Lab 2: Measuring Catastrophic Forgetting in Multi-Layer Perceptrons

Nicole Sylvester

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1 Problem 1: Measuring Catastrophic Forgetting in Multi-layer perceptron

1.1 Unique Seed

For reproducibility, I used the seed **602**, based on my first name.

```python
def name_to_seed(name="Nicole"):
    return sum(ord(c) for c in name)  # Convert name to a unique seed

# Generate seed from your name
seed = name_to_seed("Nicole")

# Set seed for reproducibility
random.seed(seed)            # Python
np.random.seed(seed)         # NumPy
tf.random.set_seed(seed)     # TensorFlow

print(f"Using seed: {seed}")
```

Figure 1: Unique Seed: 602

1.2 Experiment Setup

For this experiment, I used the Permuted MNIST dataset, which consists of 10 sequential tasks where each task applies a different pixel permutation to the original MNIST images. The model is a MLP with 256 hidden units per layer. I tested three different network depths: 2, 3, and 4 layers. To evaluate the impact of different training strategies, I experimented with four loss functions (NLL, L1, L2, and L1+L2) and three optimizers (Adam, SGD, and RMSProp). Additionally, I tested the effect of dropout, using rates of 0.2, 0.3, and 0.5. The training process involved training Task 1 for 50 epochs, while each subsequent task was trained for 20 epochs. Performance was measured using Accuracy (ACC) to track overall performance and Backward Transfer (BWT) to quantify the extent of catastrophic forgetting across tasks.

2 Effect of various loss function on forgetting (NLL, L1, L2, L1+L2)

To analyze how different loss functions impact catastrophic forgetting, I trained a MLP with 2 hidden layers of 256 units each on the Permuted MNIST dataset. The training followed a sequential learning approach across 10 tasks, where each task had a different pixel permutation. For each experiment, the first task was trained for 50 epochs, while each subsequent task was trained for 20 epochs. I evaluated model performance using ACC and BWT.

2.1 Experiment 1: NLL Loss

In this experiment, I used the NLL loss function with the Adam optimizer, 2-layer MLP, and 0.2 dropout.
Results

- Task 1: Reached **98.22%** accuracy.

- Task 2: First signs of forgetting (Task 1 drops to **90.18%**).

- Task 3-5: Performance on Task 1 drops to **34.52%**, showing significant forgetting.

- Task 6-10: The model continues to degrade, with Task 1 accuracy dropping to **15.94%** after all tasks are learned.

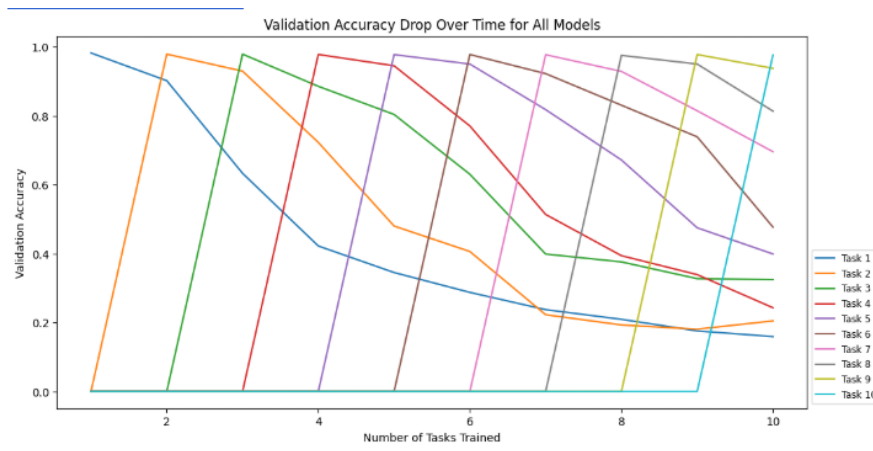- Final performance metrics: ACC: 0.5231 =, BWT: -0.5053

Plot

Figure 2: Experiment 1: NLL Loss

Observations: The NLL loss function led to forgetting of older tasks, as seen in the decline in accuracy. BWT is highly negative (-0.5053), indicating that new task training interfered strongly with previously learned tasks. Despite starting with high accuracy on individual tasks, the model fails to retain past knowledge when learning new tasks.

2.2 Experiment 2: L1 Loss

For this experiment, I trained the same 2-layer MLP with 256 hidden units per layer but used L1 loss. The optimizer remained Adam, and dropout was set to 0.2. The training process followed the same approach: 50 epochs for Task 1 and 20 epochs for each subsequent task.
Results

- Task 1: Initial test accuracy of **98.23%**, similar to the NLL experiment.

- Task 2: Forgetting starts as Task 1 drops to **95.47%**.

- Task 5: Task 1 performance degrades to 55.20%, still higher than NLL.

- Task 10: Task 1 ends up at 28.12%, showing less catastrophic forgetting than NLL.
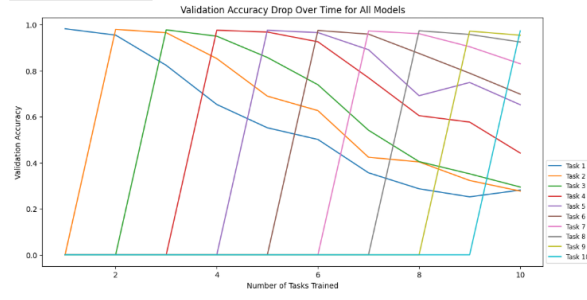
- Final metrics: ACC: 0.6327, BWT: -0.3812

Plot

Figure 3: Experiment 2

Observations: L1 loss performed better than NLL in terms of knowledge retention. BWT (-0.3812) improved, meaning new task training interfered less with previous tasks. The accuracy on older tasks degraded more slowly compared to NLL. However, later tasks were harder to learn than in the NLL experiment.

2.3 Experiment 3: L2 Loss

In this experiment, I used the same 2-layer MLP as in previous trials but changed the loss function to L2 loss while keeping Adam as the optimizer and 0.2 dropout. The training followed the same procedure: 50 epochs for Task 1, and 20 epochs for each subsequent task.

Results

- Task 1 Accuracy started at 98.14%, slightly lower than L1.

- After Task 2, Task 1 dropped to 92.68%, which is better retention than L1.

- After Task 5, Task 1 dropped to 39.01%, significantly better than both NLL and L1.

- After Task 10, Task 1 ended at 17.15%, still better than NLL but worse than L1.
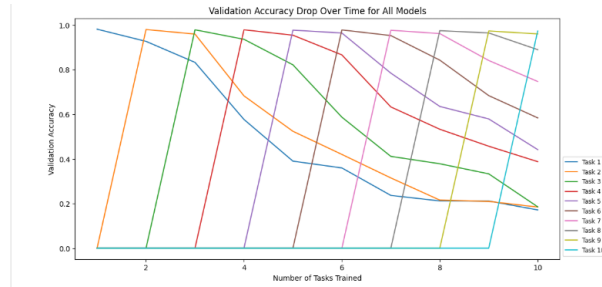
- Final metrics: ACC: 0.5524, BWT: -0.4719

Plot

Figure 4: Experiment 3

Observation: L2 loss performed better than NLL but worse than L1 in retaining knowledge. BTW (-0.4719) is worse than L1 (-0.3812), meaning new tasks interfere more. Accuracy on earlier tasks degraded more slowly compared to NLL but faster than L1. New tasks learned better than with L1.

2.4 Experiment 4: L1 + L2 Loss

In this experiment, I evaluated the impact of combining L1 and L2 loss on catastrophic forgetting. The architecture remained consistent with the previous experiments: a 2-layer MLP, Adam optimizer, and 0.2 dropout. The training procedure followed the same format: Task 1 trained for 50 epochs, while each subsequent task was trained for 20 epochs.

Results

- Task 1 Accuracy started at 98.14%, similar to L2.

- After Task 2, Task 1 dropped to 95.37%, indicating less forgetting than L2.

- After Task 5, Task 1 dropped to 51.39%, significantly better than NLL and L2.

- After Task 10, Task 1 ended at 27.75%, higher than NLL but lower than L1 loss.
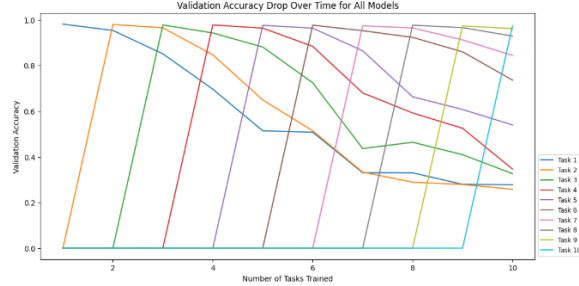
- Final metrics: ACC: 0.6193, BWT: -0.3973

Plot

Figure 5: Experiment 4

Observation: L1 + L2 outperformed both NLL and L2 in retention, meaning it helps mitigate catastrophic forgetting better than either loss function alone. BTW (-0.3973) is better than L2 (-0.4719) but worse than L1 (-0.3812), suggesting that while this combination reduces interference, L1 alone was more effective. Accuracy on earlier tasks degraded more slowly compared to NLL and L2 but still experienced interference. Combining L1 and L2 led to better overall generalization than using either loss function alone, leading to a higher final accuracy.

2.5 Final Comparison of Loss Functions

Metric	NLL Loss	L1 Loss	L2 Loss	L1 + L2 Loss
ACC	0.5231	0.6327	0.5524	0.6193
BWT	-0.5053	-0.3812	-0.4719	-0.3973
Final Task 1 Accuracy	15.94	28.12	17.15	27.75

Table 1: Compare Loss Functions

L1 loss was the best loss function because it resulted in the highest accuracy and least forgetting. I will be using L1 loss for other experiments going forward.

3 Does optimizer plays a role in less forgetting. Test with SGD, Adam, RMSProp and report your findings.

To evaluate the effect of optimizers on forgetting, I conducted experiments using SGD, Adam, and RMSProp while keeping all other factors constant. Below are the results for L1 loss with SGD, Adam, and RMSProp.

3.1 Experiment 6: L1 with SGD

In this experiment, I evaluated the impact of L1 loss with SGD optimizer on catastrophic forgetting. The architecture includes a 2-layer MLP, SGD optimizer, and 0.2 dropout. The training procedure followed the same format: Task 1 trained for 50 epochs, while each subsequent task was trained for 20 epochs.

Results

- Task 1 Accuracy started at 82.58%

- After Task 2, Task 1 dropped to 77.13%

- After Task 5, Task 1 dropped to 74.69%

- After Task 10, Task 1 ended at 68.70%
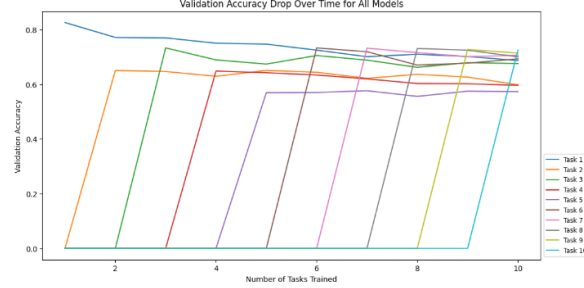
- Final metrics: ACC: 0.6669, BWT: -0.0452

Plot

Figure 6: Experiment 6

Observation SGD preserves past task knowledge better than Adam, as indicated by the smaller drop in Task 1 accuracy over time. Forgetting is minimal compared to Adam, which showed a much sharper decline in Task 1 accuracy. Training is slower, but stability in previous tasks is better.

3.2 Experiment 2: L1 with Adam

In this experiment, I evaluated the impact of L1 loss with Adam optimizer on catastrophic forgetting. The architecture includes a 2-layer MLP, Adam optimizer, and 0.2 dropout. The training procedure followed the same format as above.

Results

- Task 1: Initial test accuracy of 98.23%

- Task 2: Forgetting starts as Task 1 drops to 95.47%.

- Task 5: Task 1 performance degrades to 55.20%

- Task 10: Task 1 ends up at 28.12%
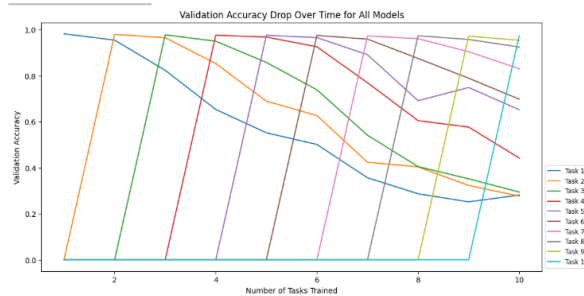
- Final metrics: ACC: 0.6327, BWT: -0.3812

Plot

Figure 7: Experiment 2

Observation: Adam shows a much steeper drop in past task accuracy over time compared to SGD, leading to more catastrophic forgetting. Although it helps in initial learning, its ability to retain past tasks is worse than SGD.

3.3 Experiment 10: L1 with RMSProp

In this experiment, I evaluated the impact of L1 loss with RMSProp optimizer on catastrophic forgetting. The architecture includes a 2-layer MLP, RMSProp optimizer, and 0.2 dropout. The training procedure followed the same format: Task 1 was trained for 50 epochs, while each subsequent task was trained for 20 epochs.

Results

- Task 1: Initial test accuracy of 98.02%

- Task 2: Forgetting starts as Task 1 drops to 95.37%

- Task 5: Task 1 performance degrades to 84.11%

- Task 10: Task 1 ends up at 45.14%

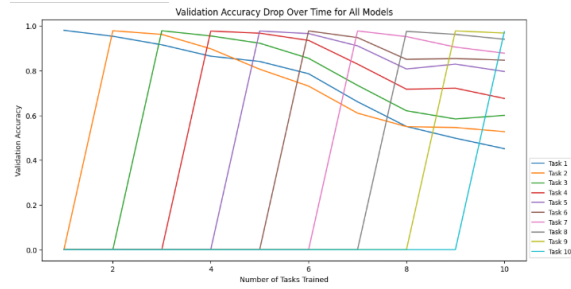- Final metrics: ACC: 0.7658, BWT: -0.2350

Plot

Figure 8: Experiment 10

Observation: RMSProp initially performs well, maintaining high accuracy in early tasks. However, catastrophic forgetting is evident as Task 1 accuracy declines over time. By Task 10, Task 1 accuracy has dropped to 45.14%, which is a large drop compared to SGD. The BWT of -0.2350 indicates newer tasks negatively impact older tasks. Compared to SGD, RMSProp does not preserve past knowledge well.

Final Comparison of Optimizer

Metric	SGD	Adam	RMSProp
ACC	0.6669	0.6327	0.7658
BWT	-0.0452	-0.3812	-0.2350
Final Task 1 Accuracy	68.70	28.12	45.14

Table 2: Compare Optimizers

SGD (L1) is the best overall optimizer for continual learning in this scenario.BWT is closest to 0 (-0.0452), with the least catastrophic forgetting. Final Task 1 accuracy is highest (68.70%), with more knowledge from earlier tasks ACC is slightly lower than RMSProp (0.6669 vs. 0.7658), but the stability in retaining past task knowledge makes it the better choice.

4 Does dropout help? Apply dropout 0.5. Report your observations.

4.1 Experiment 13: L1 with SGD and 0.5 Dropout, depth 2

I evaluated the impact of L1 loss with the SGD optimizer and 0.5 dropout on catastrophic forgetting. The architecture consists of a 2-layer MLP, SGD optimizer, and 0.5 dropout. The training schedule follows the same pattern: Task 1 was trained for 50 epochs, while each subsequent task was trained for 20 epochs. The goal was to analyze whether increasing dropout reduces forgetting.

Results

- Task 1: Initial test accuracy of 74.43%

- Task 2: Forgetting begins as Task 1 drops to 73.79%

- Task 5: Task 1 performance degrades to 72.07%

- Task 10: Task 1 ends up at 68.03%

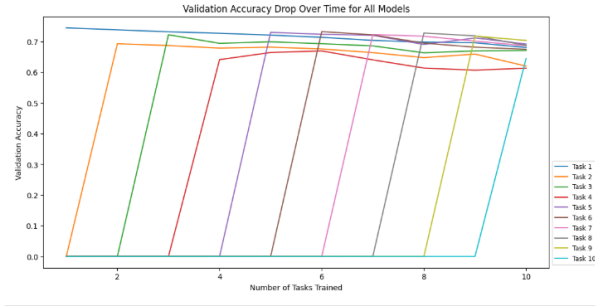- Final metrics: ACC: 0.6671, BWT: -0.0447

Plot

Figure 9: Experiment 13

Observations: Dropout at 0.5 initially preserves accuracy well, maintaining over 70% accuracy for Task 1 even after training later tasks. Catastrophic forgetting is reduced compared to 0.2 dropout, as Task 1 retains 68.03% accuracy by the final task, compared to 66.69% in Experiment 6 (0.2 dropout). BWT is lower (-0.0447) compared to 0.2 dropout (-0.0452), meaning that while forgetting is present, higher dropout does not significantly worsen it. Compared to Experiment 6 (0.2 dropout), accuracy trends remain similar, suggesting that dropout at 0.5 does not drastically improve continual learning performance.

4.2   Experiment 6: L1 with SGD and 0.2 Dropout, depth 2

In this experiment, I evaluated the impact of L1 loss with SGD optimizer on catastrophic forgetting. The architecture includes a 2-layer MLP, SGD optimizer, and 0.2 dropout. The training procedure followed the same format: Task 1 trained for 50 epochs, while each subsequent task was trained for 20 epochs.

Results

- Task 1 Accuracy started at 82.58%

- After Task 2, Task 1 dropped to 77.13%

- After Task 5, Task 1 dropped to 74.69%

- After Task 10, Task 1 ended at 68.70%

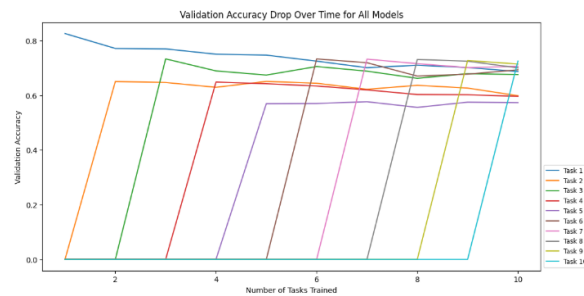- Final metrics: ACC: 0.6669, BWT: -0.0452

Plot

Figure 10: Experiment 6

Observations: Dropout at 0.2 helped maintain an initial high accuracy of 82.58% on Task 1. Forgetting occurred progressively as new tasks were introduced, with Task 1 accuracy dropping to 77.13% after Task 2, then further declining to 74.69% after Task 5. By Task 10, Task 1 retained 68.70% accuracy, slightly higher than Experiment 13 (0.5 dropout).

Final Comparison of Dropout

Metric	0.5 Dropout	0.2 Dropout
ACC	0.6671	0.6669
BWT	-0.0447	-0.0452
Final Task 1 Accuracy	68.03	68.70

Table 3: Compare Dropout

Dropout 0.5 does not dramatically reduce catastrophic forgetting. A dropout of 0.3 might be a better balance, keeping initial accuracy high while preventing overfitting.

5 Effect of depth on forgetting

5.1 Experiment 16: L1 with SGD, Depth 2, Dropout 0.3

In this experiment, I evaluated the impact of L1 loss with SGD optimizer, a 2-layer MLP, and Dropout 0.3 on catastrophic forgetting. The training setup followed the same format as previous experiments

Results

- Task 1 Accuracy started at 73.90%.

- After Task 2, Task 1 slightly declined to 73.33%.

- After Task 5, Task 1 remained relatively stable at 71.40%.

- After Task 10, Task 1 ended at 68.30%.

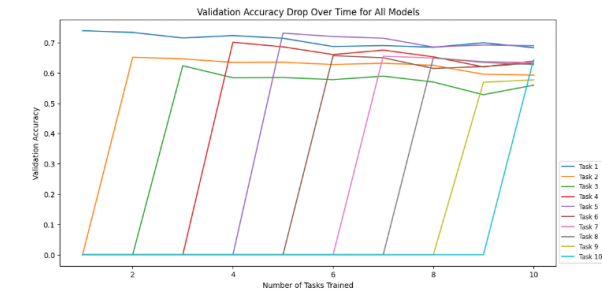- Final Metrics: ACC: 0.6276, BWT: -0.0382

Plot

Figure 11: Experiment 16

Observations: Dropout 0.3 with Depth 2 does not drastically outperform Depth 3 or 4. Compared to Depth 3 (Exp 14, Dropout 0.3): ACC is lower (0.6276 vs. 0.6822), meaning Depth 3 provided better overall performance. Compared to Depth 4 (Exp 15, Dropout 0.3): ACC is also lower (0.6276 vs. 0.6397), suggesting that deeper models may generalize better. BWT (-0.0382) is slightly better than Depth 3 (-0.0594) and Depth 4 (-0.0354). Indicates that Dropout 0.3 helps retain knowledge slightly better in Depth 2 compared to deeper networks.

5.2 Experiment 14: L1 with SGD, Depth 3, Dropout 0.3

I tested a 3-layer network using L1 loss, the SGD optimizer, and 0.3 dropout to evaluate whether an additional hidden layer improves stability and mitigates catastrophic forgetting. The training schedule

remained consistent: Task 1 was trained for 50 epochs, and each subsequent task was trained for 20 epochs.

Results

- Task 1 Accuracy: Initial test accuracy of 74.07%

- Task 2: Forgetting begins, Task 1 drops to 72.56%

- Task 5: Task 1 performance degrades to 70.09%

- Task 10: Task 1 accuracy ends at 61.86%

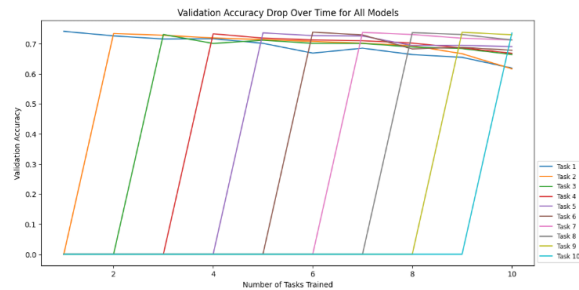- Final Metrics: ACC: 0.6822, BWT: -0.0594

Plot

Figure 12: Experiment 14

Observations: The 3-layer network with 0.3 dropout initially performed well, reaching a higher Task 1 accuracy (74.07%) compared to the 4-layer model in Experiment 15 (67.13%). Forgetting was present but slower, and by Task 10, Task 1 retained 61.86% accuracy. BWT worsened (-0.0594) and ACC (0.6822) was better than in Experiment 15, showing that the 3-layer model performed better across all tasks compared to the 4-layer model.

5.3 Experiment 15: L1 with SGD, Depth 4, Dropout 0.3

I tested a 4-layer network using L1 loss, the SGD optimizer, and 0.3 dropout to see if increasing depth would improve accuracy and mitigate catastrophic forgetting.

Results

- Task 1 Accuracy: Initial test accuracy of 67.13%

- Task 2: Forgetting begins, Task 1 drops to 66.14%

- Task 5: Task 1 performance degrades to 64.26%

- Task 10: Task 1 accuracy ends at 59.01%

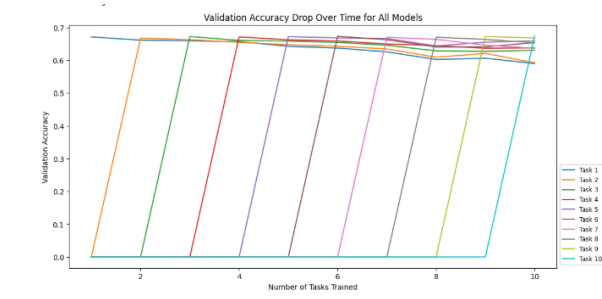- Final Metrics: Final ACC: 0.6397, BWT: -0.0354

Plot

Figure 13: Experiment 15

Observations: The 4-layer network had a lower initial accuracy than the 3-layer model (67.13% vs. 74.07%). Forgetting was slower, with a higher BWT (-0.0354 vs. -0.0594) compared to the 3-layer model. ACC was lower (0.6397 vs. 0.6822), suggesting that a 4-layer model does not perform as well. Depth 4 appears to add unnecessary complexity without significant benefits.

Final Comparison of Depth

Metric	Depth 2	Depth 3	Depth 4
ACC	0.6276	0.6822	0.6397
BWT	-0.0382	-0.0594	-0.0354
Final Task 1 Accuracy	68.30	61.86	59.01

Table 4: Compare Depth

Depth 3 with Dropout 0.3 remains the best setup in terms of overall ACC.

6 Report ACC and BWT.

This is reported for each experiment above as well as in each experiment output below.

7 Outputs From Each Experiment:

```
Experiment 1: NLL, Adam, 2, 0.2
Running Experiment: Loss=NLL, Optimizer=Adam, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 5/50, Loss: 33.4198, Accuracy: 0.9747
Epoch 10/50, Loss: 15.9735, Accuracy: 0.9810
Epoch 15/50, Loss: 9.1977, Accuracy: 0.9806
Epoch 20/50, Loss: 6.2588, Accuracy: 0.9827
Epoch 25/50, Loss: 5.0824, Accuracy: 0.9796
Epoch 30/50, Loss: 4.1499, Accuracy: 0.9831
Epoch 35/50, Loss: 3.9049, Accuracy: 0.9822
Epoch 40/50, Loss: 2.9040, Accuracy: 0.9832
Epoch 45/50, Loss: 3.2570, Accuracy: 0.9812
Epoch 50/50, Loss: 2.6025, Accuracy: 0.9822
Test Accuracy on Task 1: 0.9822

Training on Task 2/10...
Epoch 5/20, Loss: 45.5224, Accuracy: 0.9571
Epoch 10/20, Loss: 25.3290, Accuracy: 0.9337
Epoch 15/20, Loss: 15.6597, Accuracy: 0.9058
Epoch 20/20, Loss: 11.7757, Accuracy: 0.9018
Test Accuracy on Task 1: 0.9018
Test Accuracy on Task 2: 0.9788

Training on Task 3/10...
Epoch 5/20, Loss: 51.8307, Accuracy: 0.7475
Epoch 10/20, Loss: 30.5942, Accuracy: 0.7192
Epoch 15/20, Loss: 18.9471, Accuracy: 0.6876
Epoch 20/20, Loss: 13.6187, Accuracy: 0.6331
Test Accuracy on Task 1: 0.6331
Test Accuracy on Task 2: 0.9295
Test Accuracy on Task 3: 0.9788

Training on Task 4/10...
Epoch 5/20, Loss: 50.9497, Accuracy: 0.5059
Epoch 10/20, Loss: 28.3374, Accuracy: 0.4796
```

```
Epoch 15/20, Loss: 18.5272, Accuracy: 0.4471
Epoch 20/20, Loss: 13.6326, Accuracy: 0.4222
Test Accuracy on Task 1: 0.4222
Test Accuracy on Task 2: 0.7227
Test Accuracy on Task 3: 0.8854
Test Accuracy on Task 4: 0.9778


Training on Task 5/10...
Epoch 5/20, Loss: 51.5336, Accuracy: 0.3820
Epoch 10/20, Loss: 28.7531, Accuracy: 0.3755
Epoch 15/20, Loss: 19.1896, Accuracy: 0.3624
Epoch 20/20, Loss: 13.7758, Accuracy: 0.3452
Test Accuracy on Task 1: 0.3452
Test Accuracy on Task 2: 0.4801
Test Accuracy on Task 3: 0.8038
Test Accuracy on Task 4: 0.9450
Test Accuracy on Task 5: 0.9774


Training on Task 6/10...
Epoch 5/20, Loss: 53.0485, Accuracy: 0.3427
Epoch 10/20, Loss: 30.4651, Accuracy: 0.3109
Epoch 15/20, Loss: 19.6233, Accuracy: 0.3057
Epoch 20/20, Loss: 13.9537, Accuracy: 0.2876
Test Accuracy on Task 1: 0.2876
Test Accuracy on Task 2: 0.4062
Test Accuracy on Task 3: 0.6303
Test Accuracy on Task 4: 0.7704
Test Accuracy on Task 5: 0.9500
Test Accuracy on Task 6: 0.9777


Training on Task 7/10...
Epoch 5/20, Loss: 58.4656, Accuracy: 0.2651
Epoch 10/20, Loss: 33.7006, Accuracy: 0.2630
Epoch 15/20, Loss: 21.9921, Accuracy: 0.2475
Epoch 20/20, Loss: 16.3463, Accuracy: 0.2375
Test Accuracy on Task 1: 0.2375
Test Accuracy on Task 2: 0.2228
Test Accuracy on Task 3: 0.3988
Test Accuracy on Task 4: 0.5137
Test Accuracy on Task 5: 0.8178
Test Accuracy on Task 6: 0.9222
Test Accuracy on Task 7: 0.9771


Training on Task 8/10...
Epoch 5/20, Loss: 64.0321, Accuracy: 0.2158
Epoch 10/20, Loss: 36.0894, Accuracy: 0.2167
Epoch 15/20, Loss: 23.7070, Accuracy: 0.2195
Epoch 20/20, Loss: 17.0028, Accuracy: 0.2094
Test Accuracy on Task 1: 0.2094
Test Accuracy on Task 2: 0.1931
Test Accuracy on Task 3: 0.3760
Test Accuracy on Task 4: 0.3941
Test Accuracy on Task 5: 0.6718
Test Accuracy on Task 6: 0.8306
Test Accuracy on Task 7: 0.9287
Test Accuracy on Task 8: 0.9752


Training on Task 9/10...
```

```
Epoch 5/20, Loss: 62.8066, Accuracy: 0.1996
Epoch 10/20, Loss: 35.6032, Accuracy: 0.1897
Epoch 15/20, Loss: 23.5724, Accuracy: 0.1862
Epoch 20/20, Loss: 18.8717, Accuracy: 0.1758
Test Accuracy on Task 1: 0.1758
Test Accuracy on Task 2: 0.1807
Test Accuracy on Task 3: 0.3274
Test Accuracy on Task 4: 0.3391
Test Accuracy on Task 5: 0.4750
Test Accuracy on Task 6: 0.7389
Test Accuracy on Task 7: 0.8145
Test Accuracy on Task 8: 0.9500
Test Accuracy on Task 9: 0.9776

Training on Task 10/10...
Epoch 5/20, Loss: 68.1230, Accuracy: 0.1666
Epoch 10/20, Loss: 39.5747, Accuracy: 0.1648
Epoch 15/20, Loss: 25.8823, Accuracy: 0.1556
Epoch 20/20, Loss: 18.9816, Accuracy: 0.1594
Test Accuracy on Task 1: 0.1594
Test Accuracy on Task 2: 0.2049
Test Accuracy on Task 3: 0.3245
Test Accuracy on Task 4: 0.2430
Test Accuracy on Task 5: 0.3990
Test Accuracy on Task 6: 0.4770
Test Accuracy on Task 7: 0.6957
Test Accuracy on Task 8: 0.8135
Test Accuracy on Task 9: 0.9376
Test Accuracy on Task 10: 0.9760

Final ACC: 0.5231, BWT: -0.5053
```
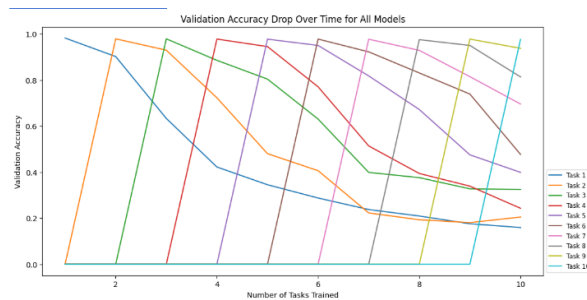

Figure 14: Experiment 1

```
 Experiment 2: L1, Adam, 2, 0.2
Running Experiment: Loss=L1, Optimizer=Adam, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 5/50, Loss: 3.6338, Accuracy: 0.9687
Epoch 10/50, Loss: 2.1270, Accuracy: 0.9745
Epoch 15/50, Loss: 1.5268, Accuracy: 0.9785
Epoch 20/50, Loss: 1.1945, Accuracy: 0.9805
Epoch 25/50, Loss: 1.0001, Accuracy: 0.9795
Epoch 30/50, Loss: 0.8715, Accuracy: 0.9820
Epoch 35/50, Loss: 0.7335, Accuracy: 0.9815
Epoch 40/50, Loss: 0.6623, Accuracy: 0.9826
Epoch 45/50, Loss: 0.6383, Accuracy: 0.9828
```

```
Epoch 50/50, Loss: 0.5643, Accuracy: 0.9823
Test Accuracy on Task 1: 0.9823


Training on Task 2/10...
Epoch 5/20, Loss: 4.3095, Accuracy: 0.9701
Epoch 10/20, Loss: 2.4857, Accuracy: 0.9691
Epoch 15/20, Loss: 1.8507, Accuracy: 0.9617
Epoch 20/20, Loss: 1.4923, Accuracy: 0.9547
Test Accuracy on Task 1: 0.9547
Test Accuracy on Task 2: 0.9797


Training on Task 3/10...
Epoch 5/20, Loss: 4.0037, Accuracy: 0.8916
Epoch 10/20, Loss: 2.6572, Accuracy: 0.8600
Epoch 15/20, Loss: 1.9608, Accuracy: 0.8299
Epoch 20/20, Loss: 1.6080, Accuracy: 0.8234
Test Accuracy on Task 1: 0.8234
Test Accuracy on Task 2: 0.9651
Test Accuracy on Task 3: 0.9775


Training on Task 4/10...
Epoch 5/20, Loss: 4.3726, Accuracy: 0.7128
Epoch 10/20, Loss: 2.8272, Accuracy: 0.6827
Epoch 15/20, Loss: 2.1466, Accuracy: 0.6671
Epoch 20/20, Loss: 1.7669, Accuracy: 0.6533
Test Accuracy on Task 1: 0.6533
Test Accuracy on Task 2: 0.8528
Test Accuracy on Task 3: 0.9500
Test Accuracy on Task 4: 0.9759


Training on Task 5/10...
Epoch 5/20, Loss: 4.3353, Accuracy: 0.5891
Epoch 10/20, Loss: 2.8503, Accuracy: 0.5866
Epoch 15/20, Loss: 2.1527, Accuracy: 0.5590
Epoch 20/20, Loss: 1.6749, Accuracy: 0.5520
Test Accuracy on Task 1: 0.5520
Test Accuracy on Task 2: 0.6895
Test Accuracy on Task 3: 0.8576
Test Accuracy on Task 4: 0.9680
Test Accuracy on Task 5: 0.9757


Training on Task 6/10...
Epoch 5/20, Loss: 4.5222, Accuracy: 0.5458
Epoch 10/20, Loss: 3.0200, Accuracy: 0.5200
Epoch 15/20, Loss: 2.2850, Accuracy: 0.5062
Epoch 20/20, Loss: 1.7879, Accuracy: 0.5012
Test Accuracy on Task 1: 0.5012
Test Accuracy on Task 2: 0.6266
Test Accuracy on Task 3: 0.7390
Test Accuracy on Task 4: 0.9257
Test Accuracy on Task 5: 0.9656
Test Accuracy on Task 6: 0.9749


Training on Task 7/10...
Epoch 5/20, Loss: 4.8612, Accuracy: 0.3666
Epoch 10/20, Loss: 3.3180, Accuracy: 0.3558
Epoch 15/20, Loss: 2.5325, Accuracy: 0.3606
Epoch 20/20, Loss: 2.0174, Accuracy: 0.3564
```

```
Test Accuracy on Task 1: 0.3564
Test Accuracy on Task 2: 0.4240
Test Accuracy on Task 3: 0.5414
Test Accuracy on Task 4: 0.7694
Test Accuracy on Task 5: 0.8913
Test Accuracy on Task 6: 0.9590
Test Accuracy on Task 7: 0.9728


Training on Task 8/10...
Epoch 5/20, Loss: 15.0733, Accuracy: 0.3027
Epoch 10/20, Loss: 3.6520, Accuracy: 0.3221
Epoch 15/20, Loss: 2.6862, Accuracy: 0.3073
Epoch 20/20, Loss: 2.1719, Accuracy: 0.2869
Test Accuracy on Task 1: 0.2869
Test Accuracy on Task 2: 0.4037
Test Accuracy on Task 3: 0.4050
Test Accuracy on Task 4: 0.6047
Test Accuracy on Task 5: 0.6914
Test Accuracy on Task 6: 0.8751
Test Accuracy on Task 7: 0.9608
Test Accuracy on Task 8: 0.9736


Training on Task 9/10...
Epoch 5/20, Loss: 5.3706, Accuracy: 0.2966
Epoch 10/20, Loss: 3.5501, Accuracy: 0.2802
Epoch 15/20, Loss: 2.7652, Accuracy: 0.2646
Epoch 20/20, Loss: 2.2878, Accuracy: 0.2519
Test Accuracy on Task 1: 0.2519
Test Accuracy on Task 2: 0.3230
Test Accuracy on Task 3: 0.3519
Test Accuracy on Task 4: 0.5767
Test Accuracy on Task 5: 0.7489
Test Accuracy on Task 6: 0.7893
Test Accuracy on Task 7: 0.9043
Test Accuracy on Task 8: 0.9576
Test Accuracy on Task 9: 0.9720


Training on Task 10/10...
Epoch 5/20, Loss: 5.3046, Accuracy: 0.2871
Epoch 10/20, Loss: 3.5723, Accuracy: 0.2743
Epoch 15/20, Loss: 2.7201, Accuracy: 0.2692
Epoch 20/20, Loss: 2.2835, Accuracy: 0.2812
Test Accuracy on Task 1: 0.2812
Test Accuracy on Task 2: 0.2768
Test Accuracy on Task 3: 0.2945
Test Accuracy on Task 4: 0.4422
Test Accuracy on Task 5: 0.6521
Test Accuracy on Task 6: 0.6981
Test Accuracy on Task 7: 0.8302
Test Accuracy on Task 8: 0.9247
Test Accuracy on Task 9: 0.9542
Test Accuracy on Task 10: 0.9732


Final: ACC: 0.6327, BWT: -0.3812
```
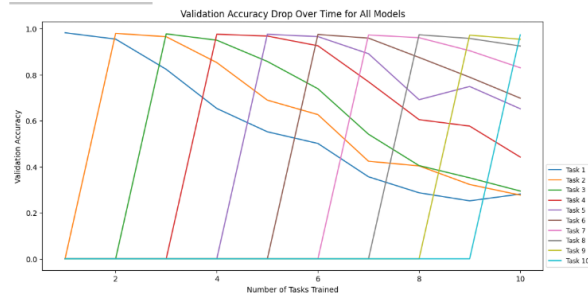
Figure 15: Experiment 2

```
Experiment 3: L2, Adam, 2, 0.2
Running Experiment: Loss=L2, Optimizer=Adam, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 5/50, Loss: 1.7228, Accuracy: 0.9776
Epoch 10/50, Loss: 0.9412, Accuracy: 0.9807
Epoch 15/50, Loss: 0.6546, Accuracy: 0.9814
Epoch 20/50, Loss: 0.4962, Accuracy: 0.9816
Epoch 25/50, Loss: 0.4253, Accuracy: 0.9815
Epoch 30/50, Loss: 0.3321, Accuracy: 0.9820
Epoch 35/50, Loss: 0.3006, Accuracy: 0.9842
Epoch 40/50, Loss: 0.2933, Accuracy: 0.9826
Epoch 45/50, Loss: 0.2402, Accuracy: 0.9818
Epoch 50/50, Loss: 0.2612, Accuracy: 0.9814
Test Accuracy on Task 1: 0.9814


Training on Task 2/10...
Epoch 5/20, Loss: 2.2152, Accuracy: 0.9663
Epoch 10/20, Loss: 1.3777, Accuracy: 0.9545
Epoch 15/20, Loss: 1.0031, Accuracy: 0.9488
Epoch 20/20, Loss: 0.7825, Accuracy: 0.9268
Test Accuracy on Task 1: 0.9268
Test Accuracy on Task 2: 0.9799


Training on Task 3/10...
Epoch 5/20, Loss: 2.3712, Accuracy: 0.8794
Epoch 10/20, Loss: 1.5262, Accuracy: 0.8660
Epoch 15/20, Loss: 1.1554, Accuracy: 0.8527
Epoch 20/20, Loss: 0.9310, Accuracy: 0.8326
Test Accuracy on Task 1: 0.8326
Test Accuracy on Task 2: 0.9594
Test Accuracy on Task 3: 0.9787


Training on Task 4/10...
Epoch 5/20, Loss: 2.8096, Accuracy: 0.7158
Epoch 10/20, Loss: 1.7837, Accuracy: 0.6509
Epoch 15/20, Loss: 1.3160, Accuracy: 0.6242
Epoch 20/20, Loss: 1.0583, Accuracy: 0.5769
Test Accuracy on Task 1: 0.5769
Test Accuracy on Task 2: 0.6827
Test Accuracy on Task 3: 0.9361
Test Accuracy on Task 4: 0.9787


Training on Task 5/10...
Epoch 5/20, Loss: 2.6230, Accuracy: 0.4406
Epoch 10/20, Loss: 1.7076, Accuracy: 0.4097
```

```
Epoch 15/20, Loss: 1.2888, Accuracy: 0.4078
Epoch 20/20, Loss: 1.0426, Accuracy: 0.3901
Test Accuracy on Task 1: 0.3901
Test Accuracy on Task 2: 0.5239
Test Accuracy on Task 3: 0.8217
Test Accuracy on Task 4: 0.9544
Test Accuracy on Task 5: 0.9771


Training on Task 6/10...
Epoch 5/20, Loss: 2.8590, Accuracy: 0.4151
Epoch 10/20, Loss: 1.9291, Accuracy: 0.3891
Epoch 15/20, Loss: 1.4039, Accuracy: 0.3772
Epoch 20/20, Loss: 1.1273, Accuracy: 0.3596
Test Accuracy on Task 1: 0.3596
Test Accuracy on Task 2: 0.4202
Test Accuracy on Task 3: 0.5871
Test Accuracy on Task 4: 0.8662
Test Accuracy on Task 5: 0.9642
Test Accuracy on Task 6: 0.9781


Training on Task 7/10...
Epoch 5/20, Loss: 3.1095, Accuracy: 0.2639
Epoch 10/20, Loss: 2.0030, Accuracy: 0.2544
Epoch 15/20, Loss: 1.4658, Accuracy: 0.2672
Epoch 20/20, Loss: 1.1621, Accuracy: 0.2365
Test Accuracy on Task 1: 0.2365
Test Accuracy on Task 2: 0.3149
Test Accuracy on Task 3: 0.4114
Test Accuracy on Task 4: 0.6330
Test Accuracy on Task 5: 0.7845
Test Accuracy on Task 6: 0.9528
Test Accuracy on Task 7: 0.9766


Training on Task 8/10...
Epoch 5/20, Loss: 3.1022, Accuracy: 0.2371
Epoch 10/20, Loss: 2.0612, Accuracy: 0.2239
Epoch 15/20, Loss: 1.6144, Accuracy: 0.2222
Epoch 20/20, Loss: 1.3141, Accuracy: 0.2118
Test Accuracy on Task 1: 0.2118
Test Accuracy on Task 2: 0.2155
Test Accuracy on Task 3: 0.3784
Test Accuracy on Task 4: 0.5330
Test Accuracy on Task 5: 0.6352
Test Accuracy on Task 6: 0.8427
Test Accuracy on Task 7: 0.9617
Test Accuracy on Task 8: 0.9746


Training on Task 9/10...
Epoch 5/20, Loss: 3.2466, Accuracy: 0.2190
Epoch 10/20, Loss: 2.2006, Accuracy: 0.2143
Epoch 15/20, Loss: 1.6542, Accuracy: 0.2132
Epoch 20/20, Loss: 1.3060, Accuracy: 0.2114
Test Accuracy on Task 1: 0.2114
Test Accuracy on Task 2: 0.2097
Test Accuracy on Task 3: 0.3331
Test Accuracy on Task 4: 0.4569
Test Accuracy on Task 5: 0.5792
Test Accuracy on Task 6: 0.6837
```

```
Test Accuracy on Task 7: 0.8411
Test Accuracy on Task 8: 0.9645
Test Accuracy on Task 9: 0.9734

Training on Task 10/10...
Epoch 5/20, Loss: 3.3906, Accuracy: 0.1919
Epoch 10/20, Loss: 2.2546, Accuracy: 0.1765
Epoch 15/20, Loss: 1.6100, Accuracy: 0.1629
Epoch 20/20, Loss: 1.2943, Accuracy: 0.1715
Test Accuracy on Task 1: 0.1715
Test Accuracy on Task 2: 0.1843
Test Accuracy on Task 3: 0.1854
Test Accuracy on Task 4: 0.3878
Test Accuracy on Task 5: 0.4417
Test Accuracy on Task 6: 0.5839
Test Accuracy on Task 7: 0.7469
Test Accuracy on Task 8: 0.8897
Test Accuracy on Task 9: 0.9602
Test Accuracy on Task 10: 0.9729

Final: ACC: 0.5524, BWT: -0.4719
```
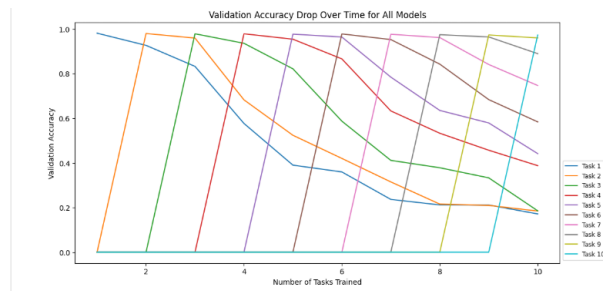

Figure 16: Experiment 3

```
Experiment 4: L1+L2, Adam, 2, 0.2
Running Experiment: Loss=L1+L2, Optimizer=Adam, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 5/50, Loss: 5.5793, Accuracy: 0.9725
Epoch 10/50, Loss: 3.2458, Accuracy: 0.9762
Epoch 15/50, Loss: 2.3477, Accuracy: 0.9810
Epoch 20/50, Loss: 1.8351, Accuracy: 0.9814
Epoch 25/50, Loss: 1.4824, Accuracy: 0.9829
Epoch 30/50, Loss: 1.2938, Accuracy: 0.9827
Epoch 35/50, Loss: 1.1187, Accuracy: 0.9810
Epoch 40/50, Loss: 1.0127, Accuracy: 0.9823
Epoch 45/50, Loss: 0.9641, Accuracy: 0.9813
Epoch 50/50, Loss: 0.8626, Accuracy: 0.9814
Test Accuracy on Task 1: 0.9814

Training on Task 2/10...
Epoch 5/20, Loss: 5.8779, Accuracy: 0.9752
Epoch 10/20, Loss: 3.7546, Accuracy: 0.9724
Epoch 15/20, Loss: 2.7444, Accuracy: 0.9636
Epoch 20/20, Loss: 2.3772, Accuracy: 0.9537
Test Accuracy on Task 1: 0.9537
Test Accuracy on Task 2: 0.9801
```

```
Training on Task 3/10...
Epoch 5/20, Loss: 6.5038, Accuracy: 0.9011
Epoch 10/20, Loss: 4.2038, Accuracy: 0.8822
Epoch 15/20, Loss: 3.2348, Accuracy: 0.8665
Epoch 20/20, Loss: 2.4999, Accuracy: 0.8512
Test Accuracy on Task 1: 0.8512
Test Accuracy on Task 2: 0.9651
Test Accuracy on Task 3: 0.9778

Training on Task 4/10...
Epoch 5/20, Loss: 7.0945, Accuracy: 0.7745
Epoch 10/20, Loss: 4.7474, Accuracy: 0.7548
Epoch 15/20, Loss: 3.5383, Accuracy: 0.7325
Epoch 20/20, Loss: 2.7499, Accuracy: 0.6964
Test Accuracy on Task 1: 0.6964
Test Accuracy on Task 2: 0.8471
Test Accuracy on Task 3: 0.9426
Test Accuracy on Task 4: 0.9778

Training on Task 5/10...
Epoch 5/20, Loss: 7.2157, Accuracy: 0.5689
Epoch 10/20, Loss: 5.0008, Accuracy: 0.5118
Epoch 15/20, Loss: 3.8069, Accuracy: 0.5338
Epoch 20/20, Loss: 3.0575, Accuracy: 0.5139
Test Accuracy on Task 1: 0.5139
Test Accuracy on Task 2: 0.6489
Test Accuracy on Task 3: 0.8810
Test Accuracy on Task 4: 0.9638
Test Accuracy on Task 5: 0.9761

Training on Task 6/10...
Epoch 5/20, Loss: 8.0647, Accuracy: 0.5223
Epoch 10/20, Loss: 5.2845, Accuracy: 0.5194
Epoch 15/20, Loss: 4.0016, Accuracy: 0.5145
Epoch 20/20, Loss: 3.1997, Accuracy: 0.5079
Test Accuracy on Task 1: 0.5079
Test Accuracy on Task 2: 0.5139
Test Accuracy on Task 3: 0.7244
Test Accuracy on Task 4: 0.8839
Test Accuracy on Task 5: 0.9638
Test Accuracy on Task 6: 0.9768

Training on Task 7/10...
Epoch 5/20, Loss: 8.1029, Accuracy: 0.4147
Epoch 10/20, Loss: 5.3311, Accuracy: 0.3782
Epoch 15/20, Loss: 4.1211, Accuracy: 0.3564
Epoch 20/20, Loss: 3.2788, Accuracy: 0.3303
Test Accuracy on Task 1: 0.3303
Test Accuracy on Task 2: 0.3331
Test Accuracy on Task 3: 0.4362
Test Accuracy on Task 4: 0.6798
Test Accuracy on Task 5: 0.8644
Test Accuracy on Task 6: 0.9525
Test Accuracy on Task 7: 0.9740

Training on Task 8/10...
Epoch 5/20, Loss: 8.6637, Accuracy: 0.3471
Epoch 10/20, Loss: 5.7514, Accuracy: 0.3256
```

```
Epoch 15/20, Loss: 4.4108, Accuracy: 0.3419
Epoch 20/20, Loss: 3.6125, Accuracy: 0.3298
Test Accuracy on Task 1: 0.3298
Test Accuracy on Task 2: 0.2887
Test Accuracy on Task 3: 0.4638
Test Accuracy on Task 4: 0.5922
Test Accuracy on Task 5: 0.6631
Test Accuracy on Task 6: 0.9234
Test Accuracy on Task 7: 0.9646
Test Accuracy on Task 8: 0.9767

Training on Task 9/10...
Epoch 5/20, Loss: 8.8674, Accuracy: 0.3257
Epoch 10/20, Loss: 6.1069, Accuracy: 0.3134
Epoch 15/20, Loss: 4.6593, Accuracy: 0.2822
Epoch 20/20, Loss: 3.7296, Accuracy: 0.2795
Test Accuracy on Task 1: 0.2795
Test Accuracy on Task 2: 0.2788
Test Accuracy on Task 3: 0.4093
Test Accuracy on Task 4: 0.5250
Test Accuracy on Task 5: 0.6074
Test Accuracy on Task 6: 0.8599
Test Accuracy on Task 7: 0.9121
Test Accuracy on Task 8: 0.9660
Test Accuracy on Task 9: 0.9736

Training on Task 10/10...
Epoch 5/20, Loss: 9.1037, Accuracy: 0.3027
Epoch 10/20, Loss: 6.1650, Accuracy: 0.2985
Epoch 15/20, Loss: 4.6300, Accuracy: 0.2895
Epoch 20/20, Loss: 3.9005, Accuracy: 0.2775
Test Accuracy on Task 1: 0.2775
Test Accuracy on Task 2: 0.2578
Test Accuracy on Task 3: 0.3262
Test Accuracy on Task 4: 0.3463
Test Accuracy on Task 5: 0.5396
Test Accuracy on Task 6: 0.7361
Test Accuracy on Task 7: 0.8442
Test Accuracy on Task 8: 0.9290
Test Accuracy on Task 9: 0.9618
Test Accuracy on Task 10: 0.9742

Final: ACC: 0.6193, BWT: -0.3973
```
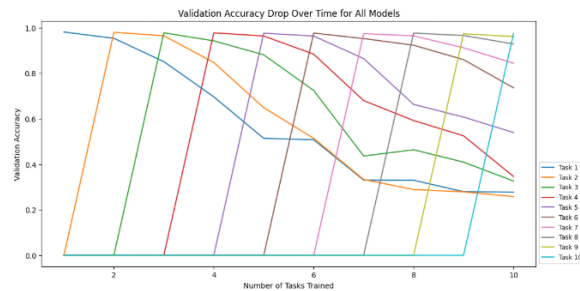

Figure 17: Experiment 4

```
Experiment 5: NLL, SGD, 2, 0.2
```

```
Running Experiment: Loss=NLL, Optimizer=SGD, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 541.0858, Accuracy: 0.8642
Epoch 5/50, Loss: 181.1844, Accuracy: 0.9126
Epoch 10/50, Loss: 142.9404, Accuracy: 0.9276
Epoch 15/50, Loss: 123.7391, Accuracy: 0.9359
Epoch 20/50, Loss: 108.7378, Accuracy: 0.9445
Epoch 25/50, Loss: 97.8537, Accuracy: 0.9483
Epoch 30/50, Loss: 89.1385, Accuracy: 0.9521
Epoch 35/50, Loss: 82.6979, Accuracy: 0.9556
Epoch 40/50, Loss: 76.9223, Accuracy: 0.9590
Epoch 45/50, Loss: 72.8480, Accuracy: 0.9612
Epoch 50/50, Loss: 67.3546, Accuracy: 0.9635
Test Accuracy on Task 1: 0.9635


Training on Task 2/10...
Epoch 1/20, Loss: 439.4988, Accuracy: 0.9571
Epoch 5/20, Loss: 152.3452, Accuracy: 0.9547
Epoch 10/20, Loss: 118.5112, Accuracy: 0.9535
Epoch 15/20, Loss: 100.5799, Accuracy: 0.9515
Epoch 20/20, Loss: 88.6782, Accuracy: 0.9495
Test Accuracy on Task 1: 0.9495
Test Accuracy on Task 2: 0.9531


Training on Task 3/10...
Epoch 1/20, Loss: 408.6688, Accuracy: 0.9448
Epoch 5/20, Loss: 142.4370, Accuracy: 0.9348
Epoch 10/20, Loss: 110.0182, Accuracy: 0.9300
Epoch 15/20, Loss: 92.6162, Accuracy: 0.9265
Epoch 20/20, Loss: 82.5592, Accuracy: 0.9248
Test Accuracy on Task 1: 0.9248
Test Accuracy on Task 2: 0.9415
Test Accuracy on Task 3: 0.9558


Training on Task 4/10...
Epoch 1/20, Loss: 416.8607, Accuracy: 0.9259
Epoch 5/20, Loss: 142.5466, Accuracy: 0.9152
Epoch 10/20, Loss: 108.9546, Accuracy: 0.9109
Epoch 15/20, Loss: 91.4859, Accuracy: 0.9084
Epoch 20/20, Loss: 81.5897, Accuracy: 0.9056
Test Accuracy on Task 1: 0.9056
Test Accuracy on Task 2: 0.9271
Test Accuracy on Task 3: 0.9205
Test Accuracy on Task 4: 0.9571


Training on Task 5/10...
Epoch 1/20, Loss: 387.7770, Accuracy: 0.9069
Epoch 5/20, Loss: 136.0240, Accuracy: 0.8997
Epoch 10/20, Loss: 104.5981, Accuracy: 0.8954
Epoch 15/20, Loss: 88.8870, Accuracy: 0.8900
Epoch 20/20, Loss: 78.3966, Accuracy: 0.8831
Test Accuracy on Task 1: 0.8831
Test Accuracy on Task 2: 0.8866
Test Accuracy on Task 3: 0.9169
Test Accuracy on Task 4: 0.9470
Test Accuracy on Task 5: 0.9572
```

```
Training on Task 6/10...
Epoch 1/20, Loss: 392.4541, Accuracy: 0.8941
Epoch 5/20, Loss: 135.3727, Accuracy: 0.8830
Epoch 10/20, Loss: 102.5208, Accuracy: 0.8699
Epoch 15/20, Loss: 87.1145, Accuracy: 0.8598
Epoch 20/20, Loss: 76.8712, Accuracy: 0.8498
Test Accuracy on Task 1: 0.8498
Test Accuracy on Task 2: 0.8525
Test Accuracy on Task 3: 0.8773
Test Accuracy on Task 4: 0.9261
Test Accuracy on Task 5: 0.9500
Test Accuracy on Task 6: 0.9589

Training on Task 7/10...
Epoch 1/20, Loss: 412.9687, Accuracy: 0.8450
Epoch 5/20, Loss: 135.8630, Accuracy: 0.8223
Epoch 10/20, Loss: 104.0845, Accuracy: 0.8062
Epoch 15/20, Loss: 88.2551, Accuracy: 0.7937
Epoch 20/20, Loss: 76.8171, Accuracy: 0.7826
Test Accuracy on Task 1: 0.7826
Test Accuracy on Task 2: 0.7128
Test Accuracy on Task 3: 0.8325
Test Accuracy on Task 4: 0.8935
Test Accuracy on Task 5: 0.9334
Test Accuracy on Task 6: 0.9397
Test Accuracy on Task 7: 0.9582

Training on Task 8/10...
Epoch 1/20, Loss: 386.9594, Accuracy: 0.7598
Epoch 5/20, Loss: 135.8591, Accuracy: 0.7402
Epoch 10/20, Loss: 101.9996, Accuracy: 0.7273
Epoch 15/20, Loss: 86.3633, Accuracy: 0.7186
Epoch 20/20, Loss: 76.2490, Accuracy: 0.7149
Test Accuracy on Task 1: 0.7149
Test Accuracy on Task 2: 0.6646
Test Accuracy on Task 3: 0.7507
Test Accuracy on Task 4: 0.8682
Test Accuracy on Task 5: 0.8975
Test Accuracy on Task 6: 0.8984
Test Accuracy on Task 7: 0.9495
Test Accuracy on Task 8: 0.9583

Training on Task 9/10...
Epoch 1/20, Loss: 400.1560, Accuracy: 0.7935
Epoch 5/20, Loss: 133.6334, Accuracy: 0.7654
Epoch 10/20, Loss: 100.6293, Accuracy: 0.7461
Epoch 15/20, Loss: 85.0453, Accuracy: 0.7286
Epoch 20/20, Loss: 75.7124, Accuracy: 0.7181
Test Accuracy on Task 1: 0.7181
Test Accuracy on Task 2: 0.6652
Test Accuracy on Task 3: 0.7123
Test Accuracy on Task 4: 0.8555
Test Accuracy on Task 5: 0.8949
Test Accuracy on Task 6: 0.8988
Test Accuracy on Task 7: 0.9376
Test Accuracy on Task 8: 0.9461
Test Accuracy on Task 9: 0.9619
```

```
Training on Task 10/10...
Epoch 1/20, Loss: 392.8200, Accuracy: 0.7950
Epoch 5/20, Loss: 131.6836, Accuracy: 0.7593
Epoch 10/20, Loss: 98.1152, Accuracy: 0.7306
Epoch 15/20, Loss: 83.0229, Accuracy: 0.7140
Epoch 20/20, Loss: 73.5145, Accuracy: 0.7024
Test Accuracy on Task 1: 0.7024
Test Accuracy on Task 2: 0.6264
Test Accuracy on Task 3: 0.6996
Test Accuracy on Task 4: 0.8480
Test Accuracy on Task 5: 0.8856
Test Accuracy on Task 6: 0.9105
Test Accuracy on Task 7: 0.9244
Test Accuracy on Task 8: 0.9315
Test Accuracy on Task 9: 0.9507
Test Accuracy on Task 10: 0.9622

Final: ACC: 0.8441, BWT: -0.1272
```
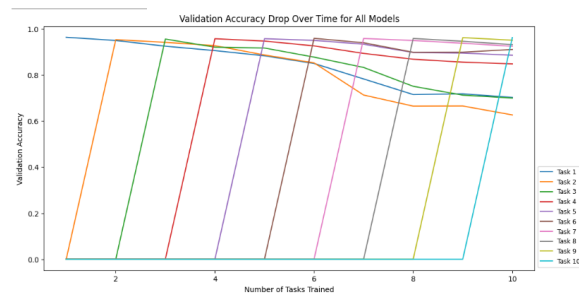

Figure 18: Experiment 5

```
Experiment 6: L1, SGD, 2, 0.2
Running Experiment: Loss=L1, Optimizer=SGD, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 83.7433, Accuracy: 0.1504
Epoch 5/50, Loss: 75.4363, Accuracy: 0.3693
Epoch 10/50, Loss: 58.2385, Accuracy: 0.5042
Epoch 15/50, Loss: 45.8506, Accuracy: 0.6707
Epoch 20/50, Loss: 38.3007, Accuracy: 0.7127
Epoch 25/50, Loss: 34.7013, Accuracy: 0.7232
Epoch 30/50, Loss: 32.3943, Accuracy: 0.7295
Epoch 35/50, Loss: 28.5333, Accuracy: 0.8069
Epoch 40/50, Loss: 26.0677, Accuracy: 0.8169
Epoch 45/50, Loss: 24.4169, Accuracy: 0.8237
Epoch 50/50, Loss: 23.3755, Accuracy: 0.8258
Test Accuracy on Task 1: 0.8258

Training on Task 2/10...
Epoch 1/20, Loss: 84.4675, Accuracy: 0.8252
Epoch 5/20, Loss: 62.8919, Accuracy: 0.8070
Epoch 10/20, Loss: 46.7905, Accuracy: 0.7862
Epoch 15/20, Loss: 40.7391, Accuracy: 0.7763
Epoch 20/20, Loss: 38.1539, Accuracy: 0.7713
Test Accuracy on Task 1: 0.7713
Test Accuracy on Task 2: 0.6504
```

```
Training on Task 3/10...
Epoch 1/20, Loss: 80.5165, Accuracy: 0.7715
Epoch 5/20, Loss: 59.3549, Accuracy: 0.7618
Epoch 10/20, Loss: 41.0935, Accuracy: 0.7717
Epoch 15/20, Loss: 34.1511, Accuracy: 0.7707
Epoch 20/20, Loss: 31.3080, Accuracy: 0.7696
Test Accuracy on Task 1: 0.7696
Test Accuracy on Task 2: 0.6468
Test Accuracy on Task 3: 0.7331


Training on Task 4/10...
Epoch 1/20, Loss: 83.8367, Accuracy: 0.7677
Epoch 5/20, Loss: 64.7913, Accuracy: 0.7507
Epoch 10/20, Loss: 49.8889, Accuracy: 0.7425
Epoch 15/20, Loss: 41.3130, Accuracy: 0.7467
Epoch 20/20, Loss: 38.5572, Accuracy: 0.7503
Test Accuracy on Task 1: 0.7503
Test Accuracy on Task 2: 0.6292
Test Accuracy on Task 3: 0.6892
Test Accuracy on Task 4: 0.6483


Training on Task 5/10...
Epoch 1/20, Loss: 78.1592, Accuracy: 0.7559
Epoch 5/20, Loss: 54.6583, Accuracy: 0.7461
Epoch 10/20, Loss: 47.2529, Accuracy: 0.7409
Epoch 15/20, Loss: 44.9722, Accuracy: 0.7425
Epoch 20/20, Loss: 43.7329, Accuracy: 0.7469
Test Accuracy on Task 1: 0.7469
Test Accuracy on Task 2: 0.6508
Test Accuracy on Task 3: 0.6739
Test Accuracy on Task 4: 0.6423
Test Accuracy on Task 5: 0.5694


Training on Task 6/10...
Epoch 1/20, Loss: 81.0634, Accuracy: 0.7469
Epoch 5/20, Loss: 55.6127, Accuracy: 0.7203
Epoch 10/20, Loss: 41.7620, Accuracy: 0.7155
Epoch 15/20, Loss: 38.1406, Accuracy: 0.7233
Epoch 20/20, Loss: 31.2981, Accuracy: 0.7249
Test Accuracy on Task 1: 0.7249
Test Accuracy on Task 2: 0.6441
Test Accuracy on Task 3: 0.7052
Test Accuracy on Task 4: 0.6340
Test Accuracy on Task 5: 0.5701
Test Accuracy on Task 6: 0.7330


Training on Task 7/10...
Epoch 1/20, Loss: 80.6611, Accuracy: 0.7275
Epoch 5/20, Loss: 54.1028, Accuracy: 0.7195
Epoch 10/20, Loss: 41.6021, Accuracy: 0.7126
Epoch 15/20, Loss: 38.0350, Accuracy: 0.7082
Epoch 20/20, Loss: 31.4314, Accuracy: 0.7009
Test Accuracy on Task 1: 0.7009
Test Accuracy on Task 2: 0.6219
Test Accuracy on Task 3: 0.6883
Test Accuracy on Task 4: 0.6197
Test Accuracy on Task 5: 0.5765
Test Accuracy on Task 6: 0.7191
```

```
Test Accuracy on Task 7: 0.7322

Training on Task 8/10...
Epoch 1/20, Loss: 80.9889, Accuracy: 0.7157
Epoch 5/20, Loss: 53.5170, Accuracy: 0.7026
Epoch 10/20, Loss: 41.1679, Accuracy: 0.7079
Epoch 15/20, Loss: 32.6425, Accuracy: 0.7110
Epoch 20/20, Loss: 30.2075, Accuracy: 0.7099
Test Accuracy on Task 1: 0.7099
Test Accuracy on Task 2: 0.6365
Test Accuracy on Task 3: 0.6620
Test Accuracy on Task 4: 0.6028
Test Accuracy on Task 5: 0.5558
Test Accuracy on Task 6: 0.6702
Test Accuracy on Task 7: 0.7157
Test Accuracy on Task 8: 0.7310

Training on Task 9/10...
Epoch 1/20, Loss: 79.2418, Accuracy: 0.7151
Epoch 5/20, Loss: 60.1235, Accuracy: 0.7217
Epoch 10/20, Loss: 52.2180, Accuracy: 0.7268
Epoch 15/20, Loss: 37.1282, Accuracy: 0.7018
Epoch 20/20, Loss: 31.8554, Accuracy: 0.7016
Test Accuracy on Task 1: 0.7016
Test Accuracy on Task 2: 0.6264
Test Accuracy on Task 3: 0.6791
Test Accuracy on Task 4: 0.6020
Test Accuracy on Task 5: 0.5749
Test Accuracy on Task 6: 0.6773
Test Accuracy on Task 7: 0.7013
Test Accuracy on Task 8: 0.7247
Test Accuracy on Task 9: 0.7273

Training on Task 10/10...
Epoch 1/20, Loss: 82.3535, Accuracy: 0.7018
Epoch 5/20, Loss: 54.9297, Accuracy: 0.7055
Epoch 10/20, Loss: 41.9333, Accuracy: 0.7021
Epoch 15/20, Loss: 38.2776, Accuracy: 0.6999
Epoch 20/20, Loss: 32.0275, Accuracy: 0.6870
Test Accuracy on Task 1: 0.6870
Test Accuracy on Task 2: 0.5985
Test Accuracy on Task 3: 0.6757
Test Accuracy on Task 4: 0.5961
Test Accuracy on Task 5: 0.5731
Test Accuracy on Task 6: 0.6931
Test Accuracy on Task 7: 0.7058
Test Accuracy on Task 8: 0.7003
Test Accuracy on Task 9: 0.7142
Test Accuracy on Task 10: 0.7250

Final: ACC: 0.6669, BWT: -0.0452
```
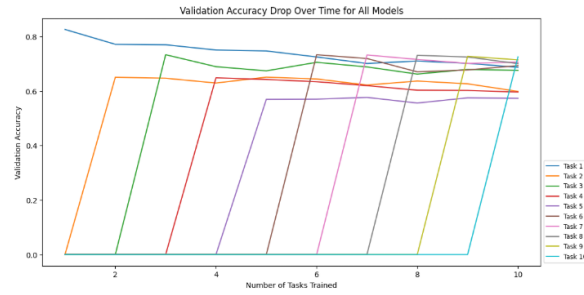
Figure 19: Experiment 6

Experiment 7: L2, SGD, 2, 0.2
Running Experiment: Loss=L2, Optimizer=SGD, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 42.7008, Accuracy: 0.1458
Epoch 5/50, Loss: 36.9633, Accuracy: 0.5431
Epoch 10/50, Loss: 27.5545, Accuracy: 0.6817
Epoch 15/50, Loss: 21.3740, Accuracy: 0.7900
Epoch 20/50, Loss: 17.4137, Accuracy: 0.8303
Epoch 25/50, Loss: 14.9631, Accuracy: 0.8517
Epoch 30/50, Loss: 13.3822, Accuracy: 0.8632
Epoch 35/50, Loss: 12.2593, Accuracy: 0.8739
Epoch 40/50, Loss: 11.4583, Accuracy: 0.8799
Epoch 45/50, Loss: 10.8150, Accuracy: 0.8853
Epoch 50/50, Loss: 10.3113, Accuracy: 0.8893
Test Accuracy on Task 1: 0.8893

Training on Task 2/10...
Epoch 1/20, Loss: 43.6321, Accuracy: 0.8821
Epoch 5/20, Loss: 32.7360, Accuracy: 0.8704
Epoch 10/20, Loss: 23.3215, Accuracy: 0.8713
Epoch 15/20, Loss: 17.7318, Accuracy: 0.8733
Epoch 20/20, Loss: 14.8108, Accuracy: 0.8715
Test Accuracy on Task 1: 0.8715
Test Accuracy on Task 2: 0.8557

Training on Task 3/10...
Epoch 1/20, Loss: 42.2995, Accuracy: 0.8668
Epoch 5/20, Loss: 29.5579, Accuracy: 0.8641
Epoch 10/20, Loss: 20.7254, Accuracy: 0.8652
Epoch 15/20, Loss: 16.4563, Accuracy: 0.8642
Epoch 20/20, Loss: 14.1508, Accuracy: 0.8611
Test Accuracy on Task 1: 0.8611
Test Accuracy on Task 2: 0.8463
Test Accuracy on Task 3: 0.8582

Training on Task 4/10...
Epoch 1/20, Loss: 45.2901, Accuracy: 0.8635
Epoch 5/20, Loss: 33.5814, Accuracy: 0.8501
Epoch 10/20, Loss: 22.2694, Accuracy: 0.8494
Epoch 15/20, Loss: 16.7573, Accuracy: 0.8481
Epoch 20/20, Loss: 14.1455, Accuracy: 0.8442
Test Accuracy on Task 1: 0.8442
Test Accuracy on Task 2: 0.8273
Test Accuracy on Task 3: 0.8221
Test Accuracy on Task 4: 0.8582

```
Training on Task 5/10...
Epoch 1/20, Loss: 42.8092, Accuracy: 0.8474
Epoch 5/20, Loss: 28.0366, Accuracy: 0.8419
Epoch 10/20, Loss: 19.0008, Accuracy: 0.8441
Epoch 15/20, Loss: 15.2585, Accuracy: 0.8430
Epoch 20/20, Loss: 13.1890, Accuracy: 0.8431
Test Accuracy on Task 1: 0.8431
Test Accuracy on Task 2: 0.8168
Test Accuracy on Task 3: 0.8346
Test Accuracy on Task 4: 0.8419
Test Accuracy on Task 5: 0.8684

Training on Task 6/10...
Epoch 1/20, Loss: 43.4345, Accuracy: 0.8490
Epoch 5/20, Loss: 26.3643, Accuracy: 0.8440
Epoch 10/20, Loss: 18.1822, Accuracy: 0.8400
Epoch 15/20, Loss: 14.5730, Accuracy: 0.8320
Epoch 20/20, Loss: 12.7457, Accuracy: 0.8261
Test Accuracy on Task 1: 0.8261
Test Accuracy on Task 2: 0.7987
Test Accuracy on Task 3: 0.7986
Test Accuracy on Task 4: 0.8285
Test Accuracy on Task 5: 0.8569
Test Accuracy on Task 6: 0.8689

Training on Task 7/10...
Epoch 1/20, Loss: 45.0618, Accuracy: 0.8425
Epoch 5/20, Loss: 28.0864, Accuracy: 0.8426
Epoch 10/20, Loss: 18.6841, Accuracy: 0.8418
Epoch 15/20, Loss: 14.9550, Accuracy: 0.8398
Epoch 20/20, Loss: 13.0188, Accuracy: 0.8367
Test Accuracy on Task 1: 0.8367
Test Accuracy on Task 2: 0.7961
Test Accuracy on Task 3: 0.7865
Test Accuracy on Task 4: 0.8078
Test Accuracy on Task 5: 0.8509
Test Accuracy on Task 6: 0.8536
Test Accuracy on Task 7: 0.8649

Training on Task 8/10...
Epoch 1/20, Loss: 44.3531, Accuracy: 0.8214
Epoch 5/20, Loss: 28.1255, Accuracy: 0.8122
Epoch 10/20, Loss: 18.4516, Accuracy: 0.8076
Epoch 15/20, Loss: 14.7253, Accuracy: 0.8049
Epoch 20/20, Loss: 12.8801, Accuracy: 0.8025
Test Accuracy on Task 1: 0.8025
Test Accuracy on Task 2: 0.7708
Test Accuracy on Task 3: 0.7854
Test Accuracy on Task 4: 0.8075
Test Accuracy on Task 5: 0.8096
Test Accuracy on Task 6: 0.8004
Test Accuracy on Task 7: 0.8491
Test Accuracy on Task 8: 0.8616

Training on Task 9/10...
Epoch 1/20, Loss: 43.6081, Accuracy: 0.8188
Epoch 5/20, Loss: 25.8244, Accuracy: 0.8158
```

```
Epoch 10/20, Loss: 17.3534, Accuracy: 0.8141
Epoch 15/20, Loss: 14.1212, Accuracy: 0.8104
Epoch 20/20, Loss: 12.4917, Accuracy: 0.8052
Test Accuracy on Task 1: 0.8052
Test Accuracy on Task 2: 0.7492
Test Accuracy on Task 3: 0.7392
Test Accuracy on Task 4: 0.7932
Test Accuracy on Task 5: 0.8221
Test Accuracy on Task 6: 0.8097
Test Accuracy on Task 7: 0.8406
Test Accuracy on Task 8: 0.8534
Test Accuracy on Task 9: 0.8643


Training on Task 10/10...
Epoch 1/20, Loss: 45.8815, Accuracy: 0.8130
Epoch 5/20, Loss: 26.7688, Accuracy: 0.8128
Epoch 10/20, Loss: 17.8710, Accuracy: 0.8114
Epoch 15/20, Loss: 14.3008, Accuracy: 0.8084
Epoch 20/20, Loss: 12.5598, Accuracy: 0.8059
Test Accuracy on Task 1: 0.8059
Test Accuracy on Task 2: 0.7072
Test Accuracy on Task 3: 0.7591
Test Accuracy on Task 4: 0.7775
Test Accuracy on Task 5: 0.8216
Test Accuracy on Task 6: 0.8135
Test Accuracy on Task 7: 0.8243
Test Accuracy on Task 8: 0.8178
Test Accuracy on Task 9: 0.8473
Test Accuracy on Task 10: 0.8609
Final: ACC: 0.8035, BWT: -0.0684
```
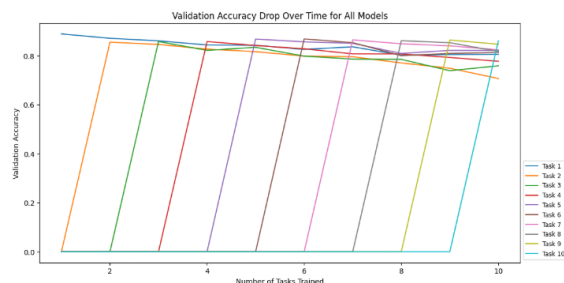

Figure 20: Experiment 7

```
Experiment 8: L1+L2, SGD, 2, 0.2
Running Experiment: Loss=L1+L2, Optimizer=SGD, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 126.1421, Accuracy: 0.3034
Epoch 5/50, Loss: 93.1674, Accuracy: 0.5892
Epoch 10/50, Loss: 60.1548, Accuracy: 0.7827
Epoch 15/50, Loss: 47.3166, Accuracy: 0.8083
Epoch 20/50, Loss: 42.1207, Accuracy: 0.8175
Epoch 25/50, Loss: 39.0995, Accuracy: 0.8242
Epoch 30/50, Loss: 37.1434, Accuracy: 0.8287
Epoch 35/50, Loss: 35.6591, Accuracy: 0.8323
Epoch 40/50, Loss: 34.6599, Accuracy: 0.8358
Epoch 45/50, Loss: 33.5154, Accuracy: 0.8378
```

```
Epoch 50/50, Loss: 30.6428, Accuracy: 0.8692
Test Accuracy on Task 1: 0.8692


Training on Task 2/10...
Epoch 1/20, Loss: 125.9509, Accuracy: 0.8604
Epoch 5/20, Loss: 70.5500, Accuracy: 0.8521
Epoch 10/20, Loss: 44.5098, Accuracy: 0.8632
Epoch 15/20, Loss: 35.2973, Accuracy: 0.8660
Epoch 20/20, Loss: 30.6844, Accuracy: 0.8673
Test Accuracy on Task 1: 0.8673
Test Accuracy on Task 2: 0.8888


Training on Task 3/10...
Epoch 1/20, Loss: 119.3853, Accuracy: 0.8496
Epoch 5/20, Loss: 70.8433, Accuracy: 0.8396
Epoch 10/20, Loss: 41.8723, Accuracy: 0.8358
Epoch 15/20, Loss: 33.4207, Accuracy: 0.8336
Epoch 20/20, Loss: 29.4712, Accuracy: 0.8317
Test Accuracy on Task 1: 0.8317
Test Accuracy on Task 2: 0.8631
Test Accuracy on Task 3: 0.8900


Training on Task 4/10...
Epoch 1/20, Loss: 131.7052, Accuracy: 0.8429
Epoch 5/20, Loss: 74.4455, Accuracy: 0.8513
Epoch 10/20, Loss: 41.3377, Accuracy: 0.8467
Epoch 15/20, Loss: 32.6663, Accuracy: 0.8387
Epoch 20/20, Loss: 28.6630, Accuracy: 0.8296
Test Accuracy on Task 1: 0.8296
Test Accuracy on Task 2: 0.8485
Test Accuracy on Task 3: 0.8136
Test Accuracy on Task 4: 0.8900


Training on Task 5/10...
Epoch 1/20, Loss: 121.2798, Accuracy: 0.8344
Epoch 5/20, Loss: 60.5958, Accuracy: 0.8287
Epoch 10/20, Loss: 37.6170, Accuracy: 0.8062
Epoch 15/20, Loss: 30.8993, Accuracy: 0.8029
Epoch 20/20, Loss: 27.5187, Accuracy: 0.7982
Test Accuracy on Task 1: 0.7982
Test Accuracy on Task 2: 0.8361
Test Accuracy on Task 3: 0.8416
Test Accuracy on Task 4: 0.8689
Test Accuracy on Task 5: 0.8901


Training on Task 6/10...
Epoch 1/20, Loss: 115.7847, Accuracy: 0.7966
Epoch 5/20, Loss: 51.1403, Accuracy: 0.8005
Epoch 10/20, Loss: 35.0892, Accuracy: 0.7932
Epoch 15/20, Loss: 29.4722, Accuracy: 0.7865
Epoch 20/20, Loss: 26.7356, Accuracy: 0.7799
Test Accuracy on Task 1: 0.7799
Test Accuracy on Task 2: 0.8232
Test Accuracy on Task 3: 0.7951
Test Accuracy on Task 4: 0.8492
Test Accuracy on Task 5: 0.8816
Test Accuracy on Task 6: 0.8940
```

```
Training on Task 7/10...
Epoch 1/20, Loss: 127.8356, Accuracy: 0.7832
Epoch 5/20, Loss: 54.5544, Accuracy: 0.7681
Epoch 10/20, Loss: 35.2556, Accuracy: 0.7635
Epoch 15/20, Loss: 29.4554, Accuracy: 0.7546
Epoch 20/20, Loss: 26.4283, Accuracy: 0.7492
Test Accuracy on Task 1: 0.7492
Test Accuracy on Task 2: 0.7923
Test Accuracy on Task 3: 0.7773
Test Accuracy on Task 4: 0.8364
Test Accuracy on Task 5: 0.8696
Test Accuracy on Task 6: 0.8681
Test Accuracy on Task 7: 0.8916

Training on Task 8/10...
Epoch 1/20, Loss: 125.9202, Accuracy: 0.7542
Epoch 5/20, Loss: 55.2110, Accuracy: 0.7354
Epoch 10/20, Loss: 35.4585, Accuracy: 0.7232
Epoch 15/20, Loss: 29.6266, Accuracy: 0.7154
Epoch 20/20, Loss: 26.3833, Accuracy: 0.7092
Test Accuracy on Task 1: 0.7092
Test Accuracy on Task 2: 0.7519
Test Accuracy on Task 3: 0.8018
Test Accuracy on Task 4: 0.8279
Test Accuracy on Task 5: 0.8119
Test Accuracy on Task 6: 0.8095
Test Accuracy on Task 7: 0.8752
Test Accuracy on Task 8: 0.8896

Training on Task 9/10...
Epoch 1/20, Loss: 129.3937, Accuracy: 0.7372
Epoch 5/20, Loss: 56.5073, Accuracy: 0.7613
Epoch 10/20, Loss: 36.0436, Accuracy: 0.7540
Epoch 15/20, Loss: 29.8360, Accuracy: 0.7428
Epoch 20/20, Loss: 26.6872, Accuracy: 0.7296
Test Accuracy on Task 1: 0.7296
Test Accuracy on Task 2: 0.7199
Test Accuracy on Task 3: 0.7106
Test Accuracy on Task 4: 0.8036
Test Accuracy on Task 5: 0.8269
Test Accuracy on Task 6: 0.8242
Test Accuracy on Task 7: 0.8593
Test Accuracy on Task 8: 0.8737
Test Accuracy on Task 9: 0.8913

Training on Task 10/10...
Epoch 1/20, Loss: 133.5687, Accuracy: 0.7543
Epoch 5/20, Loss: 61.6350, Accuracy: 0.7390
Epoch 10/20, Loss: 44.8325, Accuracy: 0.7390
Epoch 15/20, Loss: 32.1079, Accuracy: 0.7328
Epoch 20/20, Loss: 27.3115, Accuracy: 0.7244
Test Accuracy on Task 1: 0.7244
Test Accuracy on Task 2: 0.6972
Test Accuracy on Task 3: 0.7240
Test Accuracy on Task 4: 0.7335
Test Accuracy on Task 5: 0.8347
Test Accuracy on Task 6: 0.8088
Test Accuracy on Task 7: 0.8364
```

```
Test Accuracy on Task 8: 0.8517
Test Accuracy on Task 9: 0.8719
Test Accuracy on Task 10: 0.8888


Final: ACC: 0.7971, BWT: -0.1013
```
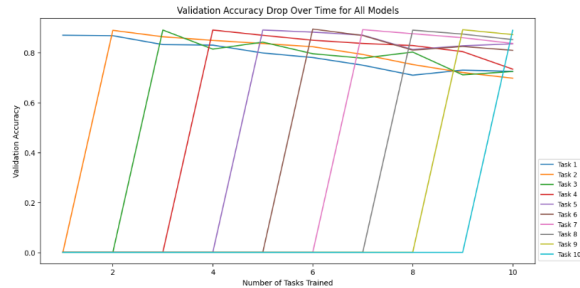

Figure 21: Experiment 8

```
Experiment 9: NLL, RMSProp, 2, 0.2
Running Experiment: Loss=NLL, Optimizer=RMSProp, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 147.1566, Accuracy: 0.9523
Epoch 5/50, Loss: 32.3178, Accuracy: 0.9768
Epoch 10/50, Loss: 16.7938, Accuracy: 0.9799
Epoch 15/50, Loss: 10.3768, Accuracy: 0.9825
Epoch 20/50, Loss: 7.0775, Accuracy: 0.9821
Epoch 25/50, Loss: 4.8697, Accuracy: 0.9816
Epoch 30/50, Loss: 4.3196, Accuracy: 0.9828
Epoch 35/50, Loss: 3.6122, Accuracy: 0.9815
Epoch 40/50, Loss: 2.8275, Accuracy: 0.9835
Epoch 45/50, Loss: 2.1729, Accuracy: 0.9826
Epoch 50/50, Loss: 1.9332, Accuracy: 0.9824
Test Accuracy on Task 1: 0.9824


Training on Task 2/10...
Epoch 1/20, Loss: 197.3855, Accuracy: 0.9798
Epoch 5/20, Loss: 35.5140, Accuracy: 0.9734
Epoch 10/20, Loss: 18.8548, Accuracy: 0.9688
Epoch 15/20, Loss: 12.4641, Accuracy: 0.9637
Epoch 20/20, Loss: 8.9629, Accuracy: 0.9594
Test Accuracy on Task 1: 0.9594
Test Accuracy on Task 2: 0.9830


Training on Task 3/10...
Epoch 1/20, Loss: 225.5300, Accuracy: 0.9345
Epoch 5/20, Loss: 37.8419, Accuracy: 0.9083
Epoch 10/20, Loss: 20.2179, Accuracy: 0.8829
Epoch 15/20, Loss: 13.3914, Accuracy: 0.8749
Epoch 20/20, Loss: 9.7659, Accuracy: 0.8581
Test Accuracy on Task 1: 0.8581
Test Accuracy on Task 2: 0.9351
Test Accuracy on Task 3: 0.9811


Training on Task 4/10...
Epoch 1/20, Loss: 270.1048, Accuracy: 0.8372
Epoch 5/20, Loss: 39.2171, Accuracy: 0.7858
```

```
Epoch 10/20, Loss: 20.3740, Accuracy: 0.7722
Epoch 15/20, Loss: 13.6470, Accuracy: 0.7197
Epoch 20/20, Loss: 10.5147, Accuracy: 0.7063
Test Accuracy on Task 1: 0.7063
Test Accuracy on Task 2: 0.8114
Test Accuracy on Task 3: 0.9037
Test Accuracy on Task 4: 0.9800


Training on Task 5/10...
Epoch 1/20, Loss: 276.0842, Accuracy: 0.7487
Epoch 5/20, Loss: 40.3316, Accuracy: 0.7228
Epoch 10/20, Loss: 21.9961, Accuracy: 0.7115
Epoch 15/20, Loss: 14.1242, Accuracy: 0.6939
Epoch 20/20, Loss: 10.6295, Accuracy: 0.6763
Test Accuracy on Task 1: 0.6763
Test Accuracy on Task 2: 0.6785
Test Accuracy on Task 3: 0.7629
Test Accuracy on Task 4: 0.9492
Test Accuracy on Task 5: 0.9794


Training on Task 6/10...
Epoch 1/20, Loss: 282.3773, Accuracy: 0.6707
Epoch 5/20, Loss: 44.3698, Accuracy: 0.6214
Epoch 10/20, Loss: 24.3544, Accuracy: 0.5933
Epoch 15/20, Loss: 16.2874, Accuracy: 0.6034
Epoch 20/20, Loss: 11.0736, Accuracy: 0.5854
Test Accuracy on Task 1: 0.5854
Test Accuracy on Task 2: 0.5836
Test Accuracy on Task 3: 0.6406
Test Accuracy on Task 4: 0.8673
Test Accuracy on Task 5: 0.9390
Test Accuracy on Task 6: 0.9783


Training on Task 7/10...
Epoch 1/20, Loss: 310.5199, Accuracy: 0.5585
Epoch 5/20, Loss: 46.9427, Accuracy: 0.5188
Epoch 10/20, Loss: 25.5628, Accuracy: 0.4927
Epoch 15/20, Loss: 17.9369, Accuracy: 0.4786
Epoch 20/20, Loss: 13.4072, Accuracy: 0.4694
Test Accuracy on Task 1: 0.4694
Test Accuracy on Task 2: 0.4815
Test Accuracy on Task 3: 0.5609
Test Accuracy on Task 4: 0.7145
Test Accuracy on Task 5: 0.8489
Test Accuracy on Task 6: 0.9280
Test Accuracy on Task 7: 0.9796


Training on Task 8/10...
Epoch 1/20, Loss: 303.7679, Accuracy: 0.4406
Epoch 5/20, Loss: 47.0070, Accuracy: 0.4487
Epoch 10/20, Loss: 25.4157, Accuracy: 0.4251
Epoch 15/20, Loss: 17.0916, Accuracy: 0.4066
Epoch 20/20, Loss: 13.1424, Accuracy: 0.3895
Test Accuracy on Task 1: 0.3895
Test Accuracy on Task 2: 0.4792
Test Accuracy on Task 3: 0.4725
Test Accuracy on Task 4: 0.5632
Test Accuracy on Task 5: 0.7066
```

```
Test Accuracy on Task 6: 0.8028
Test Accuracy on Task 7: 0.9324
Test Accuracy on Task 8: 0.9787

Training on Task 9/10...
Epoch 1/20, Loss: 347.8759, Accuracy: 0.3794
Epoch 5/20, Loss: 51.2497, Accuracy: 0.3310
Epoch 10/20, Loss: 26.8499, Accuracy: 0.3167
Epoch 15/20, Loss: 18.1349, Accuracy: 0.3102
Epoch 20/20, Loss: 13.1811, Accuracy: 0.2865
Test Accuracy on Task 1: 0.2865
Test Accuracy on Task 2: 0.4041
Test Accuracy on Task 3: 0.4368
Test Accuracy on Task 4: 0.5306
Test Accuracy on Task 5: 0.6451
Test Accuracy on Task 6: 0.7536
Test Accuracy on Task 7: 0.8655
Test Accuracy on Task 8: 0.9543
Test Accuracy on Task 9: 0.9766

Training on Task 10/10...
Epoch 1/20, Loss: 340.4544, Accuracy: 0.3303
Epoch 5/20, Loss: 53.8197, Accuracy: 0.2939
Epoch 10/20, Loss: 29.7825, Accuracy: 0.2691
Epoch 15/20, Loss: 20.1962, Accuracy: 0.2779
Epoch 20/20, Loss: 14.5363, Accuracy: 0.2602
Test Accuracy on Task 1: 0.2602
Test Accuracy on Task 2: 0.3425
Test Accuracy on Task 3: 0.4133
Test Accuracy on Task 4: 0.4972
Test Accuracy on Task 5: 0.5484
Test Accuracy on Task 6: 0.7246
Test Accuracy on Task 7: 0.8079
Test Accuracy on Task 8: 0.8980
Test Accuracy on Task 9: 0.9450
Test Accuracy on Task 10: 0.9776

Final: ACC: 0.6415, BWT: -0.3758
```
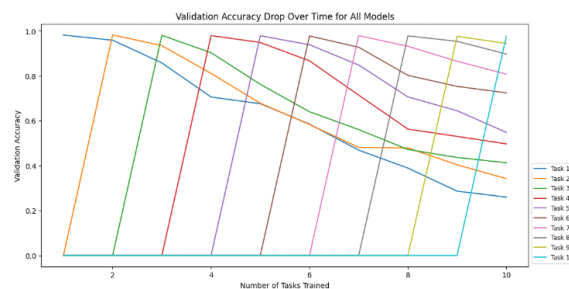

Figure 22: Experiment 9

```
Experiment 10: L1, RMSProp, 2, 0.2
Running Experiment: Loss=L1, Optimizer=RMSProp, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 23.5858, Accuracy: 0.9138
Epoch 5/50, Loss: 5.7865, Accuracy: 0.9526
```

```
Epoch 10/50, Loss: 3.8276, Accuracy: 0.9648
Epoch 15/50, Loss: 2.9475, Accuracy: 0.9715
Epoch 20/50, Loss: 2.4063, Accuracy: 0.9741
Epoch 25/50, Loss: 2.0018, Accuracy: 0.9762
Epoch 30/50, Loss: 1.7252, Accuracy: 0.9766
Epoch 35/50, Loss: 1.5813, Accuracy: 0.9786
Epoch 40/50, Loss: 1.4173, Accuracy: 0.9793
Epoch 45/50, Loss: 1.2818, Accuracy: 0.9799
Epoch 50/50, Loss: 1.1906, Accuracy: 0.9802
Test Accuracy on Task 1: 0.9802

Training on Task 2/10...
Epoch 1/20, Loss: 23.8564, Accuracy: 0.9738
Epoch 5/20, Loss: 4.2123, Accuracy: 0.9691
Epoch 10/20, Loss: 2.7700, Accuracy: 0.9626
Epoch 15/20, Loss: 2.1989, Accuracy: 0.9581
Epoch 20/20, Loss: 1.8198, Accuracy: 0.9537
Test Accuracy on Task 1: 0.9537
Test Accuracy on Task 2: 0.9784

Training on Task 3/10...
Epoch 1/20, Loss: 31.1575, Accuracy: 0.9363
Epoch 5/20, Loss: 12.2976, Accuracy: 0.9248
Epoch 10/20, Loss: 3.1031, Accuracy: 0.9133
Epoch 15/20, Loss: 2.1908, Accuracy: 0.9123
Epoch 20/20, Loss: 1.7210, Accuracy: 0.9156
Test Accuracy on Task 1: 0.9156
Test Accuracy on Task 2: 0.9620
Test Accuracy on Task 3: 0.9783

Training on Task 4/10...
Epoch 1/20, Loss: 29.0146, Accuracy: 0.9090
Epoch 5/20, Loss: 4.0654, Accuracy: 0.8931
Epoch 10/20, Loss: 2.7122, Accuracy: 0.8824
Epoch 15/20, Loss: 2.1449, Accuracy: 0.8721
Epoch 20/20, Loss: 1.7518, Accuracy: 0.8646
Test Accuracy on Task 1: 0.8646
Test Accuracy on Task 2: 0.8978
Test Accuracy on Task 3: 0.9551
Test Accuracy on Task 4: 0.9769

Training on Task 5/10...
Epoch 1/20, Loss: 16.8551, Accuracy: 0.8856
Epoch 5/20, Loss: 3.9076, Accuracy: 0.8675
Epoch 10/20, Loss: 2.6114, Accuracy: 0.8519
Epoch 15/20, Loss: 2.0605, Accuracy: 0.8530
Epoch 20/20, Loss: 1.7161, Accuracy: 0.8411
Test Accuracy on Task 1: 0.8411
Test Accuracy on Task 2: 0.8065
Test Accuracy on Task 3: 0.9227
Test Accuracy on Task 4: 0.9674
Test Accuracy on Task 5: 0.9772

Training on Task 6/10...
Epoch 1/20, Loss: 17.9173, Accuracy: 0.8327
Epoch 5/20, Loss: 4.0447, Accuracy: 0.8052
Epoch 10/20, Loss: 2.7164, Accuracy: 0.8181
Epoch 15/20, Loss: 2.1325, Accuracy: 0.8101
```

```
Epoch 20/20, Loss: 1.7882, Accuracy: 0.7862
Test Accuracy on Task 1: 0.7862
Test Accuracy on Task 2: 0.7310
Test Accuracy on Task 3: 0.8551
Test Accuracy on Task 4: 0.9352
Test Accuracy on Task 5: 0.9657
Test Accuracy on Task 6: 0.9775


Training on Task 7/10...
Epoch 1/20, Loss: 26.7677, Accuracy: 0.7332
Epoch 5/20, Loss: 4.2774, Accuracy: 0.6831
Epoch 10/20, Loss: 2.8745, Accuracy: 0.6656
Epoch 15/20, Loss: 2.2654, Accuracy: 0.6635
Epoch 20/20, Loss: 1.8699, Accuracy: 0.6610
Test Accuracy on Task 1: 0.6610
Test Accuracy on Task 2: 0.6101
Test Accuracy on Task 3: 0.7343
Test Accuracy on Task 4: 0.8293
Test Accuracy on Task 5: 0.9108
Test Accuracy on Task 6: 0.9478
Test Accuracy on Task 7: 0.9775


Training on Task 8/10...
Epoch 1/20, Loss: 27.1102, Accuracy: 0.6424
Epoch 5/20, Loss: 4.4016, Accuracy: 0.5991
Epoch 10/20, Loss: 2.9447, Accuracy: 0.5806
Epoch 15/20, Loss: 2.2879, Accuracy: 0.5569
Epoch 20/20, Loss: 1.9182, Accuracy: 0.5505
Test Accuracy on Task 1: 0.5505
Test Accuracy on Task 2: 0.5499
Test Accuracy on Task 3: 0.6207
Test Accuracy on Task 4: 0.7170
Test Accuracy on Task 5: 0.8074
Test Accuracy on Task 6: 0.8504
Test Accuracy on Task 7: 0.9521
Test Accuracy on Task 8: 0.9757


Training on Task 9/10...
Epoch 1/20, Loss: 37.3443, Accuracy: 0.5995
Epoch 5/20, Loss: 4.5403, Accuracy: 0.5499
Epoch 10/20, Loss: 2.9997, Accuracy: 0.5274
Epoch 15/20, Loss: 2.3459, Accuracy: 0.5072
Epoch 20/20, Loss: 1.9105, Accuracy: 0.4981
Test Accuracy on Task 1: 0.4981
Test Accuracy on Task 2: 0.5458
Test Accuracy on Task 3: 0.5840
Test Accuracy on Task 4: 0.7215
Test Accuracy on Task 5: 0.8292
Test Accuracy on Task 6: 0.8542
Test Accuracy on Task 7: 0.9053
Test Accuracy on Task 8: 0.9620
Test Accuracy on Task 9: 0.9776


Training on Task 10/10...
Epoch 1/20, Loss: 30.2168, Accuracy: 0.5814
Epoch 5/20, Loss: 4.3512, Accuracy: 0.5132
Epoch 10/20, Loss: 2.8980, Accuracy: 0.4858
Epoch 15/20, Loss: 2.2161, Accuracy: 0.4703
```

```
Epoch 20/20, Loss: 1.8552, Accuracy: 0.4514
Test Accuracy on Task 1: 0.4514
Test Accuracy on Task 2: 0.5274
Test Accuracy on Task 3: 0.6001
Test Accuracy on Task 4: 0.6758
Test Accuracy on Task 5: 0.7963
Test Accuracy on Task 6: 0.8469
Test Accuracy on Task 7: 0.8780
Test Accuracy on Task 8: 0.9403
Test Accuracy on Task 9: 0.9682
Test Accuracy on Task 10: 0.9740


Final: ACC: 0.7658, BWT: -0.2350
```
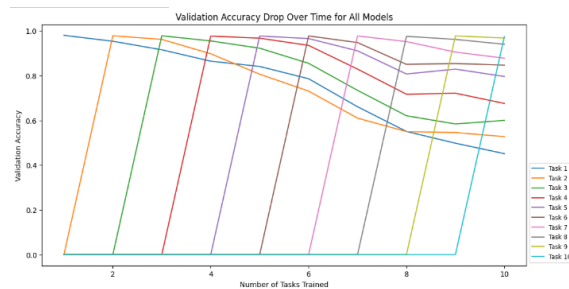

Figure 23: Experiment 10

```
Experiment 11: L2, RMSProp, 2, 0.2
Running Experiment: Loss=L2, Optimizer=RMSProp, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 10.2738, Accuracy: 0.9287
Epoch 5/50, Loss: 3.0218, Accuracy: 0.9645
Epoch 10/50, Loss: 1.9012, Accuracy: 0.9743
Epoch 15/50, Loss: 1.4150, Accuracy: 0.9775
Epoch 20/50, Loss: 1.1293, Accuracy: 0.9804
Epoch 25/50, Loss: 0.9189, Accuracy: 0.9819
Epoch 30/50, Loss: 0.7554, Accuracy: 0.9821
Epoch 35/50, Loss: 0.6973, Accuracy: 0.9825
Epoch 40/50, Loss: 0.5878, Accuracy: 0.9824
Epoch 45/50, Loss: 0.5301, Accuracy: 0.9831
Epoch 50/50, Loss: 0.4744, Accuracy: 0.9833
Test Accuracy on Task 1: 0.9833


Training on Task 2/10...
Epoch 1/20, Loss: 8.1809, Accuracy: 0.9797
Epoch 5/20, Loss: 2.2232, Accuracy: 0.9717
Epoch 10/20, Loss: 1.4192, Accuracy: 0.9690
Epoch 15/20, Loss: 1.0627, Accuracy: 0.9682
Epoch 20/20, Loss: 0.8692, Accuracy: 0.9654
Test Accuracy on Task 1: 0.9654
Test Accuracy on Task 2: 0.9815


Training on Task 3/10...
Epoch 1/20, Loss: 8.0981, Accuracy: 0.9391
Epoch 5/20, Loss: 2.2192, Accuracy: 0.9311
Epoch 10/20, Loss: 1.4569, Accuracy: 0.9242
```

```
Epoch 15/20, Loss: 1.1141, Accuracy: 0.9130
Epoch 20/20, Loss: 0.8918, Accuracy: 0.9087
Test Accuracy on Task 1: 0.9087
Test Accuracy on Task 2: 0.9664
Test Accuracy on Task 3: 0.9810


Training on Task 4/10...
Epoch 1/20, Loss: 8.3775, Accuracy: 0.9085
Epoch 5/20, Loss: 2.2355, Accuracy: 0.8879
Epoch 10/20, Loss: 1.4759, Accuracy: 0.8759
Epoch 15/20, Loss: 1.0836, Accuracy: 0.8700
Epoch 20/20, Loss: 0.8864, Accuracy: 0.8559
Test Accuracy on Task 1: 0.8559
Test Accuracy on Task 2: 0.9189
Test Accuracy on Task 3: 0.9550
Test Accuracy on Task 4: 0.9808


Training on Task 5/10...
Epoch 1/20, Loss: 8.5275, Accuracy: 0.8800
Epoch 5/20, Loss: 2.2129, Accuracy: 0.8805
Epoch 10/20, Loss: 1.4567, Accuracy: 0.8745
Epoch 15/20, Loss: 1.1165, Accuracy: 0.8609
Epoch 20/20, Loss: 0.8926, Accuracy: 0.8633
Test Accuracy on Task 1: 0.8633
Test Accuracy on Task 2: 0.8828
Test Accuracy on Task 3: 0.9207
Test Accuracy on Task 4: 0.9727
Test Accuracy on Task 5: 0.9799


Training on Task 6/10...
Epoch 1/20, Loss: 8.9202, Accuracy: 0.8653
Epoch 5/20, Loss: 2.3204, Accuracy: 0.8469
Epoch 10/20, Loss: 1.5352, Accuracy: 0.8464
Epoch 15/20, Loss: 1.1698, Accuracy: 0.8402
Epoch 20/20, Loss: 0.9362, Accuracy: 0.8349
Test Accuracy on Task 1: 0.8349
Test Accuracy on Task 2: 0.8273
Test Accuracy on Task 3: 0.8913
Test Accuracy on Task 4: 0.9591
Test Accuracy on Task 5: 0.9702
Test Accuracy on Task 6: 0.9805


Training on Task 7/10...
Epoch 1/20, Loss: 9.5541, Accuracy: 0.7868
Epoch 5/20, Loss: 2.3996, Accuracy: 0.7585
Epoch 10/20, Loss: 1.5817, Accuracy: 0.7484
Epoch 15/20, Loss: 1.2379, Accuracy: 0.7437
Epoch 20/20, Loss: 0.9926, Accuracy: 0.7439
Test Accuracy on Task 1: 0.7439
Test Accuracy on Task 2: 0.6698
Test Accuracy on Task 3: 0.7768
Test Accuracy on Task 4: 0.8937
Test Accuracy on Task 5: 0.9423
Test Accuracy on Task 6: 0.9597
Test Accuracy on Task 7: 0.9796


Training on Task 8/10...
Epoch 1/20, Loss: 9.3582, Accuracy: 0.7237
```

```
Epoch 5/20, Loss: 2.3839, Accuracy: 0.6852
Epoch 10/20, Loss: 1.5097, Accuracy: 0.6656
Epoch 15/20, Loss: 1.1403, Accuracy: 0.6728
Epoch 20/20, Loss: 0.9322, Accuracy: 0.6579
Test Accuracy on Task 1: 0.6579
Test Accuracy on Task 2: 0.5555
Test Accuracy on Task 3: 0.6674
Test Accuracy on Task 4: 0.8194
Test Accuracy on Task 5: 0.9198
Test Accuracy on Task 6: 0.8948
Test Accuracy on Task 7: 0.9678
Test Accuracy on Task 8: 0.9793


Training on Task 9/10...
Epoch 1/20, Loss: 10.0831, Accuracy: 0.6744
Epoch 5/20, Loss: 2.4819, Accuracy: 0.6199
Epoch 10/20, Loss: 1.6423, Accuracy: 0.6035
Epoch 15/20, Loss: 1.2513, Accuracy: 0.5931
Epoch 20/20, Loss: 1.0446, Accuracy: 0.5922
Test Accuracy on Task 1: 0.5922
Test Accuracy on Task 2: 0.5436
Test Accuracy on Task 3: 0.6135
Test Accuracy on Task 4: 0.7778
Test Accuracy on Task 5: 0.8944
Test Accuracy on Task 6: 0.9000
Test Accuracy on Task 7: 0.9409
Test Accuracy on Task 8: 0.9673
Test Accuracy on Task 9: 0.9789


Training on Task 10/10...
Epoch 1/20, Loss: 9.9951, Accuracy: 0.6527
Epoch 5/20, Loss: 2.5137, Accuracy: 0.5754
Epoch 10/20, Loss: 1.6049, Accuracy: 0.5650
Epoch 15/20, Loss: 1.2468, Accuracy: 0.5473
Epoch 20/20, Loss: 1.0220, Accuracy: 0.5475
Test Accuracy on Task 1: 0.5475
Test Accuracy on Task 2: 0.4690
Test Accuracy on Task 3: 0.5403
Test Accuracy on Task 4: 0.7174
Test Accuracy on Task 5: 0.8190
Test Accuracy on Task 6: 0.8481
Test Accuracy on Task 7: 0.9008
Test Accuracy on Task 8: 0.9522
Test Accuracy on Task 9: 0.9664
Test Accuracy on Task 10: 0.9787


ACC: 0.7739, BWT: -0.2293
```
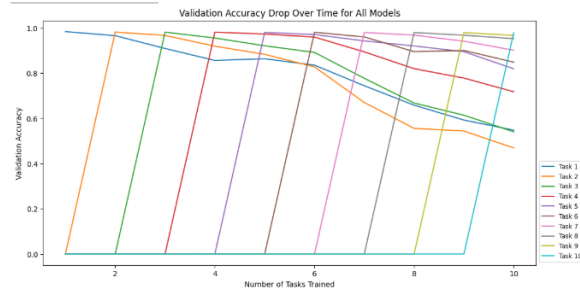
Figure 24: Experiment 11

```
Experiment 12: L1+L2, RMSProp, 2, 0.2
Running Experiment: Loss=L1+L2, Optimizer=RMSProp, Depth=2, Dropout=0.2

Training on Task 1/10...
Epoch 1/50, Loss: 25.2481, Accuracy: 0.9298
Epoch 5/50, Loss: 7.1287, Accuracy: 0.9670
Epoch 10/50, Loss: 4.4833, Accuracy: 0.9743
Epoch 15/50, Loss: 3.3302, Accuracy: 0.9786
Epoch 20/50, Loss: 2.6851, Accuracy: 0.9795
Epoch 25/50, Loss: 2.2728, Accuracy: 0.9797
Epoch 30/50, Loss: 2.0162, Accuracy: 0.9804
Epoch 35/50, Loss: 1.7285, Accuracy: 0.9815
Epoch 40/50, Loss: 1.5668, Accuracy: 0.9817
Epoch 45/50, Loss: 1.3731, Accuracy: 0.9812
Epoch 50/50, Loss: 1.2504, Accuracy: 0.9816
Test Accuracy on Task 1: 0.9816


Training on Task 2/10...
Epoch 1/20, Loss: 25.1274, Accuracy: 0.9783
Epoch 5/20, Loss: 5.7303, Accuracy: 0.9727
Epoch 10/20, Loss: 3.7187, Accuracy: 0.9682
Epoch 15/20, Loss: 2.8307, Accuracy: 0.9622
Epoch 20/20, Loss: 2.2961, Accuracy: 0.9601
Test Accuracy on Task 1: 0.9601
Test Accuracy on Task 2: 0.9803


Training on Task 3/10...
Epoch 1/20, Loss: 22.8835, Accuracy: 0.9453
Epoch 5/20, Loss: 5.7242, Accuracy: 0.9438
Epoch 10/20, Loss: 3.6810, Accuracy: 0.9394
Epoch 15/20, Loss: 2.7571, Accuracy: 0.9335
Epoch 20/20, Loss: 2.2427, Accuracy: 0.9310
Test Accuracy on Task 1: 0.9310
Test Accuracy on Task 2: 0.9681
Test Accuracy on Task 3: 0.9802


Training on Task 4/10...
Epoch 1/20, Loss: 27.5624, Accuracy: 0.9199
Epoch 5/20, Loss: 5.9477, Accuracy: 0.8955
Epoch 10/20, Loss: 3.8307, Accuracy: 0.8811
Epoch 15/20, Loss: 2.8980, Accuracy: 0.8618
Epoch 20/20, Loss: 2.3620, Accuracy: 0.8577
Test Accuracy on Task 1: 0.8577
Test Accuracy on Task 2: 0.8723
Test Accuracy on Task 3: 0.9587
Test Accuracy on Task 4: 0.9799
```

```
Training on Task 5/10...
Epoch 1/20, Loss: 23.4167, Accuracy: 0.8798
Epoch 5/20, Loss: 5.9165, Accuracy: 0.8574
Epoch 10/20, Loss: 3.9020, Accuracy: 0.8409
Epoch 15/20, Loss: 2.9784, Accuracy: 0.8323
Epoch 20/20, Loss: 2.4198, Accuracy: 0.8226
Test Accuracy on Task 1: 0.8226
Test Accuracy on Task 2: 0.7263
Test Accuracy on Task 3: 0.9097
Test Accuracy on Task 4: 0.9702
Test Accuracy on Task 5: 0.9800

Training on Task 6/10...
Epoch 1/20, Loss: 26.8138, Accuracy: 0.8346
Epoch 5/20, Loss: 6.2697, Accuracy: 0.7924
Epoch 10/20, Loss: 4.0211, Accuracy: 0.7653
Epoch 15/20, Loss: 3.1972, Accuracy: 0.7550
Epoch 20/20, Loss: 2.5395, Accuracy: 0.7293
Test Accuracy on Task 1: 0.7293
Test Accuracy on Task 2: 0.6271
Test Accuracy on Task 3: 0.8812
Test Accuracy on Task 4: 0.9487
Test Accuracy on Task 5: 0.9683
Test Accuracy on Task 6: 0.9790

Training on Task 7/10...
Epoch 1/20, Loss: 32.7554, Accuracy: 0.7064
Epoch 5/20, Loss: 6.5965, Accuracy: 0.6439
Epoch 10/20, Loss: 4.3559, Accuracy: 0.6202
Epoch 15/20, Loss: 3.3566, Accuracy: 0.6083
Epoch 20/20, Loss: 2.7379, Accuracy: 0.5948
Test Accuracy on Task 1: 0.5948
Test Accuracy on Task 2: 0.5484
Test Accuracy on Task 3: 0.7374
Test Accuracy on Task 4: 0.8604
Test Accuracy on Task 5: 0.9148
Test Accuracy on Task 6: 0.9431
Test Accuracy on Task 7: 0.9803

Training on Task 8/10...
Epoch 1/20, Loss: 27.7461, Accuracy: 0.5713
Epoch 5/20, Loss: 6.6307, Accuracy: 0.5834
Epoch 10/20, Loss: 4.2694, Accuracy: 0.5751
Epoch 15/20, Loss: 3.3724, Accuracy: 0.5663
Epoch 20/20, Loss: 2.7416, Accuracy: 0.5613
Test Accuracy on Task 1: 0.5613
Test Accuracy on Task 2: 0.5080
Test Accuracy on Task 3: 0.6193
Test Accuracy on Task 4: 0.7727
Test Accuracy on Task 5: 0.8623
Test Accuracy on Task 6: 0.8629
Test Accuracy on Task 7: 0.9590
Test Accuracy on Task 8: 0.9783

Training on Task 9/10...
Epoch 1/20, Loss: 32.3408, Accuracy: 0.6073
Epoch 5/20, Loss: 6.6473, Accuracy: 0.5273
```

```
Epoch 10/20, Loss: 4.4025, Accuracy: 0.5015
Epoch 15/20, Loss: 3.3458, Accuracy: 0.4945
Epoch 20/20, Loss: 2.8071, Accuracy: 0.4841
Test Accuracy on Task 1: 0.4841
Test Accuracy on Task 2: 0.5347
Test Accuracy on Task 3: 0.5955
Test Accuracy on Task 4: 0.6656
Test Accuracy on Task 5: 0.8352
Test Accuracy on Task 6: 0.8644
Test Accuracy on Task 7: 0.8943
Test Accuracy on Task 8: 0.9583
Test Accuracy on Task 9: 0.9779


Training on Task 10/10...
Epoch 1/20, Loss: 32.0550, Accuracy: 0.5443
Epoch 5/20, Loss: 7.2441, Accuracy: 0.4870
Epoch 10/20, Loss: 4.7173, Accuracy: 0.4735
Epoch 15/20, Loss: 3.7160, Accuracy: 0.4574
Epoch 20/20, Loss: 3.0920, Accuracy: 0.4497
Test Accuracy on Task 1: 0.4497
Test Accuracy on Task 2: 0.4270
Test Accuracy on Task 3: 0.5768
Test Accuracy on Task 4: 0.6070
Test Accuracy on Task 5: 0.7354
Test Accuracy on Task 6: 0.8147
Test Accuracy on Task 7: 0.8499
Test Accuracy on Task 8: 0.9394
Test Accuracy on Task 9: 0.9656
Test Accuracy on Task 10: 0.9775


Final: ACC: 0.7343, BWT: -0.2724
```
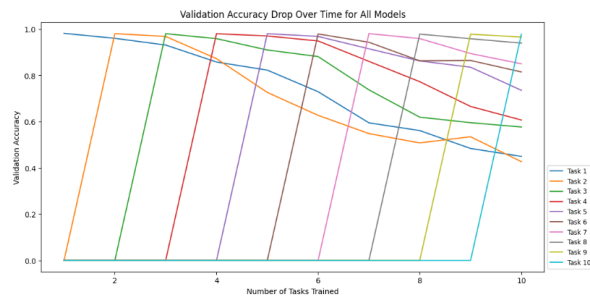

Figure 25: Experiment 12

```
Experiment 13: Best Loss (L1), Best Optimizer SGD, 2, 0.5
Running Experiment: Loss=L1, Optimizer=SGD, Depth=2, Dropout=0.5


Training on Task 1/10...
Epoch 1/50, Loss: 84.1661, Accuracy: 0.1459
Epoch 5/50, Loss: 76.7680, Accuracy: 0.3589
Epoch 10/50, Loss: 60.7791, Accuracy: 0.5843
Epoch 15/50, Loss: 48.1192, Accuracy: 0.6817
Epoch 20/50, Loss: 40.1378, Accuracy: 0.7148
Epoch 25/50, Loss: 36.1670, Accuracy: 0.7245
Epoch 30/50, Loss: 33.9414, Accuracy: 0.7319
Epoch 35/50, Loss: 32.4101, Accuracy: 0.7357
Epoch 40/50, Loss: 31.3114, Accuracy: 0.7394
```

```
Epoch 45/50, Loss: 30.4609, Accuracy: 0.7419
Epoch 50/50, Loss: 29.7367, Accuracy: 0.7443
Test Accuracy on Task 1: 0.7443

Training on Task 2/10...
Epoch 1/20, Loss: 82.6980, Accuracy: 0.7434
Epoch 5/20, Loss: 67.3685, Accuracy: 0.7372
Epoch 10/20, Loss: 53.4294, Accuracy: 0.7322
Epoch 15/20, Loss: 43.7236, Accuracy: 0.7301
Epoch 20/20, Loss: 38.7270, Accuracy: 0.7379
Test Accuracy on Task 1: 0.7379
Test Accuracy on Task 2: 0.6926

Training on Task 3/10...
Epoch 1/20, Loss: 81.0191, Accuracy: 0.7371
Epoch 5/20, Loss: 61.1051, Accuracy: 0.7314
Epoch 10/20, Loss: 47.5177, Accuracy: 0.7315
Epoch 15/20, Loss: 41.6106, Accuracy: 0.7326
Epoch 20/20, Loss: 35.4180, Accuracy: 0.7315
Test Accuracy on Task 1: 0.7315
Test Accuracy on Task 2: 0.6868
Test Accuracy on Task 3: 0.7219

Training on Task 4/10...
Epoch 1/20, Loss: 83.3686, Accuracy: 0.7306
Epoch 5/20, Loss: 66.4413, Accuracy: 0.7204
Epoch 10/20, Loss: 52.3587, Accuracy: 0.7243
Epoch 15/20, Loss: 43.8618, Accuracy: 0.7251
Epoch 20/20, Loss: 40.4657, Accuracy: 0.7267
Test Accuracy on Task 1: 0.7267
Test Accuracy on Task 2: 0.6784
Test Accuracy on Task 3: 0.6939
Test Accuracy on Task 4: 0.6408

Training on Task 5/10...
Epoch 1/20, Loss: 78.2162, Accuracy: 0.7254
Epoch 5/20, Loss: 59.3817, Accuracy: 0.7226
Epoch 10/20, Loss: 48.9105, Accuracy: 0.7230
Epoch 15/20, Loss: 38.0728, Accuracy: 0.7205
Epoch 20/20, Loss: 34.0782, Accuracy: 0.7207
Test Accuracy on Task 1: 0.7207
Test Accuracy on Task 2: 0.6815
Test Accuracy on Task 3: 0.6989
Test Accuracy on Task 4: 0.6641
Test Accuracy on Task 5: 0.7297

Training on Task 6/10...
Epoch 1/20, Loss: 79.6938, Accuracy: 0.7193
Epoch 5/20, Loss: 57.5110, Accuracy: 0.7141
Epoch 10/20, Loss: 41.7558, Accuracy: 0.7156
Epoch 15/20, Loss: 35.3240, Accuracy: 0.7142
Epoch 20/20, Loss: 32.5554, Accuracy: 0.7135
Test Accuracy on Task 1: 0.7135
Test Accuracy on Task 2: 0.6756
Test Accuracy on Task 3: 0.6927
Test Accuracy on Task 4: 0.6692
Test Accuracy on Task 5: 0.7234
Test Accuracy on Task 6: 0.7321
```

```
Training on Task 7/10...
Epoch 1/20, Loss: 82.4361, Accuracy: 0.7146
Epoch 5/20, Loss: 63.3638, Accuracy: 0.7111
Epoch 10/20, Loss: 46.2625, Accuracy: 0.7130
Epoch 15/20, Loss: 38.3526, Accuracy: 0.7063
Epoch 20/20, Loss: 33.7574, Accuracy: 0.7035
Test Accuracy on Task 1: 0.7035
Test Accuracy on Task 2: 0.6637
Test Accuracy on Task 3: 0.6856
Test Accuracy on Task 4: 0.6401
Test Accuracy on Task 5: 0.7202
Test Accuracy on Task 6: 0.7216
Test Accuracy on Task 7: 0.7227

Training on Task 8/10...
Epoch 1/20, Loss: 81.6500, Accuracy: 0.7055
Epoch 5/20, Loss: 59.4516, Accuracy: 0.7021
Epoch 10/20, Loss: 40.4226, Accuracy: 0.7017
Epoch 15/20, Loss: 34.8779, Accuracy: 0.7003
Epoch 20/20, Loss: 32.3578, Accuracy: 0.6978
Test Accuracy on Task 1: 0.6978
Test Accuracy on Task 2: 0.6474
Test Accuracy on Task 3: 0.6631
Test Accuracy on Task 4: 0.6134
Test Accuracy on Task 5: 0.6900
Test Accuracy on Task 6: 0.6945
Test Accuracy on Task 7: 0.7170
Test Accuracy on Task 8: 0.7275

Training on Task 9/10...
Epoch 1/20, Loss: 79.5145, Accuracy: 0.7003
Epoch 5/20, Loss: 65.4071, Accuracy: 0.6972
Epoch 10/20, Loss: 50.8182, Accuracy: 0.7028
Epoch 15/20, Loss: 42.2072, Accuracy: 0.7037
Epoch 20/20, Loss: 35.2427, Accuracy: 0.6958
Test Accuracy on Task 1: 0.6958
Test Accuracy on Task 2: 0.6589
Test Accuracy on Task 3: 0.6693
Test Accuracy on Task 4: 0.6065
Test Accuracy on Task 5: 0.7115
Test Accuracy on Task 6: 0.6814
Test Accuracy on Task 7: 0.7011
Test Accuracy on Task 8: 0.7183
Test Accuracy on Task 9: 0.7176

Training on Task 10/10...
Epoch 1/20, Loss: 82.1572, Accuracy: 0.6951
Epoch 5/20, Loss: 59.0197, Accuracy: 0.6891
Epoch 10/20, Loss: 46.4496, Accuracy: 0.6759
Epoch 15/20, Loss: 41.2153, Accuracy: 0.6757
Epoch 20/20, Loss: 38.5565, Accuracy: 0.6803
Test Accuracy on Task 1: 0.6803
Test Accuracy on Task 2: 0.6198
Test Accuracy on Task 3: 0.6707
Test Accuracy on Task 4: 0.6131
Test Accuracy on Task 5: 0.6916
Test Accuracy on Task 6: 0.6745
```

```
Test Accuracy on Task 7: 0.6861
Test Accuracy on Task 8: 0.6872
Test Accuracy on Task 9: 0.7034
Test Accuracy on Task 10: 0.6443

Final: ACC: 0.6671, BWT: -0.0447
```
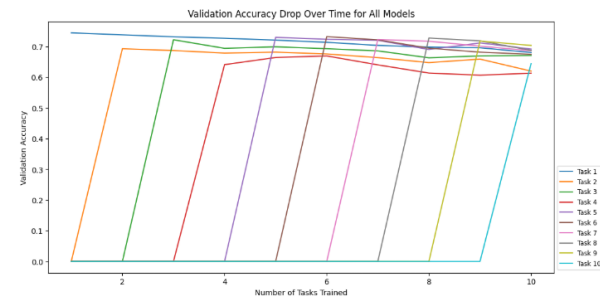

Figure 26: Experiment 13

```
Experiment 14: Best Loss (L1), Best Optimizer(SGD), Depth 3, Best Dropout (0.3)
Running Experiment: Loss=L1, Optimizer=SGD, Depth=3, Dropout=0.3

Training on Task 1/10...
Epoch 1/50, Loss: 84.2948, Accuracy: 0.1059
Epoch 5/50, Loss: 80.6766, Accuracy: 0.2338
Epoch 10/50, Loss: 68.9536, Accuracy: 0.4598
Epoch 15/50, Loss: 55.8897, Accuracy: 0.4869
Epoch 20/50, Loss: 50.9736, Accuracy: 0.5109
Epoch 25/50, Loss: 46.2160, Accuracy: 0.5733
Epoch 30/50, Loss: 41.5503, Accuracy: 0.6408
Epoch 35/50, Loss: 38.1175, Accuracy: 0.6837
Epoch 40/50, Loss: 34.6800, Accuracy: 0.7245
Epoch 45/50, Loss: 32.2760, Accuracy: 0.7358
Epoch 50/50, Loss: 30.7315, Accuracy: 0.7407
Test Accuracy on Task 1: 0.7407

Training on Task 2/10...
Epoch 1/20, Loss: 82.2528, Accuracy: 0.7380
Epoch 5/20, Loss: 55.4174, Accuracy: 0.7287
Epoch 10/20, Loss: 40.8985, Accuracy: 0.7319
Epoch 15/20, Loss: 35.4297, Accuracy: 0.7275
Epoch 20/20, Loss: 32.3938, Accuracy: 0.7256
Test Accuracy on Task 1: 0.7256
Test Accuracy on Task 2: 0.7336

Training on Task 3/10...
Epoch 1/20, Loss: 78.0305, Accuracy: 0.7268
Epoch 5/20, Loss: 52.0642, Accuracy: 0.7309
Epoch 10/20, Loss: 38.8624, Accuracy: 0.7246
Epoch 15/20, Loss: 34.0922, Accuracy: 0.7176
Epoch 20/20, Loss: 31.5114, Accuracy: 0.7152
Test Accuracy on Task 1: 0.7152
Test Accuracy on Task 2: 0.7276
Test Accuracy on Task 3: 0.7302

Training on Task 4/10...
```

```
Epoch 1/20, Loss: 83.0250, Accuracy: 0.7113
Epoch 5/20, Loss: 55.1032, Accuracy: 0.7168
Epoch 10/20, Loss: 38.6586, Accuracy: 0.7213
Epoch 15/20, Loss: 33.3995, Accuracy: 0.7187
Epoch 20/20, Loss: 30.9184, Accuracy: 0.7162
Test Accuracy on Task 1: 0.7162
Test Accuracy on Task 2: 0.7187
Test Accuracy on Task 3: 0.7004
Test Accuracy on Task 4: 0.7325

Training on Task 5/10...
Epoch 1/20, Loss: 76.1244, Accuracy: 0.7154
Epoch 5/20, Loss: 49.8310, Accuracy: 0.7097
Epoch 10/20, Loss: 36.3865, Accuracy: 0.7057
Epoch 15/20, Loss: 32.1933, Accuracy: 0.7037
Epoch 20/20, Loss: 30.3155, Accuracy: 0.7009
Test Accuracy on Task 1: 0.7009
Test Accuracy on Task 2: 0.7133
Test Accuracy on Task 3: 0.7112
Test Accuracy on Task 4: 0.7183
Test Accuracy on Task 5: 0.7356

Training on Task 6/10...
Epoch 1/20, Loss: 75.7684, Accuracy: 0.7017
Epoch 5/20, Loss: 42.1425, Accuracy: 0.6918
Epoch 10/20, Loss: 33.7809, Accuracy: 0.6813
Epoch 15/20, Loss: 30.8839, Accuracy: 0.6727
Epoch 20/20, Loss: 29.3807, Accuracy: 0.6683
Test Accuracy on Task 1: 0.6683
Test Accuracy on Task 2: 0.7073
Test Accuracy on Task 3: 0.7008
Test Accuracy on Task 4: 0.7121
Test Accuracy on Task 5: 0.7264
Test Accuracy on Task 6: 0.7381

Training on Task 7/10...
Epoch 1/20, Loss: 80.4103, Accuracy: 0.6758
Epoch 5/20, Loss: 44.1533, Accuracy: 0.6904
Epoch 10/20, Loss: 34.0323, Accuracy: 0.6889
Epoch 15/20, Loss: 30.9261, Accuracy: 0.6875
Epoch 20/20, Loss: 29.3356, Accuracy: 0.6847
Test Accuracy on Task 1: 0.6847
Test Accuracy on Task 2: 0.7011
Test Accuracy on Task 3: 0.7006
Test Accuracy on Task 4: 0.7095
Test Accuracy on Task 5: 0.7253
Test Accuracy on Task 6: 0.7288
Test Accuracy on Task 7: 0.7373

Training on Task 8/10...
Epoch 1/20, Loss: 80.6881, Accuracy: 0.6858
Epoch 5/20, Loss: 47.3679, Accuracy: 0.6856
Epoch 10/20, Loss: 34.2936, Accuracy: 0.6768
Epoch 15/20, Loss: 30.8725, Accuracy: 0.6682
Epoch 20/20, Loss: 29.2053, Accuracy: 0.6635
Test Accuracy on Task 1: 0.6635
Test Accuracy on Task 2: 0.6931
Test Accuracy on Task 3: 0.6885
```

```
Test Accuracy on Task 4: 0.7015
Test Accuracy on Task 5: 0.6936
Test Accuracy on Task 6: 0.6822
Test Accuracy on Task 7: 0.7301
Test Accuracy on Task 8: 0.7365

Training on Task 9/10...
Epoch 1/20, Loss: 75.4342, Accuracy: 0.6670
Epoch 5/20, Loss: 44.9929, Accuracy: 0.6738
Epoch 10/20, Loss: 33.4160, Accuracy: 0.6658
Epoch 15/20, Loss: 30.3066, Accuracy: 0.6601
Epoch 20/20, Loss: 28.8748, Accuracy: 0.6543
Test Accuracy on Task 1: 0.6543
Test Accuracy on Task 2: 0.6663
Test Accuracy on Task 3: 0.6833
Test Accuracy on Task 4: 0.6860
Test Accuracy on Task 5: 0.6944
Test Accuracy on Task 6: 0.6876
Test Accuracy on Task 7: 0.7178
Test Accuracy on Task 8: 0.7301
Test Accuracy on Task 9: 0.7377

Training on Task 10/10...
Epoch 1/20, Loss: 78.2194, Accuracy: 0.6563
Epoch 5/20, Loss: 48.5583, Accuracy: 0.6471
Epoch 10/20, Loss: 35.7233, Accuracy: 0.6416
Epoch 15/20, Loss: 31.2169, Accuracy: 0.6301
Epoch 20/20, Loss: 29.2862, Accuracy: 0.6186
Test Accuracy on Task 1: 0.6186
Test Accuracy on Task 2: 0.6162
Test Accuracy on Task 3: 0.6638
Test Accuracy on Task 4: 0.6678
Test Accuracy on Task 5: 0.6897
Test Accuracy on Task 6: 0.6778
Test Accuracy on Task 7: 0.7123
Test Accuracy on Task 8: 0.7120
Test Accuracy on Task 9: 0.7293
Test Accuracy on Task 10: 0.7348

Final: ACC: 0.6822, BWT: -0.0594
```
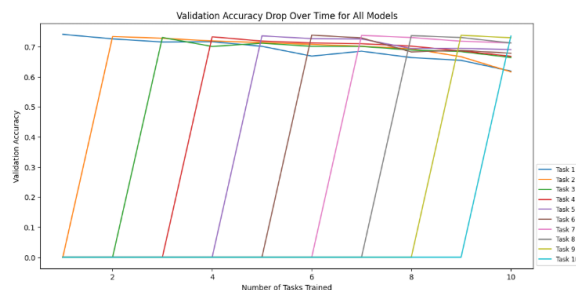

Figure 27: Experiment 14

```
Experiment 15: Best Loss (L1), Best Optimizer (SGD), Depth 4, Best Dropout (0.3)
Running Experiment: Loss=L1, Optimizer=SGD, Depth=4, Dropout=0.3
```

```
Training on Task 1/10...
Epoch 1/50, Loss: 84.3161, Accuracy: 0.1224
Epoch 5/50, Loss: 83.2703, Accuracy: 0.1440
Epoch 10/50, Loss: 80.0608, Accuracy: 0.2120
Epoch 15/50, Loss: 70.7899, Accuracy: 0.4149
Epoch 20/50, Loss: 57.5300, Accuracy: 0.5085
Epoch 25/50, Loss: 49.1979, Accuracy: 0.5582
Epoch 30/50, Loss: 45.5594, Accuracy: 0.5672
Epoch 35/50, Loss: 41.5005, Accuracy: 0.6535
Epoch 40/50, Loss: 38.2090, Accuracy: 0.6645
Epoch 45/50, Loss: 36.2785, Accuracy: 0.6682
Epoch 50/50, Loss: 35.2279, Accuracy: 0.6713
Test Accuracy on Task 1: 0.6713


Training on Task 2/10...
Epoch 1/20, Loss: 82.9568, Accuracy: 0.6666
Epoch 5/20, Loss: 53.1429, Accuracy: 0.6639
Epoch 10/20, Loss: 40.9141, Accuracy: 0.6638
Epoch 15/20, Loss: 37.3738, Accuracy: 0.6619
Epoch 20/20, Loss: 35.7573, Accuracy: 0.6614
Test Accuracy on Task 1: 0.6614
Test Accuracy on Task 2: 0.6677


Training on Task 3/10...
Epoch 1/20, Loss: 78.2577, Accuracy: 0.6580
Epoch 5/20, Loss: 46.5612, Accuracy: 0.6637
Epoch 10/20, Loss: 37.9829, Accuracy: 0.6619
Epoch 15/20, Loss: 35.8022, Accuracy: 0.6603
Epoch 20/20, Loss: 34.6188, Accuracy: 0.6595
Test Accuracy on Task 1: 0.6595
Test Accuracy on Task 2: 0.6630
Test Accuracy on Task 3: 0.6725


Training on Task 4/10...
Epoch 1/20, Loss: 79.0966, Accuracy: 0.6590
Epoch 5/20, Loss: 50.4210, Accuracy: 0.6611
Epoch 10/20, Loss: 38.7101, Accuracy: 0.6595
Epoch 15/20, Loss: 35.8644, Accuracy: 0.6577
Epoch 20/20, Loss: 34.4810, Accuracy: 0.6570
Test Accuracy on Task 1: 0.6570
Test Accuracy on Task 2: 0.6548
Test Accuracy on Task 3: 0.6607
Test Accuracy on Task 4: 0.6713


Training on Task 5/10...
Epoch 1/20, Loss: 74.6597, Accuracy: 0.6574
Epoch 5/20, Loss: 41.1923, Accuracy: 0.6457
Epoch 10/20, Loss: 36.3403, Accuracy: 0.6446
Epoch 15/20, Loss: 34.7331, Accuracy: 0.6432
Epoch 20/20, Loss: 33.7677, Accuracy: 0.6426
Test Accuracy on Task 1: 0.6426
Test Accuracy on Task 2: 0.6476
Test Accuracy on Task 3: 0.6587
Test Accuracy on Task 4: 0.6625
Test Accuracy on Task 5: 0.6723


Training on Task 6/10...
```

```
Epoch 1/20, Loss: 73.9917, Accuracy: 0.6406
Epoch 5/20, Loss: 40.6776, Accuracy: 0.6443
Epoch 10/20, Loss: 36.0851, Accuracy: 0.6419
Epoch 15/20, Loss: 34.5670, Accuracy: 0.6397
Epoch 20/20, Loss: 33.7257, Accuracy: 0.6372
Test Accuracy on Task 1: 0.6372
Test Accuracy on Task 2: 0.6427
Test Accuracy on Task 3: 0.6546
Test Accuracy on Task 4: 0.6590
Test Accuracy on Task 5: 0.6682
Test Accuracy on Task 6: 0.6733

Training on Task 7/10...
Epoch 1/20, Loss: 79.5976, Accuracy: 0.6384
Epoch 5/20, Loss: 42.4941, Accuracy: 0.6290
Epoch 10/20, Loss: 36.6237, Accuracy: 0.6285
Epoch 15/20, Loss: 34.6990, Accuracy: 0.6280
Epoch 20/20, Loss: 33.7239, Accuracy: 0.6258
Test Accuracy on Task 1: 0.6258
Test Accuracy on Task 2: 0.6346
Test Accuracy on Task 3: 0.6458
Test Accuracy on Task 4: 0.6497
Test Accuracy on Task 5: 0.6666
Test Accuracy on Task 6: 0.6627
Test Accuracy on Task 7: 0.6703

Training on Task 8/10...
Epoch 1/20, Loss: 75.9086, Accuracy: 0.6143
Epoch 5/20, Loss: 40.8456, Accuracy: 0.6143
Epoch 10/20, Loss: 36.0103, Accuracy: 0.6083
Epoch 15/20, Loss: 34.4494, Accuracy: 0.6062
Epoch 20/20, Loss: 33.5825, Accuracy: 0.6025
Test Accuracy on Task 1: 0.6025
Test Accuracy on Task 2: 0.6095
Test Accuracy on Task 3: 0.6288
Test Accuracy on Task 4: 0.6447
Test Accuracy on Task 5: 0.6437
Test Accuracy on Task 6: 0.6405
Test Accuracy on Task 7: 0.6638
Test Accuracy on Task 8: 0.6703

Training on Task 9/10...
Epoch 1/20, Loss: 73.9006, Accuracy: 0.6139
Epoch 5/20, Loss: 42.6653, Accuracy: 0.6194
Epoch 10/20, Loss: 36.1577, Accuracy: 0.6150
Epoch 15/20, Loss: 34.3807, Accuracy: 0.6095
Epoch 20/20, Loss: 33.4623, Accuracy: 0.6063
Test Accuracy on Task 1: 0.6063
Test Accuracy on Task 2: 0.6211
Test Accuracy on Task 3: 0.6272
Test Accuracy on Task 4: 0.6366
Test Accuracy on Task 5: 0.6553
Test Accuracy on Task 6: 0.6409
Test Accuracy on Task 7: 0.6460
Test Accuracy on Task 8: 0.6638
Test Accuracy on Task 9: 0.6727

Training on Task 10/10...
```

```
Epoch 1/20, Loss: 71.1031, Accuracy: 0.6074
Epoch 5/20, Loss: 48.1295, Accuracy: 0.6148
Epoch 10/20, Loss: 36.3964, Accuracy: 0.6030
Epoch 15/20, Loss: 34.2898, Accuracy: 0.5963
Epoch 20/20, Loss: 33.3265, Accuracy: 0.5901
Test Accuracy on Task 1: 0.5901
Test Accuracy on Task 2: 0.5923
Test Accuracy on Task 3: 0.6307
Test Accuracy on Task 4: 0.6381
Test Accuracy on Task 5: 0.6594
Test Accuracy on Task 6: 0.6538
Test Accuracy on Task 7: 0.6367
Test Accuracy on Task 8: 0.6536
Test Accuracy on Task 9: 0.6680
Test Accuracy on Task 10: 0.6742


Final: ACC: 0.6397, BWT: -0.0354
```
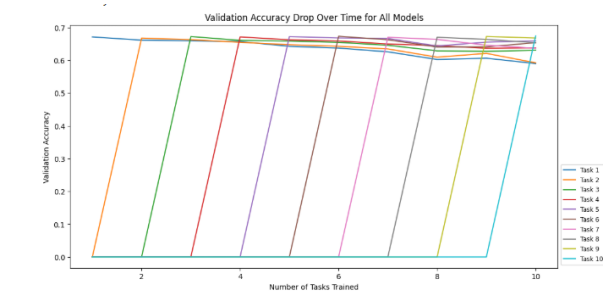

Figure 28: Experiment 15

```
Experiment 16: Best Loss (L1), Best Optimizer (SGD), Depth 2, Best Dropout (0.3)
Running Experiment: Loss=L1, Optimizer=SGD, Depth=2, Dropout=0.3

Training on Task 1/10...
Epoch 1/50, Loss: 83.7569, Accuracy: 0.1159
Epoch 5/50, Loss: 74.4092, Accuracy: 0.3894
Epoch 10/50, Loss: 58.6332, Accuracy: 0.5037
Epoch 15/50, Loss: 47.5500, Accuracy: 0.6327
Epoch 20/50, Loss: 40.6409, Accuracy: 0.7040
Epoch 25/50, Loss: 36.4280, Accuracy: 0.7161
Epoch 30/50, Loss: 33.9585, Accuracy: 0.7232
Epoch 35/50, Loss: 32.3304, Accuracy: 0.7304
Epoch 40/50, Loss: 31.1312, Accuracy: 0.7338
Epoch 45/50, Loss: 30.3075, Accuracy: 0.7373
Epoch 50/50, Loss: 29.4798, Accuracy: 0.7390
Test Accuracy on Task 1: 0.7390


Training on Task 2/10...
Epoch 1/20, Loss: 82.6169, Accuracy: 0.7379
Epoch 5/20, Loss: 66.3375, Accuracy: 0.7363
Epoch 10/20, Loss: 49.8425, Accuracy: 0.7327
Epoch 15/20, Loss: 41.8984, Accuracy: 0.7310
Epoch 20/20, Loss: 38.5366, Accuracy: 0.7333
Test Accuracy on Task 1: 0.7333
Test Accuracy on Task 2: 0.6514
```

```
Training on Task 3/10...
Epoch 1/20, Loss: 80.8710, Accuracy: 0.7320
Epoch 5/20, Loss: 60.8523, Accuracy: 0.7196
Epoch 10/20, Loss: 54.2805, Accuracy: 0.7155
Epoch 15/20, Loss: 48.6703, Accuracy: 0.7190
Epoch 20/20, Loss: 42.8673, Accuracy: 0.7150
Test Accuracy on Task 1: 0.7150
Test Accuracy on Task 2: 0.6461
Test Accuracy on Task 3: 0.6234


Training on Task 4/10...
Epoch 1/20, Loss: 81.8136, Accuracy: 0.7087
Epoch 5/20, Loss: 65.7202, Accuracy: 0.6874
Epoch 10/20, Loss: 52.8857, Accuracy: 0.6876
Epoch 15/20, Loss: 45.2166, Accuracy: 0.6992
Epoch 20/20, Loss: 38.7507, Accuracy: 0.7229
Test Accuracy on Task 1: 0.7229
Test Accuracy on Task 2: 0.6345
Test Accuracy on Task 3: 0.5837
Test Accuracy on Task 4: 0.7009


Training on Task 5/10...
Epoch 1/20, Loss: 78.0016, Accuracy: 0.7201
Epoch 5/20, Loss: 53.9295, Accuracy: 0.7238
Epoch 10/20, Loss: 39.7633, Accuracy: 0.7186
Epoch 15/20, Loss: 34.8882, Accuracy: 0.7157
Epoch 20/20, Loss: 32.4147, Accuracy: 0.7140
Test Accuracy on Task 1: 0.7140
Test Accuracy on Task 2: 0.6350
Test Accuracy on Task 3: 0.5846
Test Accuracy on Task 4: 0.6857
Test Accuracy on Task 5: 0.7310


Training on Task 6/10...
Epoch 1/20, Loss: 78.2909, Accuracy: 0.7091
Epoch 5/20, Loss: 48.3597, Accuracy: 0.6973
Epoch 10/20, Loss: 40.2385, Accuracy: 0.6915
Epoch 15/20, Loss: 37.5429, Accuracy: 0.6880
Epoch 20/20, Loss: 36.1876, Accuracy: 0.6868
Test Accuracy on Task 1: 0.6868
Test Accuracy on Task 2: 0.6273
Test Accuracy on Task 3: 0.5775
Test Accuracy on Task 4: 0.6603
Test Accuracy on Task 5: 0.7198
Test Accuracy on Task 6: 0.6568


Training on Task 7/10...
Epoch 1/20, Loss: 81.7109, Accuracy: 0.6921
Epoch 5/20, Loss: 54.9500, Accuracy: 0.6953
Epoch 10/20, Loss: 41.3775, Accuracy: 0.6884
Epoch 15/20, Loss: 37.9935, Accuracy: 0.6878
Epoch 20/20, Loss: 36.3931, Accuracy: 0.6899
Test Accuracy on Task 1: 0.6899
Test Accuracy on Task 2: 0.6318
Test Accuracy on Task 3: 0.5890
Test Accuracy on Task 4: 0.6749
Test Accuracy on Task 5: 0.7143
Test Accuracy on Task 6: 0.6497
```

```
Test Accuracy on Task 7: 0.6549

Training on Task 8/10...
Epoch 1/20, Loss: 82.0790, Accuracy: 0.6919
Epoch 5/20, Loss: 59.0130, Accuracy: 0.6915
Epoch 10/20, Loss: 46.5842, Accuracy: 0.6905
Epoch 15/20, Loss: 38.9836, Accuracy: 0.6854
Epoch 20/20, Loss: 36.8451, Accuracy: 0.6845
Test Accuracy on Task 1: 0.6845
Test Accuracy on Task 2: 0.6247
Test Accuracy on Task 3: 0.5697
Test Accuracy on Task 4: 0.6529
Test Accuracy on Task 5: 0.6851
Test Accuracy on Task 6: 0.6145
Test Accuracy on Task 7: 0.6489
Test Accuracy on Task 8: 0.6498

Training on Task 9/10...
Epoch 1/20, Loss: 79.0061, Accuracy: 0.6817
Epoch 5/20, Loss: 60.7362, Accuracy: 0.6760
Epoch 10/20, Loss: 57.1358, Accuracy: 0.6886
Epoch 15/20, Loss: 46.6982, Accuracy: 0.6921
Epoch 20/20, Loss: 43.7113, Accuracy: 0.6992
Test Accuracy on Task 1: 0.6992
Test Accuracy on Task 2: 0.5954
Test Accuracy on Task 3: 0.5278
Test Accuracy on Task 4: 0.6196
Test Accuracy on Task 5: 0.6918
Test Accuracy on Task 6: 0.6208
Test Accuracy on Task 7: 0.6371
Test Accuracy on Task 8: 0.6344
Test Accuracy on Task 9: 0.5689

Training on Task 10/10...
Epoch 1/20, Loss: 80.6279, Accuracy: 0.7019
Epoch 5/20, Loss: 59.9485, Accuracy: 0.6955
Epoch 10/20, Loss: 48.4005, Accuracy: 0.6930
Epoch 15/20, Loss: 40.9041, Accuracy: 0.6856
Epoch 20/20, Loss: 37.9906, Accuracy: 0.6830
Test Accuracy on Task 1: 0.6830
Test Accuracy on Task 2: 0.5925
Test Accuracy on Task 3: 0.5593
Test Accuracy on Task 4: 0.6386
Test Accuracy on Task 5: 0.6896
Test Accuracy on Task 6: 0.6320
Test Accuracy on Task 7: 0.6336
Test Accuracy on Task 8: 0.6270
Test Accuracy on Task 9: 0.5768
Test Accuracy on Task 10: 0.6433

ACC: 0.6276, BWT: -0.0382
```
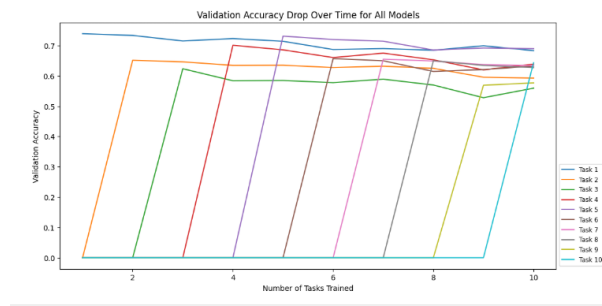
Figure 29: Experiment 16