acc: 58.88%, Test Acc: 57.11%
Epoch 60/100, Train Acc: 61.05%, Test Acc: 59.34%
Epoch 70/100, Train Acc: 63.12%, Test Acc: 59.26%
Epoch 80/100, Train Acc: 64.99%, Test Acc: 60.78%
Epoch 90/100, Train Acc: 65.81%, Test Acc: 61.50%
Epoch 100/100, Train Acc: 65.91%, Test Acc: 61.66%
Best Test Accuracy with NCE: 62.14%

--- Training with NFL ---

Epoch 10/100, Train Acc: 53.96%, Test Acc: 55.97%
Epoch 20/100, Train Acc: 59.20%, Test Acc: 57.62%
Epoch 30/100, Train Acc: 61.72%, Test Acc: 62.02%
Epoch 40/100, Train Acc: 63.80%, Test Acc: 61.28%
Epoch 50/100, Train Acc: 66.20%, Test Acc: 64.25%
Epoch 60/100, Train Acc: 69.18%, Test Acc: 64.95%
Epoch 70/100, Train Acc: 71.47%, Test Acc: 64.51%
Epoch 80/100, Train Acc: 73.52%, Test Acc: 64.40%
Epoch 90/100, Train Acc: 75.01%, Test Acc: 65.87%
Epoch 100/100, Train Acc: 75.31%, Test Acc: 65.36%
Best Test Accuracy with NFL: 66.27%

--- Training with MAE ---

Epoch 10/100, Train Acc: 50.16%, Test Acc: 45.79%
Epoch 20/100, Train Acc: 54.39%, Test Acc: 46.70%
Epoch 30/100, Train Acc: 57.76%, Test Acc: 47.94%
Epoch 40/100, Train Acc: 60.65%, Test Acc: 48.73%
Epoch 50/100, Train Acc: 70.78%, Test Acc: 55.15%
Epoch 60/100, Train Acc: 73.83%, Test Acc: 57.09%
Epoch 70/100, Train Acc: 75.68%, Test Acc: 56.56%
Epoch 80/100, Train Acc: 76.47%, Test Acc: 56.42%
Epoch 90/100, Train Acc: 76.69%, Test Acc: 56.73%
Epoch 100/100, Train Acc: 76.77%, Test Acc: 56.71%
Best Test Accuracy with MAE: 57.21%

--- Training with RCE ---

Epoch 10/100, Train Acc: 44.23%, Test Acc: 39.36%
Epoch 20/100, Train Acc: 53.49%, Test Acc: 48.70%
Epoch 30/100, Train Acc: 58.60%, Test Acc: 50.47%
Epoch 40/100, Train Acc: 61.85%, Test Acc: 53.07%
Epoch 50/100, Train Acc: 64.36%, Test Acc: 53.37%
Epoch 60/100, Train Acc: 67.41%, Test Acc: 57.94%

Epoch 70/100, Train Acc: 71.19%, Test Acc: 58.59%
Epoch 80/100, Train Acc: 73.18%, Test Acc: 58.95%
Epoch 90/100, Train Acc: 73.67%, Test Acc: 58.69%
Epoch 100/100, Train Acc: 73.75%, Test Acc: 58.77%
Best Test Accuracy with RCE: 59.10%

--- Training with APL-NCE+MAE ---

Epoch 10/100, Train Acc: 65.58%, Test Acc: 70.35%
Epoch 20/100, Train Acc: 72.21%, Test Acc: 75.34%
Epoch 30/100, Train Acc: 76.65%, Test Acc: 75.91%
Epoch 40/100, Train Acc: 81.09%, Test Acc: 74.13%
Epoch 50/100, Train Acc: 85.24%, Test Acc: 74.20%
Epoch 60/100, Train Acc: 89.34%, Test Acc: 75.11%
Epoch 70/100, Train Acc: 92.84%, Test Acc: 74.00%
Epoch 80/100, Train Acc: 95.20%, Test Acc: 73.06%
Epoch 90/100, Train Acc: 96.16%, Test Acc: 72.31%
Epoch 100/100, Train Acc: 96.34%, Test Acc: 72.03%
Best Test Accuracy with APL-NCE+MAE: 77.54%

--- Training with APL-NCE+RCE ---

Epoch 10/100, Train Acc: 47.07%, Test Acc: 45.64%
Epoch 20/100, Train Acc: 58.34%, Test Acc: 62.09%
Epoch 30/100, Train Acc: 66.23%, Test Acc: 68.18%
Epoch 40/100, Train Acc: 71.04%, Test Acc: 74.62%
Epoch 50/100, Train Acc: 75.96%, Test Acc: 77.11%
Epoch 60/100, Train Acc: 81.25%, Test Acc: 76.39%
Epoch 70/100, Train Acc: 85.59%, Test Acc: 77.22%
Epoch 80/100, Train Acc: 88.80%, Test Acc: 77.33%
Epoch 90/100, Train Acc: 90.11%, Test Acc: 76.79%
Epoch 100/100, Train Acc: 90.35%, Test Acc: 76.52%
Best Test Accuracy with APL-NCE+RCE: 78.66%

--- Training with APL-NFL+MAE ---

Epoch 10/100, Train Acc: 65.93%, Test Acc: 72.16%
Epoch 20/100, Train Acc: 73.05%, Test Acc: 75.25%
Epoch 30/100, Train Acc: 78.05%, Test Acc: 77.49%
Epoch 40/100, Train Acc: 82.56%, Test Acc: 73.57%
Epoch 50/100, Train Acc: 87.20%, Test Acc: 73.17%
Epoch 60/100, Train Acc: 91.39%, Test Acc: 73.90%
Epoch 70/100, Train Acc: 94.66%, Test Acc: 71.28%
Epoch 80/100, Train Acc: 96.47%, Test Acc: 70.36%
Epoch 90/100, Train Acc: 97.34%, Test Acc: 71.24%
Epoch 100/100, Train Acc: 97.43%, Test Acc: 71.25%
Best Test Accuracy with APL-NFL+MAE: 77.80%

--- Training with APL-NFL+RCE ---

Epoch 10/100, Train Acc: 50.63%, Test Acc: 48.46%
Epoch 20/100, Train Acc: 62.25%, Test Acc: 69.09%
Epoch 30/100, Train Acc: 68.45%, Test Acc: 72.90%
Epoch 40/100, Train Acc: 73.41%, Test Acc: 76.99%
Epoch 50/100, Train Acc: 77.79%, Test Acc: 76.89%
Epoch 60/100, Train Acc: 82.56%, Test Acc: 77.57%
Epoch 70/100, Train Acc: 86.80%, Test Acc: 76.78%
Epoch 80/100, Train Acc: 89.71%, Test Acc: 76.45%
Epoch 90/100, Train Acc: 90.77%, Test Acc: 76.50%
Epoch 100/100, Train Acc: 91.12%, Test Acc: 76.29%
Best Test Accuracy with APL-NFL+RCE: 78.14%

=== Training with asymmetric noise rate $\eta = 0.4$ ===

--- Training with CE ---

Epoch 10/100, Train Acc: 67.86%, Test Acc: 71.05%
Epoch 20/100, Train Acc: 75.40%, Test Acc: 74.70%
Epoch 30/100, Train Acc: 80.76%, Test Acc: 71.32%
Epoch 40/100, Train Acc: 86.51%, Test Acc: 69.57%
Epoch 50/100, Train Acc: 92.46%, Test Acc: 68.56%
Epoch 60/100, Train Acc: 96.83%, Test Acc: 69.90%
Epoch 70/100, Train Acc: 99.11%, Test Acc: 68.27%
Epoch 80/100, Train Acc: 99.60%, Test Acc: 68.08%
Epoch 90/100, Train Acc: 99.73%, Test Acc: 67.71%
Epoch 100/100, Train Acc: 99.75%, Test Acc: 67.92%
Best Test Accuracy with CE: 75.95%

--- Training with FL ---

Epoch 10/100, Train Acc: 65.76%, Test Acc: 66.44%
Epoch 20/100, Train Acc: 72.01%, Test Acc: 69.71%
Epoch 30/100, Train Acc: 75.73%, Test Acc: 68.46%
Epoch 40/100, Train Acc: 79.33%, Test Acc: 73.02%
Epoch 50/100, Train Acc: 83.99%, Test Acc: 71.48%
Epoch 60/100, Train Acc: 89.70%, Test Acc: 70.99%
Epoch 70/100, Train Acc: 94.71%, Test Acc: 70.05%
Epoch 80/100, Train Acc: 97.47%, Test Acc: 69.66%
Epoch 90/100, Train Acc: 98.31%, Test Acc: 68.90%
Epoch 100/100, Train Acc: 98.45%, Test Acc: 69.56%
Best Test Accuracy with FL: 74.64%

--- Training with NCE ---

Epoch 10/100, Train Acc: 47.46%, Test Acc: 40.82%
Epoch 20/100, Train Acc: 51.94%, Test Acc: 48.44%
Epoch 30/100, Train Acc: 54.93%, Test Acc: 41.68%
Epoch 40/100, Train Acc: 57.14%, Test Acc: 49.62%
Epoch 50/100, Train Acc: 58.84%, Test Acc: 48.55%
Epoch 60/100, Train Acc: 60.40%, Test Acc: 54.72%
Epoch 70/100, Train Acc: 62.49%, Test Acc: 55.27%
Epoch 80/100, Train Acc: 63.75%, Test Acc: 57.00%
Epoch 90/100, Train Acc: 64.68%, Test Acc: 56.31%
Epoch 100/100, Train Acc: 64.77%, Test Acc: 56.79%
Best Test Accuracy with NCE: 57.00%

--- Training with NFL ---

Epoch 10/100, Train Acc: 54.33%, Test Acc: 57.08%
Epoch 20/100, Train Acc: 58.91%, Test Acc: 57.87%
Epoch 30/100, Train Acc: 61.70%, Test Acc: 55.48%
Epoch 40/100, Train Acc: 63.57%, Test Acc: 59.05%
Epoch 50/100, Train Acc: 65.90%, Test Acc: 58.94%
Epoch 60/100, Train Acc: 68.26%, Test Acc: 60.92%
Epoch 70/100, Train Acc: 70.70%, Test Acc: 61.39%
Epoch 80/100, Train Acc: 72.73%, Test Acc: 62.30%
Epoch 90/100, Train Acc: 73.65%, Test Acc: 63.39%
Epoch 100/100, Train Acc: 73.93%, Test Acc: 62.78%
Best Test Accuracy with NFL: 63.57%

--- Training with MAE ---

Epoch 10/100, Train Acc: 50.71%, Test Acc: 41.85%
Epoch 20/100, Train Acc: 54.60%, Test Acc: 43.01%
Epoch 30/100, Train Acc: 64.71%, Test Acc: 51.44%

Epoch 40/100, Train Acc: 67.44%, Test Acc: 50.72%
Epoch 50/100, Train Acc: 69.34%, Test Acc: 52.38%
Epoch 60/100, Train Acc: 70.43%, Test Acc: 53.31%
Epoch 70/100, Train Acc: 71.02%, Test Acc: 53.57%
Epoch 80/100, Train Acc: 71.25%, Test Acc: 53.56%
Epoch 90/100, Train Acc: 71.32%, Test Acc: 53.54%
Epoch 100/100, Train Acc: 71.32%, Test Acc: 53.48%
Best Test Accuracy with MAE: 53.74%

--- Training with RCE ---

Epoch 10/100, Train Acc: 35.13%, Test Acc: 30.46%
Epoch 20/100, Train Acc: 48.99%, Test Acc: 37.50%
Epoch 30/100, Train Acc: 59.17%, Test Acc: 50.10%
Epoch 40/100, Train Acc: 63.09%, Test Acc: 51.81%
Epoch 50/100, Train Acc: 66.14%, Test Acc: 53.24%
Epoch 60/100, Train Acc: 68.62%, Test Acc: 53.38%
Epoch 70/100, Train Acc: 69.99%, Test Acc: 53.65%
Epoch 80/100, Train Acc: 71.16%, Test Acc: 53.76%
Epoch 90/100, Train Acc: 74.56%, Test Acc: 54.03%
Epoch 100/100, Train Acc: 75.74%, Test Acc: 54.34%
Best Test Accuracy with RCE: 54.43%

--- Training with APL-NCE+MAE ---

Epoch 10/100, Train Acc: 62.77%, Test Acc: 66.80%
Epoch 20/100, Train Acc: 68.78%, Test Acc: 66.25%
Epoch 30/100, Train Acc: 73.93%, Test Acc: 65.12%
Epoch 40/100, Train Acc: 79.31%, Test Acc: 68.46%
Epoch 50/100, Train Acc: 85.18%, Test Acc: 70.37%
Epoch 60/100, Train Acc: 90.18%, Test Acc: 66.75%
Epoch 70/100, Train Acc: 94.06%, Test Acc: 67.69%
Epoch 80/100, Train Acc: 96.18%, Test Acc: 67.07%
Epoch 90/100, Train Acc: 97.01%, Test Acc: 66.99%
Epoch 100/100, Train Acc: 97.30%, Test Acc: 66.56%
Best Test Accuracy with APL-NCE+MAE: 72.91%

--- Training with APL-NCE+RCE ---

Epoch 10/100, Train Acc: 46.88%, Test Acc: 41.10%
Epoch 20/100, Train Acc: 55.88%, Test Acc: 49.83%
Epoch 30/100, Train Acc: 61.63%, Test Acc: 64.45%
Epoch 40/100, Train Acc: 66.84%, Test Acc: 68.71%
Epoch 50/100, Train Acc: 71.73%, Test Acc: 69.20%
Epoch 60/100, Train Acc: 77.94%, Test Acc: 69.81%
Epoch 70/100, Train Acc: 84.32%, Test Acc: 70.03%
Epoch 80/100, Train Acc: 89.02%, Test Acc: 69.59%
Epoch 90/100, Train Acc: 91.04%, Test Acc: 68.55%
Epoch 100/100, Train Acc: 91.43%, Test Acc: 68.79%
Best Test Accuracy with APL-NCE+RCE: 72.36%

--- Training with APL-NFL+MAE ---

Epoch 10/100, Train Acc: 63.65%, Test Acc: 64.88%
Epoch 20/100, Train Acc: 70.07%, Test Acc: 70.81%
Epoch 30/100, Train Acc: 75.43%, Test Acc: 69.86%
Epoch 40/100, Train Acc: 81.24%, Test Acc: 67.17%
Epoch 50/100, Train Acc: 86.47%, Test Acc: 65.97%
Epoch 60/100, Train Acc: 91.70%, Test Acc: 65.97%
Epoch 70/100, Train Acc: 95.11%, Test Acc: 66.01%
Epoch 80/100, Train Acc: 97.11%, Test Acc: 66.13%
Epoch 90/100, Train Acc: 97.85%, Test Acc: 65.94%

Epoch 100/100, Train Acc: 98.00%, Test Acc: 65.86%
Best Test Accuracy with APL-NFL+MAE: 71.98%

--- Training with APL-NFL+RCE ---

Epoch 10/100, Train Acc: 51.37%, Test Acc: 44.56%
Epoch 20/100, Train Acc: 58.69%, Test Acc: 52.10%
Epoch 30/100, Train Acc: 63.90%, Test Acc: 58.96%
Epoch 40/100, Train Acc: 69.18%, Test Acc: 67.20%
Epoch 50/100, Train Acc: 74.85%, Test Acc: 69.71%
Epoch 60/100, Train Acc: 80.70%, Test Acc: 67.48%
Epoch 70/100, Train Acc: 87.13%, Test Acc: 69.84%
Epoch 80/100, Train Acc: 91.02%, Test Acc: 68.77%
Epoch 90/100, Train Acc: 92.46%, Test Acc: 69.24%
Epoch 100/100, Train Acc: 92.79%, Test Acc: 68.96%
Best Test Accuracy with APL-NFL+RCE: 72.53%
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