

## Output from Code

### Reproducibility

Fix random seeds:

```
import torch, random, numpy as np
torch.manual_seed(42)
np.random.seed(42)
random.seed(42)
```

```
python src/test.py
```

=== Dataset of experiment results ===

Total experiments: 42

Unique architectures: ['RNN' 'LSTM']

Sequence lengths tested: [np.int64(25), np.int64(50), np.int64(100)]

### Top 5 models by F1:

Model	Architecture	Activation	Optimizer	Seq Length	F1	Accuracy
LSTM_relu_Adam_seq100_no clip	LSTM	relu	Adam	100	0.81547	0.81552
LSTM_relu_Adam_seq100_clip	LSTM	relu	Adam	100	0.80870	0.80932
LSTM_relu_RMSProp_seq100_clip	LSTM	relu	RMSProp	100	0.80197	0.80296
LSTM_relu_RMSProp_seq100_noclip	LSTM	relu	RMSProp	100	0.77336	0.77780
RNN_relu_RMSProp_seq50_clip	RNN	relu	RMSProp	50	0.76693	0.76772

**Bottom 5 models by F1:**

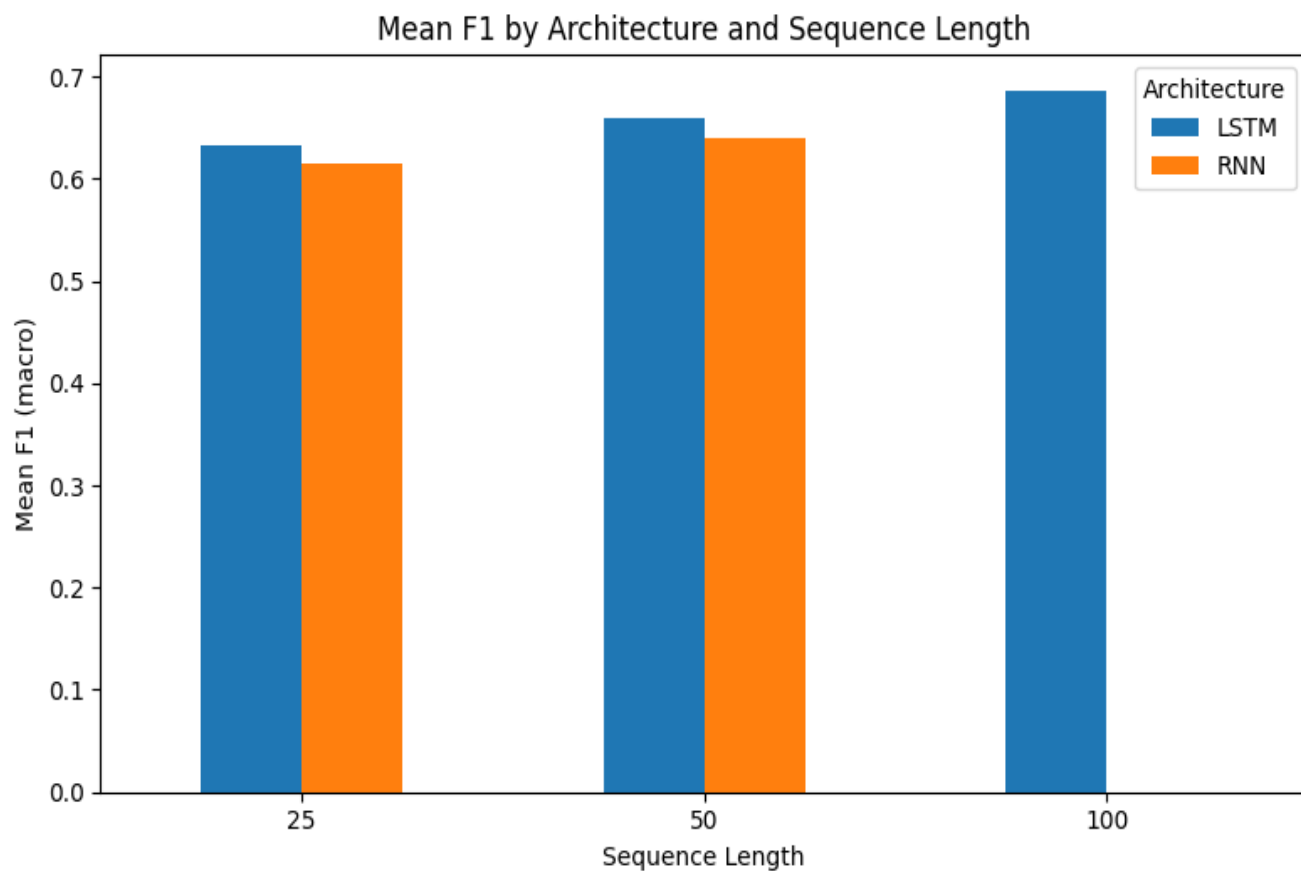
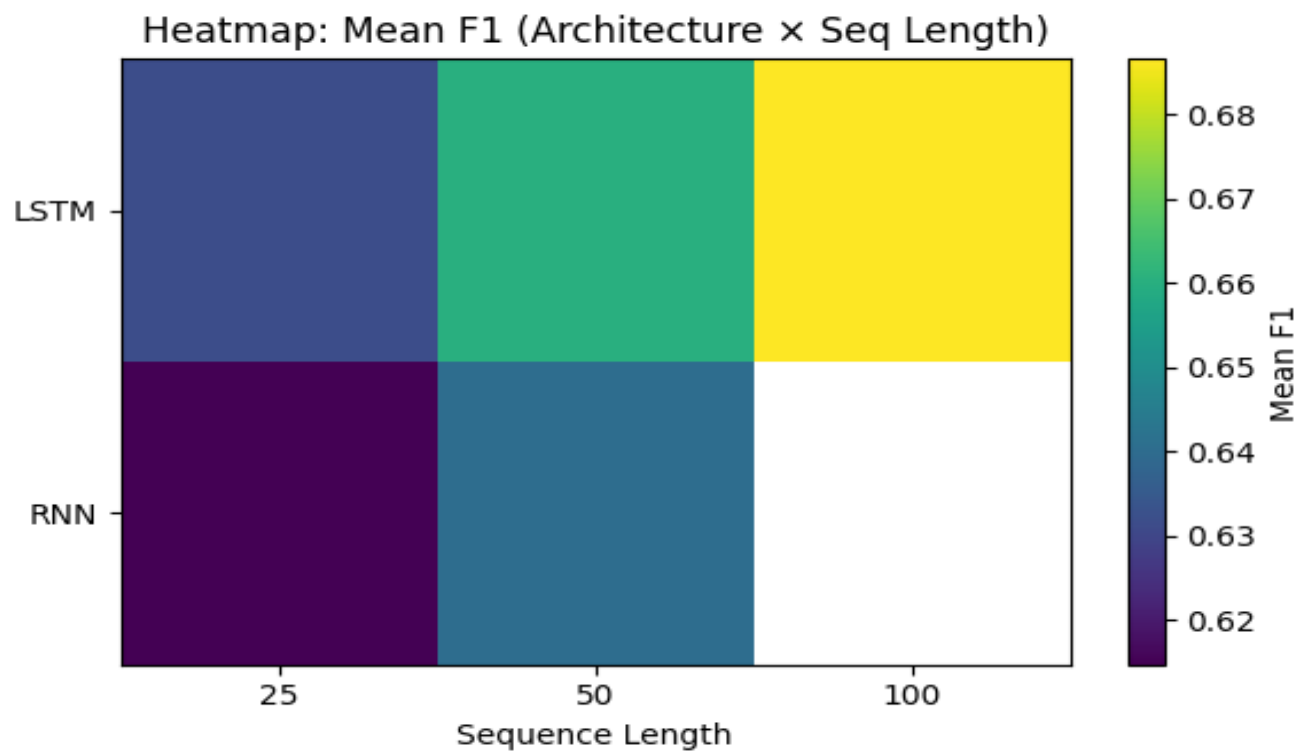
Model	Architecture	Activation	Optimizer	Seq Length	F1	Accuracy
RNN_relu_SGD_seq50_noclip	RNN	relu	SGD	50	0.33333	0.50000
RNN_relu_SGD_seq50_clip	RNN	relu	SGD	50	0.33333	0.50000
RNN_relu_SGD_seq25_noclip	RNN	relu	SGD	25	0.33358	0.50008
RNN_relu_SGD_seq25_clip	RNN	relu	SGD	25	0.33358	0.50008
LSTM_relu_SGD_seq100_noclip	LSTM	relu	SGD	100	0.45984	0.49432

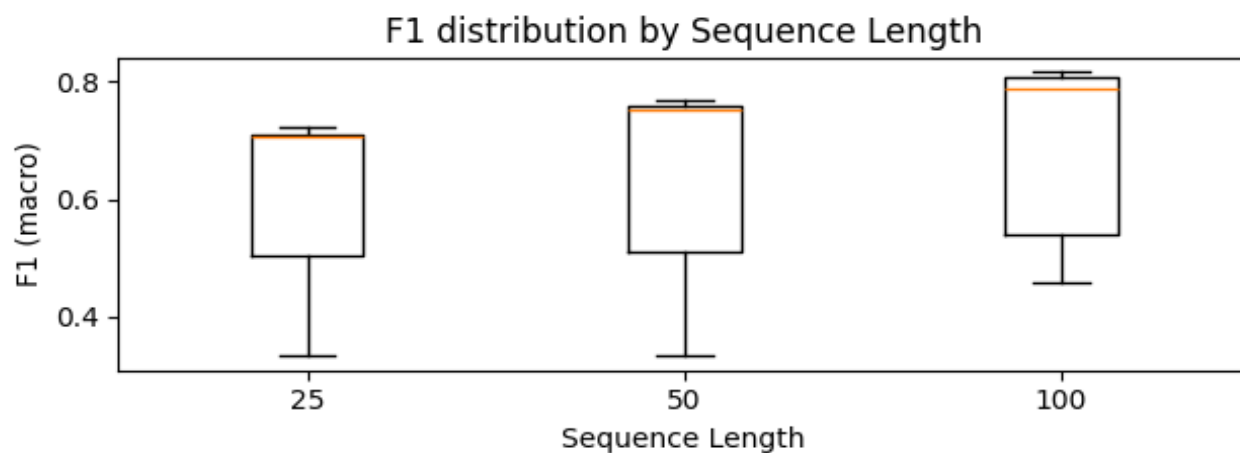
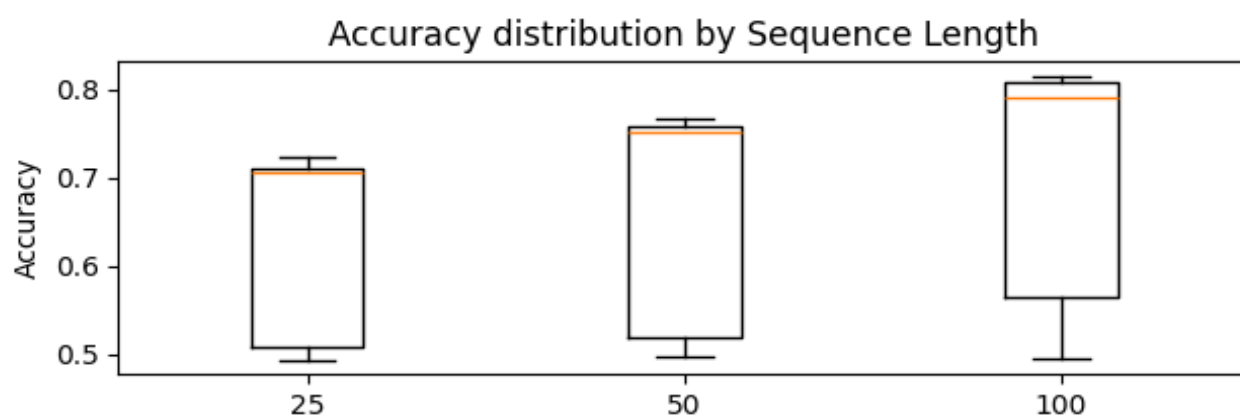
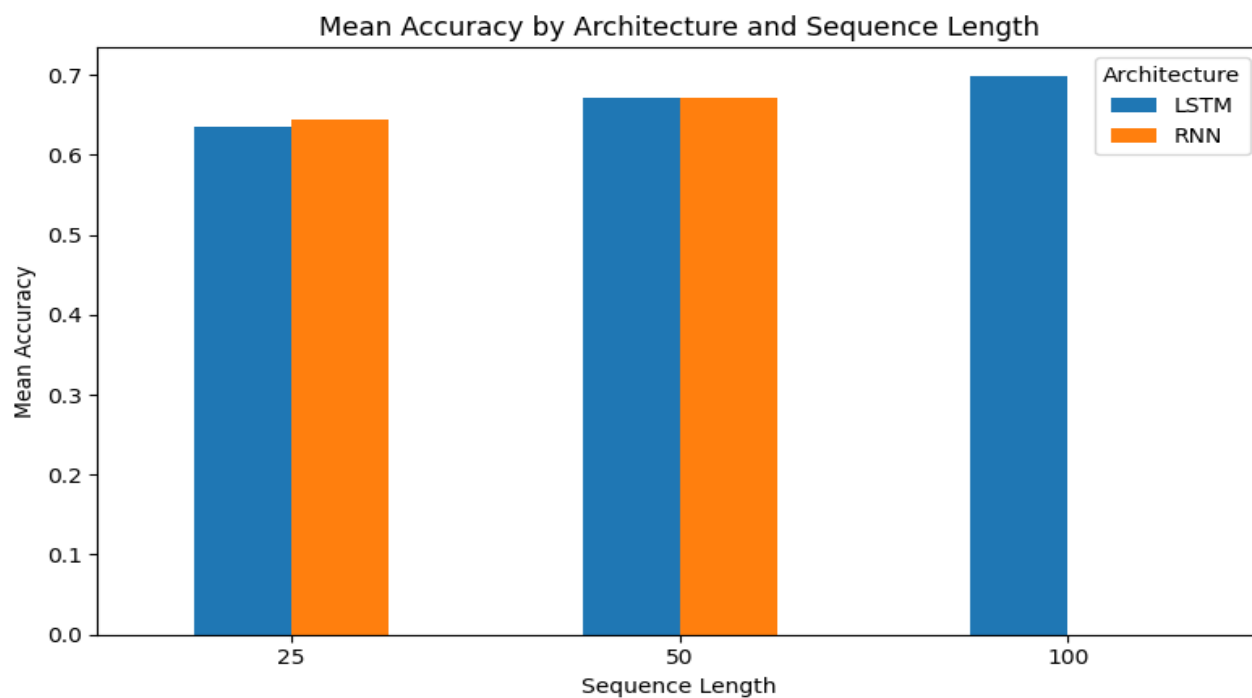
**Top 5 models by Accuracy:**

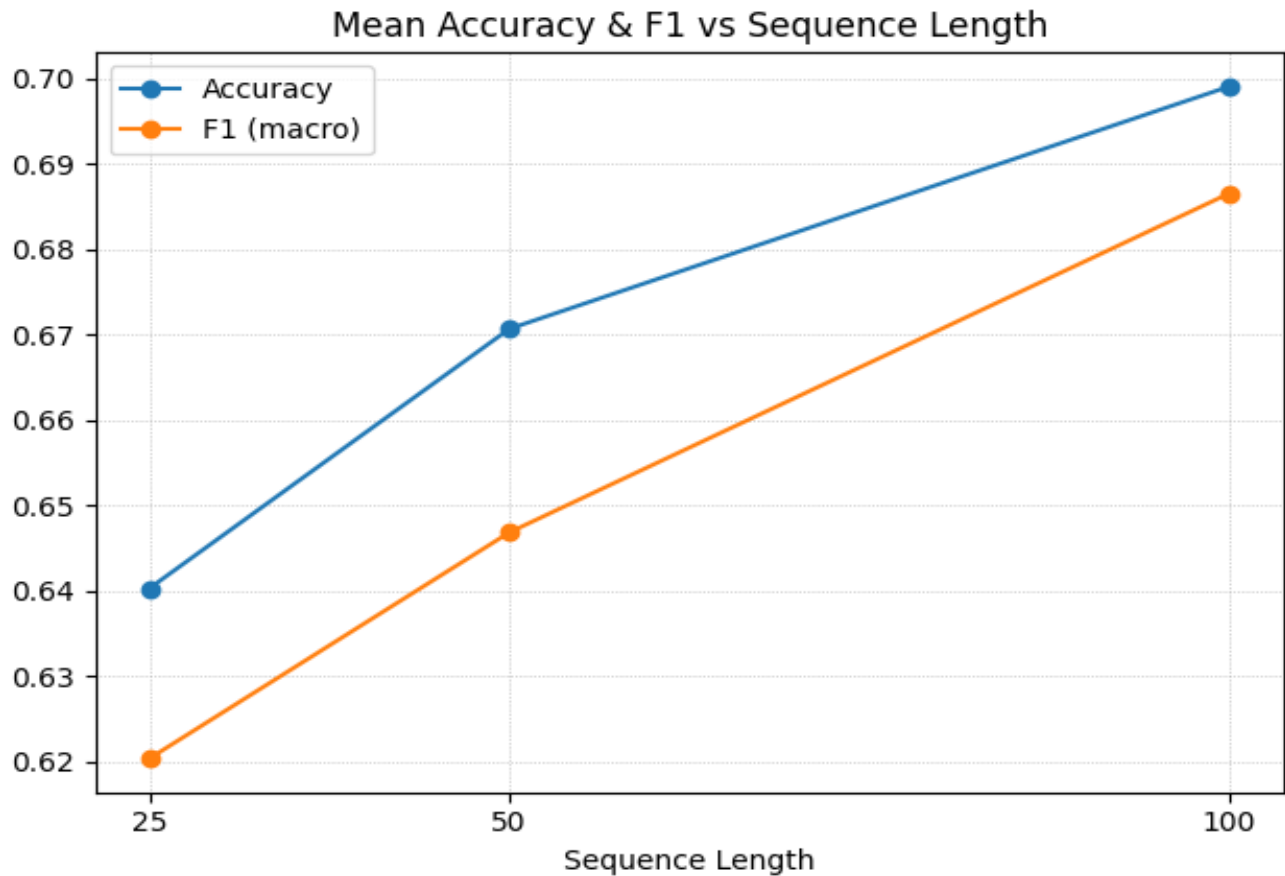
Model	Architecture	Activation	Optimizer	Seq Length	F1	Accuracy
LSTM_relu_Adam_seq100_noclip	LSTM	relu	Adam	100	0.81552	0.815475
LSTM_relu_Adam_seq100_clip	LSTM	relu	Adam	100	0.80932	0.808705
LSTM_relu_RMSProp_seq100_clip	LSTM	relu	RMSProp	100	0.80296	0.801974
LSTM_relu_RMSProp_seq100_noclip	LSTM	relu	RMSProp	100	0.77780	0.773360
RNN_relu_RMSProp_seq50_clip	RNN	relu	RMSProp	50	0.76772	0.766935

**Bottom 5 models by Accuracy:**

Model	Architecture	Activation	Optimizer	Seq Length	F1	Accuracy
LSTM_relu_SGD_seq25_no clip	LSTM	relu	SGD	25	0.49356	0.486414
LSTM_relu_SGD_seq25_clip	LSTM	relu	SGD	25	0.49356	0.486414
LSTM_relu_SGD_seq100_noclip	LSTM	relu	SGD	100	0.49432	0.459843
LSTM_relu_SGD_seq100_clip	LSTM	relu	SGD	100	0.49432	0.459843
LSTM_relu_SGD_seq50_clip	LSTM	relu	SGD	50	0.49600	0.464383







Saved summary to results/summary.csv

Saved: results/plots/acc\_f1\_vs\_seq.png

/Users/riyayrd/Downloads/Projects/Sentiment\_Classification/src/test.py:110:

MatplotlibDeprecationWarning: The 'labels' parameter of boxplot() has been renamed 'tick\_labels' since Matplotlib 3.9; support for the old name will be dropped in 3.11.

```
plt.boxplot(acc_groups, labels=sorted(df["Seq Length"].unique()))
```

/Users/riyayrd/Downloads/Projects/Sentiment\_Classification/src/test.py:116:

MatplotlibDeprecationWarning: The 'labels' parameter of boxplot() has been renamed 'tick\_labels' since Matplotlib 3.9; support for the old name will be dropped in 3.11.

```
plt.boxplot(f1_groups, labels=sorted(df["Seq Length"].unique()))
```

Saved: results/plots/acc\_f1\_box\_by\_seq.png

Saved: results/plots/acc\_by\_arch\_seq.png

Saved: results/plots/f1\_by\_arch\_seq.png

Saved: results/plots/f1\_heatmap\_arch\_seq.png

All done. Inspect the plots in results/plots

PYTHONPATH=src python run\_experiments.py --epochs 10

Experiment 1/42: Running RNN\_relu\_Adam\_seq25\_noclip

[RNN\_relu\_Adam\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6548 val\_loss=0.5938 acc=0.6707 f1=0.6706 time=5.07s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 2/10 | train\_loss=0.5586 val\_loss=0.5508 acc=0.7091 f1=0.7091 time=4.80s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 3/10 | train\_loss=0.4954 val\_loss=0.5477 acc=0.7123 f1=0.7106 time=4.95s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 4/10 | train\_loss=0.4469 val\_loss=0.5418 acc=0.7185 f1=0.7178 time=5.34s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 5/10 | train\_loss=0.4042 val\_loss=0.5902 acc=0.7164 f1=0.7124 time=4.86s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 6/10 | train\_loss=0.3683 val\_loss=0.6430 acc=0.7182 f1=0.7169 time=4.87s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 7/10 | train\_loss=0.3327 val\_loss=0.6201 acc=0.7179 f1=0.7178 time=4.96s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 8/10 | train\_loss=0.2976 val\_loss=0.7390 acc=0.7155 f1=0.7155 time=5.04s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 9/10 | train\_loss=0.2647 val\_loss=0.7306 acc=0.7119 f1=0.7114 time=5.06s  
[RNN\_relu\_Adam\_seq25\_noclip] Epoch 10/10 | train\_loss=0.2395 val\_loss=0.7916 acc=0.7086 f1=0.7083 time=4.85s

Experiment 2/42: Running RNN\_relu\_Adam\_seq25\_clip

[RNN\_relu\_Adam\_seq25\_clip] Epoch 1/10 | train\_loss=0.6541 val\_loss=0.5943 acc=0.6722 f1=0.6722 time=5.43s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 2/10 | train\_loss=0.5582 val\_loss=0.5498 acc=0.7094 f1=0.7094 time=5.26s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 3/10 | train\_loss=0.4961 val\_loss=0.5552 acc=0.7037 f1=0.6996 time=5.27s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 4/10 | train\_loss=0.4463 val\_loss=0.5488 acc=0.7146 f1=0.7130 time=5.32s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 5/10 | train\_loss=0.4043 val\_loss=0.6066 acc=0.7172 f1=0.7138 time=5.27s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 6/10 | train\_loss=0.3670 val\_loss=0.6357 acc=0.7183 f1=0.7165 time=5.25s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 7/10 | train\_loss=0.3328 val\_loss=0.6309 acc=0.7205 f1=0.7205 time=5.40s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 8/10 | train\_loss=0.2967 val\_loss=0.7381 acc=0.7147 f1=0.7146 time=5.28s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 9/10 | train\_loss=0.2644 val\_loss=0.7651 acc=0.7139 f1=0.7138 time=5.28s  
[RNN\_relu\_Adam\_seq25\_clip] Epoch 10/10 | train\_loss=0.2396 val\_loss=0.8977 acc=0.7136 f1=0.7135 time=5.55s

Experiment 3/42: Running RNN\_relu\_Adam\_seq50\_noclip

[RNN\_relu\_Adam\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6315 val\_loss=0.5375 acc=0.7219 f1=0.7197 time=7.37s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 2/10 | train\_loss=0.4907 val\_loss=0.4829 acc=0.7643 f1=0.7643 time=7.59s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 3/10 | train\_loss=0.4202 val\_loss=0.4851 acc=0.7693 f1=0.7689 time=7.32s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 4/10 | train\_loss=0.3705 val\_loss=0.4756 acc=0.7723 f1=0.7723 time=7.66s

[RNN\_relu\_Adam\_seq50\_noclip] Epoch 5/10 | train\_loss=0.3282 val\_loss=0.5225 acc=0.7724 f1=0.7723 time=7.32s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 6/10 | train\_loss=0.2885 val\_loss=0.5416 acc=0.7684 f1=0.7683 time=7.68s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 7/10 | train\_loss=0.2564 val\_loss=0.5693 acc=0.7661 f1=0.7660 time=7.40s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 8/10 | train\_loss=0.2203 val\_loss=0.7177 acc=0.7639 f1=0.7639 time=7.43s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 9/10 | train\_loss=0.1913 val\_loss=0.7096 acc=0.7584 f1=0.7581 time=7.40s  
[RNN\_relu\_Adam\_seq50\_noclip] Epoch 10/10 | train\_loss=0.1630 val\_loss=0.8752 acc=0.7542 f1=0.7530 time=8.46s

Experiment 4/42: Running RNN\_relu\_Adam\_seq50\_clip

[RNN\_relu\_Adam\_seq50\_clip] Epoch 1/10 | train\_loss=0.6285 val\_loss=0.5380 acc=0.7212 f1=0.7185 time=8.11s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 2/10 | train\_loss=0.4896 val\_loss=0.4884 acc=0.7614 f1=0.7610 time=8.70s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 3/10 | train\_loss=0.4171 val\_loss=0.4964 acc=0.7712 f1=0.7710 time=8.73s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 4/10 | train\_loss=0.3690 val\_loss=0.4844 acc=0.7719 f1=0.7715 time=8.53s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 5/10 | train\_loss=0.3269 val\_loss=0.5433 acc=0.7718 f1=0.7718 time=8.72s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 6/10 | train\_loss=0.2841 val\_loss=0.5497 acc=0.7706 f1=0.7702 time=8.64s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 7/10 | train\_loss=0.2552 val\_loss=0.6699 acc=0.7566 f1=0.7537 time=8.17s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 8/10 | train\_loss=0.2224 val\_loss=0.6948 acc=0.7641 f1=0.7640 time=8.65s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 9/10 | train\_loss=0.1940 val\_loss=0.7123 acc=0.7598 f1=0.7595 time=8.12s  
[RNN\_relu\_Adam\_seq50\_clip] Epoch 10/10 | train\_loss=0.1656 val\_loss=0.9394 acc=0.7599 f1=0.7595 time=8.36s

Experiment 5/42: Running RNN\_relu\_SGD\_seq25\_noclip

[RNN\_relu\_SGD\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6943 val\_loss=0.6933 acc=0.5000 f1=0.3333 time=3.99s  
[RNN\_relu\_SGD\_seq25\_noclip] Epoch 2/10 | train\_loss=0.6936 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=3.98s  
[RNN\_relu\_SGD\_seq25\_noclip] Epoch 3/10 | train\_loss=0.6936 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=4.09s  
[RNN\_relu\_SGD\_seq25\_noclip] Epoch 4/10 | train\_loss=0.6940 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=3.89s  
[RNN\_relu\_SGD\_seq25\_noclip] Epoch 5/10 | train\_loss=0.6940 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=3.95s  
[RNN\_relu\_SGD\_seq25\_noclip] Epoch 6/10 | train\_loss=0.6937 val\_loss=0.6931 acc=0.5002 f1=0.3339 time=3.85s  
[RNN\_relu\_SGD\_seq25\_noclip] Epoch 7/10 | train\_loss=0.6932 val\_loss=0.6931 acc=0.5001 f1=0.3337 time=4.01s  
[RNN\_relu\_SGD\_seq25\_noclip] Epoch 8/10 | train\_loss=0.6938 val\_loss=0.6931 acc=0.5002 f1=0.3341 time=3.83s



[RNN\_relu\_SGD\_seq25\_noclip] Epoch 9/10 | train\_loss=0.6937 val\_loss=0.6931 acc=0.5002  
f1=0.3340 time=3.78s

[RNN\_relu\_SGD\_seq25\_noclip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6931 acc=0.5001  
f1=0.3336 time=3.78s

Experiment 6/42: Running RNN\_relu\_SGD\_seq25\_clip

[RNN\_relu\_SGD\_seq25\_clip] Epoch 1/10 | train\_loss=0.6943 val\_loss=0.6933 acc=0.5000 f1=0.3333  
time=4.20s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 2/10 | train\_loss=0.6936 val\_loss=0.6932 acc=0.5000 f1=0.3333  
time=4.16s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 3/10 | train\_loss=0.6936 val\_loss=0.6932 acc=0.5000 f1=0.3333  
time=4.09s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 4/10 | train\_loss=0.6940 val\_loss=0.6932 acc=0.5000 f1=0.3333  
time=4.08s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 5/10 | train\_loss=0.6940 val\_loss=0.6932 acc=0.5000 f1=0.3333  
time=4.23s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 6/10 | train\_loss=0.6937 val\_loss=0.6931 acc=0.5002 f1=0.3339  
time=4.23s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 7/10 | train\_loss=0.6932 val\_loss=0.6931 acc=0.5001 f1=0.3337  
time=4.29s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 8/10 | train\_loss=0.6938 val\_loss=0.6931 acc=0.5002 f1=0.3341  
time=4.23s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 9/10 | train\_loss=0.6937 val\_loss=0.6931 acc=0.5002 f1=0.3340  
time=4.58s

[RNN\_relu\_SGD\_seq25\_clip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6931 acc=0.5001 f1=0.3336  
time=4.20s

Experiment 7/42: Running RNN\_relu\_SGD\_seq50\_noclip

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6940 val\_loss=0.6933 acc=0.5000  
f1=0.3333 time=6.46s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 2/10 | train\_loss=0.6940 val\_loss=0.6933 acc=0.5000  
f1=0.3333 time=6.56s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 3/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=6.46s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 4/10 | train\_loss=0.6937 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=6.61s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 5/10 | train\_loss=0.6937 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=6.51s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 6/10 | train\_loss=0.6935 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=6.44s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 7/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=6.63s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 8/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=6.47s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 9/10 | train\_loss=0.6942 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=6.68s

[RNN\_relu\_SGD\_seq50\_noclip] Epoch 10/10 | train\_loss=0.6939 val\_loss=0.6931 acc=0.5000  
f1=0.3333 time=6.42s

Experiment 8/42: Running RNN\_relu\_SGD\_seq50\_clip

[RNN\_relu\_SGD\_seq50\_clip] Epoch 1/10 | train\_loss=0.6940 val\_loss=0.6933 acc=0.5000 f1=0.3333  
time=6.82s

[RNN\_relu\_SGD\_seq50\_clip] Epoch 2/10 | train\_loss=0.6940 val\_loss=0.6933 acc=0.5000 f1=0.3333  
time=7.06s

[RNN\_relu\_SGD\_seq50\_clip] Epoch 3/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=6.72s  
[RNN\_relu\_SGD\_seq50\_clip] Epoch 4/10 | train\_loss=0.6937 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=6.87s  
[RNN\_relu\_SGD\_seq50\_clip] Epoch 5/10 | train\_loss=0.6937 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=6.81s  
[RNN\_relu\_SGD\_seq50\_clip] Epoch 6/10 | train\_loss=0.6935 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=7.02s  
[RNN\_relu\_SGD\_seq50\_clip] Epoch 7/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=6.84s  
[RNN\_relu\_SGD\_seq50\_clip] Epoch 8/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=6.90s  
[RNN\_relu\_SGD\_seq50\_clip] Epoch 9/10 | train\_loss=0.6942 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=6.92s  
[RNN\_relu\_SGD\_seq50\_clip] Epoch 10/10 | train\_loss=0.6939 val\_loss=0.6931 acc=0.5000 f1=0.3333 time=6.75s

Experiment 9/42: Running RNN\_relu\_RMSProp\_seq25\_noclip

[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6499 val\_loss=0.6117 acc=0.6566 f1=0.6423 time=5.05s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 2/10 | train\_loss=0.5682 val\_loss=0.5674 acc=0.6960 f1=0.6940 time=4.61s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 3/10 | train\_loss=0.5161 val\_loss=0.5437 acc=0.7156 f1=0.7156 time=4.85s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 4/10 | train\_loss=0.4776 val\_loss=0.5645 acc=0.7018 f1=0.6967 time=4.70s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 5/10 | train\_loss=0.4446 val\_loss=0.6303 acc=0.7034 f1=0.6939 time=4.57s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 6/10 | train\_loss=0.4104 val\_loss=0.6101 acc=0.7199 f1=0.7173 time=4.39s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 7/10 | train\_loss=0.3815 val\_loss=0.6164 acc=0.7099 f1=0.7024 time=4.34s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 8/10 | train\_loss=0.3536 val\_loss=0.5957 acc=0.7238 f1=0.7233 time=4.72s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 9/10 | train\_loss=0.3243 val\_loss=0.5847 acc=0.7262 f1=0.7258 time=5.48s  
[RNN\_relu\_RMSProp\_seq25\_noclip] Epoch 10/10 | train\_loss=0.2957 val\_loss=0.6133 acc=0.7228 f1=0.7228 time=5.85s

Experiment 10/42: Running RNN\_relu\_RMSProp\_seq25\_clip

[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 1/10 | train\_loss=0.6496 val\_loss=0.6029 acc=0.6680 f1=0.6615 time=5.74s  
[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 2/10 | train\_loss=0.5673 val\_loss=0.5568 acc=0.7033 f1=0.7033 time=5.71s  
[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 3/10 | train\_loss=0.5154 val\_loss=0.5449 acc=0.7139 f1=0.7137 time=5.48s  
[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 4/10 | train\_loss=0.4767 val\_loss=0.5627 acc=0.7034 f1=0.6988 time=6.17s  
[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 5/10 | train\_loss=0.4427 val\_loss=0.6819 acc=0.6962 f1=0.6835 time=10.06s  
[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 6/10 | train\_loss=0.4094 val\_loss=0.6063 acc=0.7214 f1=0.7199 time=8.21s

[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 7/10 | train\_loss=0.3806 val\_loss=0.5957 acc=0.7165  
f1=0.7120 time=6.28s

[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 8/10 | train\_loss=0.3494 val\_loss=0.6790 acc=0.7205  
f1=0.7191 time=6.84s

[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 9/10 | train\_loss=0.3267 val\_loss=0.6397 acc=0.7214  
f1=0.7196 time=6.37s

[RNN\_relu\_RMSProp\_seq25\_clip] Epoch 10/10 | train\_loss=0.2958 val\_loss=0.6537 acc=0.7237  
f1=0.7235 time=5.29s

Experiment 11/42: Running RNN\_relu\_RMSProp\_seq50\_noclip

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6235 val\_loss=0.6543 acc=0.6419  
f1=0.6003 time=8.39s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 2/10 | train\_loss=0.5088 val\_loss=0.5245 acc=0.7344  
f1=0.7301 time=8.88s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 3/10 | train\_loss=0.4475 val\_loss=0.4767 acc=0.7736  
f1=0.7734 time=8.74s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 4/10 | train\_loss=0.4057 val\_loss=0.4988 acc=0.7523  
f1=0.7483 time=8.86s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 5/10 | train\_loss=0.3704 val\_loss=0.4879 acc=0.7742  
f1=0.7741 time=8.81s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 6/10 | train\_loss=0.3363 val\_loss=0.4763 acc=0.7710  
f1=0.7702 time=8.52s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 7/10 | train\_loss=0.3108 val\_loss=0.5516 acc=0.7515  
f1=0.7478 time=8.56s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 8/10 | train\_loss=0.2840 val\_loss=0.6389 acc=0.7714  
f1=0.7703 time=8.52s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 9/10 | train\_loss=0.2572 val\_loss=0.6321 acc=0.7719  
f1=0.7709 time=8.48s

[RNN\_relu\_RMSProp\_seq50\_noclip] Epoch 10/10 | train\_loss=0.2321 val\_loss=0.9951 acc=0.7176  
f1=0.7037 time=8.43s

Experiment 12/42: Running RNN\_relu\_RMSProp\_seq50\_clip

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 1/10 | train\_loss=0.6230 val\_loss=0.5621 acc=0.6944  
f1=0.6806 time=8.74s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 2/10 | train\_loss=0.5077 val\_loss=0.5246 acc=0.7364  
f1=0.7320 time=9.10s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 3/10 | train\_loss=0.4462 val\_loss=0.4788 acc=0.7712  
f1=0.7711 time=9.29s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 4/10 | train\_loss=0.4032 val\_loss=0.4845 acc=0.7638  
f1=0.7622 time=8.80s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 5/10 | train\_loss=0.3680 val\_loss=0.5326 acc=0.7707  
f1=0.7707 time=9.32s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 6/10 | train\_loss=0.3332 val\_loss=0.4872 acc=0.7736  
f1=0.7735 time=9.32s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 7/10 | train\_loss=0.3090 val\_loss=0.5159 acc=0.7675  
f1=0.7667 time=9.39s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 8/10 | train\_loss=0.2818 val\_loss=0.6380 acc=0.7725  
f1=0.7721 time=9.11s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 9/10 | train\_loss=0.2523 val\_loss=0.8331 acc=0.7540  
f1=0.7503 time=9.64s

[RNN\_relu\_RMSProp\_seq50\_clip] Epoch 10/10 | train\_loss=0.2291 val\_loss=0.6690 acc=0.7677  
f1=0.7669 time=9.51s

Experiment 13/42: Running RNN\_tanh\_Adam\_seq25\_noclip

[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6508 val\_loss=0.6055 acc=0.6686 f1=0.6682 time=6.44s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 2/10 | train\_loss=0.5587 val\_loss=0.5676 acc=0.7044 f1=0.7044 time=6.90s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 3/10 | train\_loss=0.4925 val\_loss=0.5574 acc=0.7126 f1=0.7124 time=6.93s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 4/10 | train\_loss=0.4400 val\_loss=0.5696 acc=0.7182 f1=0.7181 time=6.42s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 5/10 | train\_loss=0.3924 val\_loss=0.5795 acc=0.7214 f1=0.7208 time=6.84s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 6/10 | train\_loss=0.3468 val\_loss=0.7020 acc=0.7192 f1=0.7184 time=6.39s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 7/10 | train\_loss=0.3031 val\_loss=0.6668 acc=0.7190 f1=0.7189 time=6.62s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 8/10 | train\_loss=0.2595 val\_loss=0.7886 acc=0.7090 f1=0.7085 time=6.90s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 9/10 | train\_loss=0.2154 val\_loss=0.7997 acc=0.7088 f1=0.7087 time=6.46s  
[RNN\_tanh\_Adam\_seq25\_noclip] Epoch 10/10 | train\_loss=0.1774 val\_loss=0.9187 acc=0.7053 f1=0.7052 time=7.06s

Experiment 14/42: Running RNN\_tanh\_Adam\_seq25\_clip

[RNN\_tanh\_Adam\_seq25\_clip] Epoch 1/10 | train\_loss=0.6508 val\_loss=0.6057 acc=0.6680 f1=0.6674 time=6.86s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 2/10 | train\_loss=0.5587 val\_loss=0.5675 acc=0.7044 f1=0.7044 time=7.21s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 3/10 | train\_loss=0.4923 val\_loss=0.5585 acc=0.7130 f1=0.7129 time=7.01s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 4/10 | train\_loss=0.4395 val\_loss=0.5713 acc=0.7188 f1=0.7187 time=91.04s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 5/10 | train\_loss=0.3907 val\_loss=0.5878 acc=0.7216 f1=0.7214 time=7.63s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 6/10 | train\_loss=0.3433 val\_loss=0.7123 acc=0.7211 f1=0.7210 time=7.63s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 7/10 | train\_loss=0.2981 val\_loss=0.6944 acc=0.7183 f1=0.7182 time=6.89s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 8/10 | train\_loss=0.2574 val\_loss=0.8745 acc=0.7111 f1=0.7110 time=6.77s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 9/10 | train\_loss=0.2128 val\_loss=0.8386 acc=0.7100 f1=0.7100 time=7.22s  
[RNN\_tanh\_Adam\_seq25\_clip] Epoch 10/10 | train\_loss=0.1818 val\_loss=0.9881 acc=0.7057 f1=0.7056 time=7.14s

Experiment 15/42: Running RNN\_tanh\_Adam\_seq50\_noclip

[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6174 val\_loss=0.5541 acc=0.7148 f1=0.7145 time=11.23s  
[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 2/10 | train\_loss=0.4919 val\_loss=0.5091 acc=0.7500 f1=0.7495 time=10.23s  
[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 3/10 | train\_loss=0.4187 val\_loss=0.5193 acc=0.7616 f1=0.7615 time=9.86s  
[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 4/10 | train\_loss=0.3603 val\_loss=0.5270 acc=0.7651 f1=0.7651 time=10.01s

[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 5/10 | train\_loss=0.3150 val\_loss=0.5752 acc=0.7663 f1=0.7661 time=9.77s

[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 6/10 | train\_loss=0.2656 val\_loss=0.5835 acc=0.7614 f1=0.7613 time=9.79s

[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 7/10 | train\_loss=0.2229 val\_loss=0.7038 acc=0.7557 f1=0.7549 time=10.39s

[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 8/10 | train\_loss=0.1770 val\_loss=0.7302 acc=0.7529 f1=0.7529 time=20.53s

[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 9/10 | train\_loss=0.1433 val\_loss=0.8730 acc=0.7539 f1=0.7536 time=13.37s

[RNN\_tanh\_Adam\_seq50\_noclip] Epoch 10/10 | train\_loss=0.1062 val\_loss=0.9174 acc=0.7498 f1=0.7498 time=13.60s

Experiment 16/42: Running RNN\_tanh\_Adam\_seq50\_clip

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 1/10 | train\_loss=0.6175 val\_loss=0.5534 acc=0.7160 f1=0.7158 time=10.82s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 2/10 | train\_loss=0.4919 val\_loss=0.5103 acc=0.7485 f1=0.7479 time=14.65s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 3/10 | train\_loss=0.4172 val\_loss=0.5291 acc=0.7597 f1=0.7597 time=11.13s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 4/10 | train\_loss=0.3592 val\_loss=0.5274 acc=0.7651 f1=0.7650 time=11.11s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 5/10 | train\_loss=0.3130 val\_loss=0.6105 acc=0.7620 f1=0.7618 time=11.85s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 6/10 | train\_loss=0.2610 val\_loss=0.5766 acc=0.7632 f1=0.7630 time=11.19s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 7/10 | train\_loss=0.2170 val\_loss=0.7417 acc=0.7550 f1=0.7544 time=12.36s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 8/10 | train\_loss=0.1748 val\_loss=0.7955 acc=0.7506 f1=0.7503 time=12.58s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 9/10 | train\_loss=0.1416 val\_loss=0.8678 acc=0.7498 f1=0.7498 time=11.74s

[RNN\_tanh\_Adam\_seq50\_clip] Epoch 10/10 | train\_loss=0.1112 val\_loss=0.9496 acc=0.7491 f1=0.7490 time=12.35s

Experiment 17/42: Running RNN\_tanh\_SGD\_seq25\_noclip

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6942 val\_loss=0.6935 acc=0.4957 f1=0.4365 time=5.69s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 2/10 | train\_loss=0.6939 val\_loss=0.6934 acc=0.4953 f1=0.4795 time=6.01s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 3/10 | train\_loss=0.6940 val\_loss=0.6933 acc=0.4935 f1=0.4924 time=5.72s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 4/10 | train\_loss=0.6937 val\_loss=0.6932 acc=0.4952 f1=0.4952 time=6.10s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 5/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.4992 f1=0.4986 time=6.21s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 6/10 | train\_loss=0.6937 val\_loss=0.6931 acc=0.5006 f1=0.4997 time=5.79s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 7/10 | train\_loss=0.6933 val\_loss=0.6931 acc=0.5026 f1=0.5012 time=5.88s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 8/10 | train\_loss=0.6934 val\_loss=0.6930 acc=0.5039 f1=0.5009 time=5.36s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 9/10 | train\_loss=0.6932 val\_loss=0.6930 acc=0.5068 f1=0.5027 time=6.31s

[RNN\_tanh\_SGD\_seq25\_noclip] Epoch 10/10 | train\_loss=0.6935 val\_loss=0.6929 acc=0.5084 f1=0.5042 time=6.39s

Experiment 18/42: Running RNN\_tanh\_SGD\_seq25\_clip

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 1/10 | train\_loss=0.6942 val\_loss=0.6935 acc=0.4957 f1=0.4365 time=6.62s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 2/10 | train\_loss=0.6939 val\_loss=0.6934 acc=0.4953 f1=0.4795 time=6.32s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 3/10 | train\_loss=0.6940 val\_loss=0.6933 acc=0.4935 f1=0.4924 time=6.53s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 4/10 | train\_loss=0.6937 val\_loss=0.6932 acc=0.4952 f1=0.4952 time=7.04s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 5/10 | train\_loss=0.6941 val\_loss=0.6932 acc=0.4992 f1=0.4986 time=6.54s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 6/10 | train\_loss=0.6937 val\_loss=0.6931 acc=0.5006 f1=0.4997 time=6.12s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 7/10 | train\_loss=0.6933 val\_loss=0.6931 acc=0.5026 f1=0.5012 time=6.30s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 8/10 | train\_loss=0.6934 val\_loss=0.6930 acc=0.5039 f1=0.5009 time=7.01s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 9/10 | train\_loss=0.6932 val\_loss=0.6930 acc=0.5068 f1=0.5027 time=6.69s

[RNN\_tanh\_SGD\_seq25\_clip] Epoch 10/10 | train\_loss=0.6935 val\_loss=0.6929 acc=0.5084 f1=0.5042 time=6.30s

Experiment 19/42: Running RNN\_tanh\_SGD\_seq50\_noclip

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6941 val\_loss=0.6934 acc=0.4943 f1=0.4044 time=10.60s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 2/10 | train\_loss=0.6941 val\_loss=0.6933 acc=0.4936 f1=0.4617 time=10.66s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 3/10 | train\_loss=0.6939 val\_loss=0.6932 acc=0.4940 f1=0.4853 time=10.87s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 4/10 | train\_loss=0.6936 val\_loss=0.6932 acc=0.4980 f1=0.4969 time=9.55s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 5/10 | train\_loss=0.6938 val\_loss=0.6931 acc=0.5034 f1=0.5031 time=9.37s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 6/10 | train\_loss=0.6938 val\_loss=0.6931 acc=0.5082 f1=0.5076 time=9.78s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 7/10 | train\_loss=0.6936 val\_loss=0.6930 acc=0.5118 f1=0.5084 time=9.39s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 8/10 | train\_loss=0.6934 val\_loss=0.6930 acc=0.5144 f1=0.5113 time=10.41s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 9/10 | train\_loss=0.6937 val\_loss=0.6929 acc=0.5154 f1=0.5108 time=10.30s

[RNN\_tanh\_SGD\_seq50\_noclip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6929 acc=0.5182 f1=0.5119 time=9.85s

Experiment 20/42: Running RNN\_tanh\_SGD\_seq50\_clip

[RNN\_tanh\_SGD\_seq50\_clip] Epoch 1/10 | train\_loss=0.6941 val\_loss=0.6934 acc=0.4943 f1=0.4044 time=10.54s

[RNN\_tanh\_SGD\_seq50\_clip] Epoch 2/10 | train\_loss=0.6941 val\_loss=0.6933 acc=0.4936 f1=0.4617 time=10.58s

[RNN\_tanh\_SGD\_seq50\_clip] Epoch 3/10 | train\_loss=0.6939 val\_loss=0.6932 acc=0.4940 f1=0.4853 time=10.01s  
[RNN\_tanh\_SGD\_seq50\_clip] Epoch 4/10 | train\_loss=0.6936 val\_loss=0.6932 acc=0.4980 f1=0.4969 time=10.71s  
[RNN\_tanh\_SGD\_seq50\_clip] Epoch 5/10 | train\_loss=0.6938 val\_loss=0.6931 acc=0.5034 f1=0.5031 time=10.40s  
[RNN\_tanh\_SGD\_seq50\_clip] Epoch 6/10 | train\_loss=0.6938 val\_loss=0.6931 acc=0.5082 f1=0.5076 time=9.71s  
[RNN\_tanh\_SGD\_seq50\_clip] Epoch 7/10 | train\_loss=0.6936 val\_loss=0.6930 acc=0.5118 f1=0.5084 time=10.04s  
[RNN\_tanh\_SGD\_seq50\_clip] Epoch 8/10 | train\_loss=0.6934 val\_loss=0.6930 acc=0.5144 f1=0.5113 time=10.59s  
[RNN\_tanh\_SGD\_seq50\_clip] Epoch 9/10 | train\_loss=0.6937 val\_loss=0.6929 acc=0.5154 f1=0.5108 time=10.49s  
[RNN\_tanh\_SGD\_seq50\_clip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6929 acc=0.5182 f1=0.5119 time=10.42s

Experiment 21/42: Running RNN\_tanh\_RMSProp\_seq25\_noclip

[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6476 val\_loss=0.6164 acc=0.6593 f1=0.6536 time=7.77s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 2/10 | train\_loss=0.5681 val\_loss=0.5716 acc=0.7012 f1=0.7011 time=6.94s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 3/10 | train\_loss=0.5131 val\_loss=0.5558 acc=0.7132 f1=0.7131 time=6.96s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 4/10 | train\_loss=0.4686 val\_loss=0.5732 acc=0.7144 f1=0.7131 time=7.39s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 5/10 | train\_loss=0.4318 val\_loss=0.6141 acc=0.7085 f1=0.7014 time=7.40s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 6/10 | train\_loss=0.3913 val\_loss=0.6660 acc=0.7202 f1=0.7191 time=7.20s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 7/10 | train\_loss=0.3562 val\_loss=0.6397 acc=0.7057 f1=0.6993 time=6.90s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 8/10 | train\_loss=0.3167 val\_loss=0.7249 acc=0.7158 f1=0.7141 time=7.16s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 9/10 | train\_loss=0.2824 val\_loss=0.6859 acc=0.7113 f1=0.7083 time=8.72s  
[RNN\_tanh\_RMSProp\_seq25\_noclip] Epoch 10/10 | train\_loss=0.2417 val\_loss=0.7468 acc=0.7103 f1=0.7101 time=8.60s

Experiment 22/42: Running RNN\_tanh\_RMSProp\_seq25\_clip

[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 1/10 | train\_loss=0.6476 val\_loss=0.6136 acc=0.6609 f1=0.6570 time=7.10s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 2/10 | train\_loss=0.5681 val\_loss=0.5717 acc=0.7015 f1=0.7015 time=6.81s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 3/10 | train\_loss=0.5130 val\_loss=0.5549 acc=0.7134 f1=0.7133 time=7.11s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 4/10 | train\_loss=0.4683 val\_loss=0.5713 acc=0.7140 f1=0.7127 time=6.94s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 5/10 | train\_loss=0.4314 val\_loss=0.6045 acc=0.7131 f1=0.7076 time=8.71s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 6/10 | train\_loss=0.3908 val\_loss=0.6788 acc=0.7210 f1=0.7197 time=7.90s

[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 7/10 | train\_loss=0.3554 val\_loss=0.6381 acc=0.7177  
f1=0.7156 time=7.69s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 8/10 | train\_loss=0.3163 val\_loss=0.7156 acc=0.7171  
f1=0.7165 time=6.40s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 9/10 | train\_loss=0.2822 val\_loss=0.7075 acc=0.7118  
f1=0.7098 time=6.99s  
[RNN\_tanh\_RMSProp\_seq25\_clip] Epoch 10/10 | train\_loss=0.2420 val\_loss=0.7863 acc=0.7115  
f1=0.7115 time=6.86s  
Experiment 23/42: Running RNN\_tanh\_RMSProp\_seq50\_noclip  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6135 val\_loss=0.5902 acc=0.6915  
f1=0.6823 time=10.20s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 2/10 | train\_loss=0.5046 val\_loss=0.5205 acc=0.7405  
f1=0.7386 time=10.06s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 3/10 | train\_loss=0.4391 val\_loss=0.5210 acc=0.7598  
f1=0.7590 time=9.92s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 4/10 | train\_loss=0.3902 val\_loss=0.4988 acc=0.7640  
f1=0.7633 time=10.41s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 5/10 | train\_loss=0.3534 val\_loss=0.5353 acc=0.7678  
f1=0.7678 time=11.37s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 6/10 | train\_loss=0.3130 val\_loss=0.4935 acc=0.7715  
f1=0.7714 time=11.57s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 7/10 | train\_loss=0.2780 val\_loss=0.6178 acc=0.7276  
f1=0.7199 time=10.30s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 8/10 | train\_loss=0.2424 val\_loss=0.6094 acc=0.7666  
f1=0.7664 time=10.20s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 9/10 | train\_loss=0.2047 val\_loss=0.7014 acc=0.7641  
f1=0.7636 time=10.68s  
[RNN\_tanh\_RMSProp\_seq50\_noclip] Epoch 10/10 | train\_loss=0.1670 val\_loss=0.8202 acc=0.7580  
f1=0.7568 time=9.96s  
Experiment 24/42: Running RNN\_tanh\_RMSProp\_seq50\_clip  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 1/10 | train\_loss=0.6132 val\_loss=0.5779 acc=0.7006  
f1=0.6947 time=10.64s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 2/10 | train\_loss=0.5043 val\_loss=0.5113 acc=0.7486  
f1=0.7482 time=11.10s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 3/10 | train\_loss=0.4398 val\_loss=0.5192 acc=0.7608  
f1=0.7607 time=10.31s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 4/10 | train\_loss=0.3913 val\_loss=0.4947 acc=0.7686  
f1=0.7686 time=9.96s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 5/10 | train\_loss=0.3544 val\_loss=0.5528 acc=0.7668  
f1=0.7667 time=10.16s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 6/10 | train\_loss=0.3156 val\_loss=0.5165 acc=0.7732  
f1=0.7732 time=10.10s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 7/10 | train\_loss=0.2804 val\_loss=0.5927 acc=0.7632  
f1=0.7628 time=10.43s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 8/10 | train\_loss=0.2443 val\_loss=0.6395 acc=0.7649  
f1=0.7649 time=10.29s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 9/10 | train\_loss=0.2057 val\_loss=0.7570 acc=0.7595  
f1=0.7583 time=10.15s  
[RNN\_tanh\_RMSProp\_seq50\_clip] Epoch 10/10 | train\_loss=0.1692 val\_loss=0.7346 acc=0.7555  
f1=0.7546 time=10.37s  
Experiment 25/42: Running LSTM\_relu\_Adam\_seq25\_noclip



[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6358 val\_loss=0.5805 acc=0.6829 f1=0.6823 time=12.64s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 2/10 | train\_loss=0.5273 val\_loss=0.5463 acc=0.7149 f1=0.7141 time=12.17s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 3/10 | train\_loss=0.4538 val\_loss=0.5676 acc=0.7223 f1=0.7212 time=12.14s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 4/10 | train\_loss=0.3865 val\_loss=0.5824 acc=0.7224 f1=0.7217 time=12.74s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 5/10 | train\_loss=0.3207 val\_loss=0.7207 acc=0.7167 f1=0.7149 time=12.45s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 6/10 | train\_loss=0.2544 val\_loss=0.7202 acc=0.7136 f1=0.7136 time=12.31s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 7/10 | train\_loss=0.1909 val\_loss=0.9565 acc=0.7077 f1=0.7060 time=12.40s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 8/10 | train\_loss=0.1383 val\_loss=1.1530 acc=0.7064 f1=0.7061 time=12.23s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 9/10 | train\_loss=0.1039 val\_loss=1.5330 acc=0.7034 f1=0.7034 time=12.24s  
[LSTM\_relu\_Adam\_seq25\_noclip] Epoch 10/10 | train\_loss=0.0802 val\_loss=1.7748 acc=0.7055 f1=0.7052 time=12.53s

Experiment 26/42: Running LSTM\_relu\_Adam\_seq25\_clip

[LSTM\_relu\_Adam\_seq25\_clip] Epoch 1/10 | train\_loss=0.6358 val\_loss=0.5803 acc=0.6823 f1=0.6817 time=12.82s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 2/10 | train\_loss=0.5273 val\_loss=0.5462 acc=0.7154 f1=0.7146 time=12.51s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 3/10 | train\_loss=0.4538 val\_loss=0.5698 acc=0.7212 f1=0.7200 time=12.84s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 4/10 | train\_loss=0.3856 val\_loss=0.5860 acc=0.7213 f1=0.7207 time=12.72s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 5/10 | train\_loss=0.3169 val\_loss=0.7453 acc=0.7172 f1=0.7153 time=12.71s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 6/10 | train\_loss=0.2465 val\_loss=0.7500 acc=0.7146 f1=0.7146 time=12.40s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 7/10 | train\_loss=0.1875 val\_loss=1.0637 acc=0.7062 f1=0.7047 time=12.61s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 8/10 | train\_loss=0.1390 val\_loss=1.4966 acc=0.7057 f1=0.7053 time=13.09s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 9/10 | train\_loss=0.1025 val\_loss=2.0535 acc=0.6996 f1=0.6996 time=12.89s  
[LSTM\_relu\_Adam\_seq25\_clip] Epoch 10/10 | train\_loss=0.0770 val\_loss=2.1512 acc=0.7038 f1=0.7038 time=12.91s

Experiment 27/42: Running LSTM\_relu\_Adam\_seq50\_noclip

[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6002 val\_loss=0.5210 acc=0.7318 f1=0.7289 time=23.35s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 2/10 | train\_loss=0.4559 val\_loss=0.4724 acc=0.7695 f1=0.7692 time=23.52s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 3/10 | train\_loss=0.3722 val\_loss=0.4708 acc=0.7738 f1=0.7737 time=23.70s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 4/10 | train\_loss=0.3051 val\_loss=0.5551 acc=0.7699 f1=0.7697 time=24.18s

[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 5/10 | train\_loss=0.2368 val\_loss=0.5873 acc=0.7659 f1=0.7653 time=24.67s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 6/10 | train\_loss=0.1725 val\_loss=0.7120 acc=0.7679 f1=0.7677 time=22.73s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 7/10 | train\_loss=0.1240 val\_loss=0.8398 acc=0.7638 f1=0.7638 time=22.80s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 8/10 | train\_loss=0.0818 val\_loss=1.0584 acc=0.7611 f1=0.7607 time=23.49s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 9/10 | train\_loss=0.0589 val\_loss=1.3521 acc=0.7623 f1=0.7622 time=23.17s  
[LSTM\_relu\_Adam\_seq50\_noclip] Epoch 10/10 | train\_loss=0.0450 val\_loss=1.5432 acc=0.7577 f1=0.7574 time=22.38s

Experiment 28/42: Running LSTM\_relu\_Adam\_seq50\_clip

[LSTM\_relu\_Adam\_seq50\_clip] Epoch 1/10 | train\_loss=0.6000 val\_loss=0.5212 acc=0.7320 f1=0.7291 time=23.29s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 2/10 | train\_loss=0.4560 val\_loss=0.4713 acc=0.7698 f1=0.7698 time=23.24s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 3/10 | train\_loss=0.3718 val\_loss=0.4745 acc=0.7736 f1=0.7736 time=23.31s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 4/10 | train\_loss=0.3028 val\_loss=0.5693 acc=0.7693 f1=0.7692 time=22.14s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 5/10 | train\_loss=0.2327 val\_loss=0.6072 acc=0.7646 f1=0.7643 time=23.73s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 6/10 | train\_loss=0.1670 val\_loss=0.8067 acc=0.7650 f1=0.7649 time=23.40s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 7/10 | train\_loss=0.1197 val\_loss=0.8514 acc=0.7618 f1=0.7617 time=23.83s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 8/10 | train\_loss=0.0813 val\_loss=1.2203 acc=0.7572 f1=0.7564 time=23.74s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 9/10 | train\_loss=0.0547 val\_loss=1.6557 acc=0.7578 f1=0.7578 time=23.68s  
[LSTM\_relu\_Adam\_seq50\_clip] Epoch 10/10 | train\_loss=0.0481 val\_loss=2.3862 acc=0.7550 f1=0.7550 time=24.05s

Experiment 29/42: Running LSTM\_relu\_Adam\_seq100\_noclip

[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 1/10 | train\_loss=0.5497 val\_loss=0.4560 acc=0.7805 f1=0.7778 time=45.17s  
[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 2/10 | train\_loss=0.3760 val\_loss=0.4026 acc=0.8144 f1=0.8134 time=45.01s  
[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 3/10 | train\_loss=0.2955 val\_loss=0.3916 acc=0.8299 f1=0.8298 time=45.06s  
[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 4/10 | train\_loss=0.2304 val\_loss=0.4301 acc=0.8291 f1=0.8290 time=1235.21s  
[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 5/10 | train\_loss=0.1715 val\_loss=0.4921 acc=0.8256 f1=0.8254 time=46.09s  
[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 6/10 | train\_loss=0.1172 val\_loss=0.5769 acc=0.8198 f1=0.8198 time=46.05s  
[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 7/10 | train\_loss=0.0727 val\_loss=0.7461 acc=0.8184 f1=0.8183 time=48.25s  
[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 8/10 | train\_loss=0.0519 val\_loss=0.8602 acc=0.8187 f1=0.8187 time=46.54s

[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 9/10 | train\_loss=0.0338 val\_loss=1.4507 acc=0.8070  
f1=0.8056 time=45.95s

[LSTM\_relu\_Adam\_seq100\_noclip] Epoch 10/10 | train\_loss=0.0234 val\_loss=1.4285 acc=0.8155  
f1=0.8155 time=45.88s

Experiment 30/42: Running LSTM\_relu\_Adam\_seq100\_clip

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 1/10 | train\_loss=0.5489 val\_loss=0.4574 acc=0.7786  
f1=0.7755 time=46.42s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 2/10 | train\_loss=0.3790 val\_loss=0.4078 acc=0.8106  
f1=0.8094 time=46.64s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 3/10 | train\_loss=0.2970 val\_loss=0.4000 acc=0.8302  
f1=0.8302 time=46.43s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 4/10 | train\_loss=0.2327 val\_loss=0.4427 acc=0.8263  
f1=0.8261 time=46.49s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 5/10 | train\_loss=0.1718 val\_loss=0.5426 acc=0.8226  
f1=0.8224 time=46.38s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 6/10 | train\_loss=0.1198 val\_loss=0.6521 acc=0.8158  
f1=0.8157 time=46.45s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 7/10 | train\_loss=0.0805 val\_loss=0.8780 acc=0.8101  
f1=0.8098 time=46.35s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 8/10 | train\_loss=0.0522 val\_loss=1.2304 acc=0.8030  
f1=0.8023 time=46.41s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 9/10 | train\_loss=0.0392 val\_loss=1.3113 acc=0.8128  
f1=0.8128 time=46.56s

[LSTM\_relu\_Adam\_seq100\_clip] Epoch 10/10 | train\_loss=0.0303 val\_loss=1.5121 acc=0.8093  
f1=0.8087 time=46.69s

Experiment 31/42: Running LSTM\_relu\_SGD\_seq25\_noclip

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=11.35s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 2/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000  
f1=0.3333 time=11.23s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 3/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.5001  
f1=0.3361 time=11.36s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 4/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4983  
f1=0.3403 time=11.50s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 5/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4968  
f1=0.3577 time=11.31s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 6/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4940  
f1=0.4223 time=11.38s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 7/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4917  
f1=0.4649 time=11.29s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 8/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4923  
f1=0.4748 time=11.24s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 9/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.4916  
f1=0.4700 time=11.20s

[LSTM\_relu\_SGD\_seq25\_noclip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4936  
f1=0.4864 time=11.10s

Experiment 32/42: Running LSTM\_relu\_SGD\_seq25\_clip

[LSTM\_relu\_SGD\_seq25\_clip] Epoch 1/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3333  
time=11.70s

[LSTM\_relu\_SGD\_seq25\_clip] Epoch 2/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3333  
time=11.63s

[LSTM\_relu\_SGD\_seq25\_clip] Epoch 3/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.5001 f1=0.3361 time=11.58s  
[LSTM\_relu\_SGD\_seq25\_clip] Epoch 4/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4983 f1=0.3403 time=11.90s  
[LSTM\_relu\_SGD\_seq25\_clip] Epoch 5/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4968 f1=0.3577 time=11.36s  
[LSTM\_relu\_SGD\_seq25\_clip] Epoch 6/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4940 f1=0.4223 time=11.65s  
[LSTM\_relu\_SGD\_seq25\_clip] Epoch 7/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4917 f1=0.4649 time=11.68s  
[LSTM\_relu\_SGD\_seq25\_clip] Epoch 8/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4923 f1=0.4748 time=11.55s  
[LSTM\_relu\_SGD\_seq25\_clip] Epoch 9/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.4916 f1=0.4700 time=11.58s  
[LSTM\_relu\_SGD\_seq25\_clip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4936 f1=0.4864 time=11.61s  
Experiment 33/42: Running LSTM\_relu\_SGD\_seq50\_noclip  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 1/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=22.40s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 2/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=22.10s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 3/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3334 time=22.79s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 4/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4995 f1=0.3336 time=22.72s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 5/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4982 f1=0.3393 time=22.73s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 6/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.4968 f1=0.3591 time=22.14s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 7/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4956 f1=0.3687 time=22.65s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 8/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4948 f1=0.4120 time=22.68s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 9/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4962 f1=0.4597 time=22.44s  
[LSTM\_relu\_SGD\_seq50\_noclip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4960 f1=0.4644 time=22.26s  
Experiment 34/42: Running LSTM\_relu\_SGD\_seq50\_clip  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 1/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=22.88s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 2/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=23.10s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 3/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3334 time=22.68s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 4/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4995 f1=0.3336 time=22.73s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 5/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4982 f1=0.3393 time=22.83s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 6/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.4968 f1=0.3591 time=22.79s

[LSTM\_relu\_SGD\_seq50\_clip] Epoch 7/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4956 f1=0.3687 time=22.92s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 8/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4948 f1=0.4120 time=22.50s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 9/10 | train\_loss=0.6931 val\_loss=0.6932 acc=0.4962 f1=0.4597 time=22.34s  
[LSTM\_relu\_SGD\_seq50\_clip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4960 f1=0.4644 time=22.22s  
Experiment 35/42: Running LSTM\_relu\_SGD\_seq100\_noclip  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 1/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=44.09s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 2/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=43.76s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 3/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=43.83s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 4/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.5001 f1=0.3335 time=44.10s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 5/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4996 f1=0.3346 time=43.96s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 6/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4975 f1=0.3431 time=44.24s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 7/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4977 f1=0.3656 time=43.85s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 8/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4970 f1=0.3908 time=43.82s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 9/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4956 f1=0.4196 time=44.06s  
[LSTM\_relu\_SGD\_seq100\_noclip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4943 f1=0.4598 time=44.17s  
Experiment 36/42: Running LSTM\_relu\_SGD\_seq100\_clip  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 1/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=44.67s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 2/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=44.56s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 3/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.5000 f1=0.3333 time=44.36s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 4/10 | train\_loss=0.6934 val\_loss=0.6932 acc=0.5001 f1=0.3335 time=44.40s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 5/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4996 f1=0.3346 time=44.40s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 6/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4975 f1=0.3431 time=44.49s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 7/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4977 f1=0.3656 time=44.44s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 8/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4970 f1=0.3908 time=44.50s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 9/10 | train\_loss=0.6932 val\_loss=0.6932 acc=0.4956 f1=0.4196 time=44.70s  
[LSTM\_relu\_SGD\_seq100\_clip] Epoch 10/10 | train\_loss=0.6933 val\_loss=0.6932 acc=0.4943 f1=0.4598 time=44.32s  
Experiment 37/42: Running LSTM\_relu\_RMSProp\_seq25\_noclip

[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 1/10 | train\_loss=0.6287 val\_loss=0.6150 acc=0.6584  
f1=0.6430 time=13.00s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 2/10 | train\_loss=0.5342 val\_loss=0.5499 acc=0.7101  
f1=0.7100 time=12.89s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 3/10 | train\_loss=0.4759 val\_loss=0.5468 acc=0.7223  
f1=0.7223 time=12.90s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 4/10 | train\_loss=0.4215 val\_loss=0.5724 acc=0.7194  
f1=0.7194 time=13.08s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 5/10 | train\_loss=0.3674 val\_loss=0.6864 acc=0.7194  
f1=0.7177 time=13.35s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 6/10 | train\_loss=0.3098 val\_loss=0.6735 acc=0.7174  
f1=0.7170 time=13.00s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 7/10 | train\_loss=0.2553 val\_loss=0.9535 acc=0.7063  
f1=0.7043 time=13.03s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 8/10 | train\_loss=0.2018 val\_loss=0.9365 acc=0.7128  
f1=0.7127 time=13.05s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 9/10 | train\_loss=0.1560 val\_loss=1.3530 acc=0.7082  
f1=0.7068 time=12.98s  
[LSTM\_relu\_RMSProp\_seq25\_noclip] Epoch 10/10 | train\_loss=0.1183 val\_loss=1.5294 acc=0.7052  
f1=0.7044 time=12.96s  
Experiment 38/42: Running LSTM\_relu\_RMSProp\_seq25\_clip  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 1/10 | train\_loss=0.6288 val\_loss=0.6034 acc=0.6660  
f1=0.6555 time=12.20s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 2/10 | train\_loss=0.5342 val\_loss=0.5496 acc=0.7102  
f1=0.7102 time=12.10s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 3/10 | train\_loss=0.4758 val\_loss=0.5510 acc=0.7218  
f1=0.7217 time=12.18s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 4/10 | train\_loss=0.4212 val\_loss=0.5730 acc=0.7187  
f1=0.7187 time=12.22s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 5/10 | train\_loss=0.3669 val\_loss=0.6877 acc=0.7201  
f1=0.7183 time=12.35s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 6/10 | train\_loss=0.3099 val\_loss=0.7137 acc=0.7159  
f1=0.7158 time=12.34s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 7/10 | train\_loss=0.2554 val\_loss=0.9385 acc=0.7086  
f1=0.7076 time=12.19s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 8/10 | train\_loss=0.2042 val\_loss=1.0297 acc=0.7098  
f1=0.7098 time=12.32s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 9/10 | train\_loss=0.1585 val\_loss=1.4134 acc=0.7059  
f1=0.7049 time=11.31s  
[LSTM\_relu\_RMSProp\_seq25\_clip] Epoch 10/10 | train\_loss=0.1232 val\_loss=1.8869 acc=0.7050  
f1=0.7043 time=12.12s  
Experiment 39/42: Running LSTM\_relu\_RMSProp\_seq50\_noclip  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 1/10 | train\_loss=0.5881 val\_loss=0.5601 acc=0.7040  
f1=0.6905 time=22.15s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 2/10 | train\_loss=0.4627 val\_loss=0.5036 acc=0.7438  
f1=0.7377 time=21.91s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 3/10 | train\_loss=0.3940 val\_loss=0.4865 acc=0.7729  
f1=0.7714 time=21.84s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 4/10 | train\_loss=0.3350 val\_loss=0.5315 acc=0.7777  
f1=0.7776 time=21.81s

[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 5/10 | train\_loss=0.2814 val\_loss=0.5550 acc=0.7611  
f1=0.7591 time=22.16s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 6/10 | train\_loss=0.2249 val\_loss=0.5949 acc=0.7734  
f1=0.7730 time=21.90s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 7/10 | train\_loss=0.1706 val\_loss=0.6837 acc=0.7646  
f1=0.7642 time=21.87s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 8/10 | train\_loss=0.1266 val\_loss=0.8233 acc=0.7581  
f1=0.7546 time=22.08s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 9/10 | train\_loss=0.0914 val\_loss=1.0772 acc=0.7604  
f1=0.7604 time=22.13s  
[LSTM\_relu\_RMSProp\_seq50\_noclip] Epoch 10/10 | train\_loss=0.0655 val\_loss=1.2873 acc=0.7619  
f1=0.7615 time=21.68s  
Experiment 40/42: Running LSTM\_relu\_RMSProp\_seq50\_clip  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 1/10 | train\_loss=0.5881 val\_loss=0.5396 acc=0.7206  
f1=0.7139 time=22.83s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 2/10 | train\_loss=0.4625 val\_loss=0.4847 acc=0.7594  
f1=0.7573 time=22.89s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 3/10 | train\_loss=0.3938 val\_loss=0.4927 acc=0.7734  
f1=0.7722 time=22.46s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 4/10 | train\_loss=0.3347 val\_loss=0.5345 acc=0.7773  
f1=0.7772 time=22.82s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 5/10 | train\_loss=0.2807 val\_loss=0.5602 acc=0.7603  
f1=0.7583 time=22.48s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 6/10 | train\_loss=0.2227 val\_loss=0.6445 acc=0.7719  
f1=0.7714 time=22.78s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 7/10 | train\_loss=0.1720 val\_loss=0.6997 acc=0.7672  
f1=0.7672 time=22.65s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 8/10 | train\_loss=0.1279 val\_loss=0.9062 acc=0.7669  
f1=0.7666 time=210.76s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 9/10 | train\_loss=0.0925 val\_loss=1.2522 acc=0.7615  
f1=0.7614 time=23.60s  
[LSTM\_relu\_RMSProp\_seq50\_clip] Epoch 10/10 | train\_loss=0.0683 val\_loss=1.8987 acc=0.7569  
f1=0.7566 time=23.47s  
Experiment 41/42: Running LSTM\_relu\_RMSProp\_seq100\_noclip  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 1/10 | train\_loss=0.5347 val\_loss=0.5371 acc=0.7312  
f1=0.7169 time=45.36s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 2/10 | train\_loss=0.3855 val\_loss=0.3991 acc=0.8205  
f1=0.8205 time=46.07s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 3/10 | train\_loss=0.3243 val\_loss=0.3957 acc=0.8254  
f1=0.8250 time=45.48s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 4/10 | train\_loss=0.2712 val\_loss=0.4143 acc=0.8260  
f1=0.8258 time=45.49s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 5/10 | train\_loss=0.2223 val\_loss=0.4151 acc=0.8303  
f1=0.8302 time=46.09s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 6/10 | train\_loss=0.1720 val\_loss=0.4735 acc=0.8290  
f1=0.8290 time=45.99s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 7/10 | train\_loss=0.1302 val\_loss=0.6227 acc=0.8092  
f1=0.8079 time=46.46s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 8/10 | train\_loss=0.0915 val\_loss=0.6209 acc=0.8196  
f1=0.8191 time=46.21s

[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 9/10 | train\_loss=0.0627 val\_loss=0.8879 acc=0.8186  
f1=0.8184 time=45.98s  
[LSTM\_relu\_RMSProp\_seq100\_noclip] Epoch 10/10 | train\_loss=0.0425 val\_loss=1.2632 acc=0.7778  
f1=0.7734 time=45.99s  
Experiment 42/42: Running LSTM\_relu\_RMSProp\_seq100\_clip  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 1/10 | train\_loss=0.5359 val\_loss=0.4826 acc=0.7653  
f1=0.7595 time=46.51s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 2/10 | train\_loss=0.3868 val\_loss=0.4038 acc=0.8170  
f1=0.8169 time=46.58s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 3/10 | train\_loss=0.3151 val\_loss=0.4156 acc=0.8224  
f1=0.8222 time=46.77s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 4/10 | train\_loss=0.2626 val\_loss=0.4469 acc=0.8208  
f1=0.8205 time=47.77s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 5/10 | train\_loss=0.2114 val\_loss=0.4676 acc=0.8260  
f1=0.8259 time=46.73s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 6/10 | train\_loss=0.1643 val\_loss=0.5288 acc=0.8221  
f1=0.8221 time=46.82s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 7/10 | train\_loss=0.1288 val\_loss=0.6545 acc=0.8147  
f1=0.8143 time=46.52s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 8/10 | train\_loss=0.0907 val\_loss=0.7450 acc=0.8180  
f1=0.8178 time=46.85s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 9/10 | train\_loss=0.0623 val\_loss=1.0571 acc=0.8145  
f1=0.8143 time=46.02s  
[LSTM\_relu\_RMSProp\_seq100\_clip] Epoch 10/10 | train\_loss=0.0447 val\_loss=1.3370 acc=0.8030  
f1=0.8020 time=46.40s  
Saved final metrics to results/metrics.csv