Downloading...

From: https://drive.google.com/uc?id=1VJaDVtDUtKQMmhRAqr3t-fgng899ZdRV

To: /content/Python Application Usage Log Data Set.xlsx

100%|██████████| 1.68M/1.68M [00:00<00:00, 140MB/s]

Epoch 1/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **10s** 105ms/step - loss: 0.4080 - val_loss: 0.4135 - learning_rate: 0.0010

Epoch 2/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **2s** 60ms/step - loss: 0.3248 - val_loss: 0.2865 - learning_rate: 0.0010

Epoch 3/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **2s** 100ms/step - loss: 0.3214 - val_loss: 0.3135 - learning_rate: 0.0010

Epoch 4/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **2s** 89ms/step - loss: 0.3078 - val_loss: 0.3167 - learning_rate: 0.0010

Epoch 5/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **2s** 91ms/step - loss: 0.2893 - val_loss: 0.3305 - learning_rate: 0.0010

Epoch 6/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 44ms/step - loss: 0.2609 - val_loss: 0.3197 - learning_rate: 0.0010

Epoch 7/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 56ms/step - loss: 0.2532 - val_loss: 0.3054 - learning_rate: 0.0010

Epoch 8/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 43ms/step - loss: 0.2454

Epoch 8: ReduceLROnPlateau reducing learning rate to 0.0005000000237487257.

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 57ms/step - loss: 0.2465 - val_loss: 0.2934 - learning_rate: 0.0010

Epoch 9/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 72ms/step - loss: 0.2587 - val_loss: 0.3023 - learning_rate: 5.0000e-04

Epoch 10/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **2s** 46ms/step - loss: 0.2525 - val_loss: 0.3027 - learning_rate: 5.0000e-04

Epoch 11/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 45ms/step - loss: 0.2412 - val_loss: 0.2878 - learning_rate: 5.0000e-04

Epoch 12/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 46ms/step - loss: 0.2262 - val_loss: 0.3102 - learning_rate: 5.0000e-04

Epoch 13/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 50ms/step - loss: 0.2463 - val_loss: 0.3087 - learning_rate: 5.0000e-04

Epoch 14/300

18/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 43ms/step - loss: 0.2138

Epoch 14: ReduceLROnPlateau reducing learning rate to 0.0002500000118743628.

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 52ms/step - loss: 0.2155 - val_loss: 0.3307 - learning_rate: 5.0000e-04

Epoch 15/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **2s** 99ms/step - loss: 0.2185 - val_loss: 0.3176 - learning_rate: 2.5000e-04

Epoch 16/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 56ms/step - loss: 0.2168 - val_loss: 0.2995 - learning_rate: 2.5000e-04

Epoch 17/300

19/19 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 50ms/step - loss: 0.2358 - val_loss: 0.3005 - learning_rate: 2.5000e-04

VAL — MAE: 399.26 | RMSE: 582.28 | MAPE: 34.90%

VAL (optimal F1) — thr: 599.3 | Acc: 76.92% | F1: 0.87

Epoch 1/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **4s** 20ms/step - loss: 0.4128

Epoch 2/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 21ms/step - loss: 0.3104

Epoch 3/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 21ms/step - loss: 0.3100

Epoch 4/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 19ms/step - loss: 0.2405

Epoch 5/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 19ms/step - loss: 0.2867

Epoch 6/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 19ms/step - loss: 0.2697

Epoch 7/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 20ms/step - loss: 0.2396

Epoch 8/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 25ms/step - loss: 0.2135

Epoch 9/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 32ms/step - loss: 0.2225

Epoch 10/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 31ms/step - loss: 0.2439

Epoch 11/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 21ms/step - loss: 0.2309

Epoch 12/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 19ms/step - loss: 0.2150

Epoch 13/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 19ms/step - loss: 0.2342

Epoch 14/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 19ms/step - loss: 0.2078

Epoch 15/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 20ms/step - loss: 0.2135

Epoch 16/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 19ms/step - loss: 0.2178

Epoch 17/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 19ms/step - loss: 0.2036

Epoch 18/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **1s** 19ms/step - loss: 0.1998

Epoch 19/20

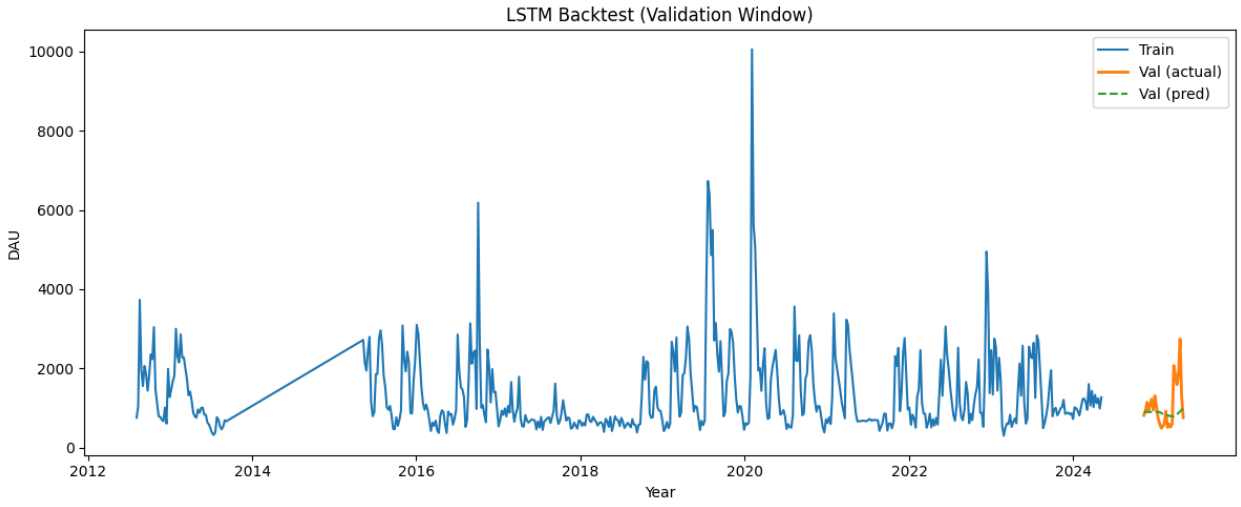
20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 19ms/step - loss: 0.1707

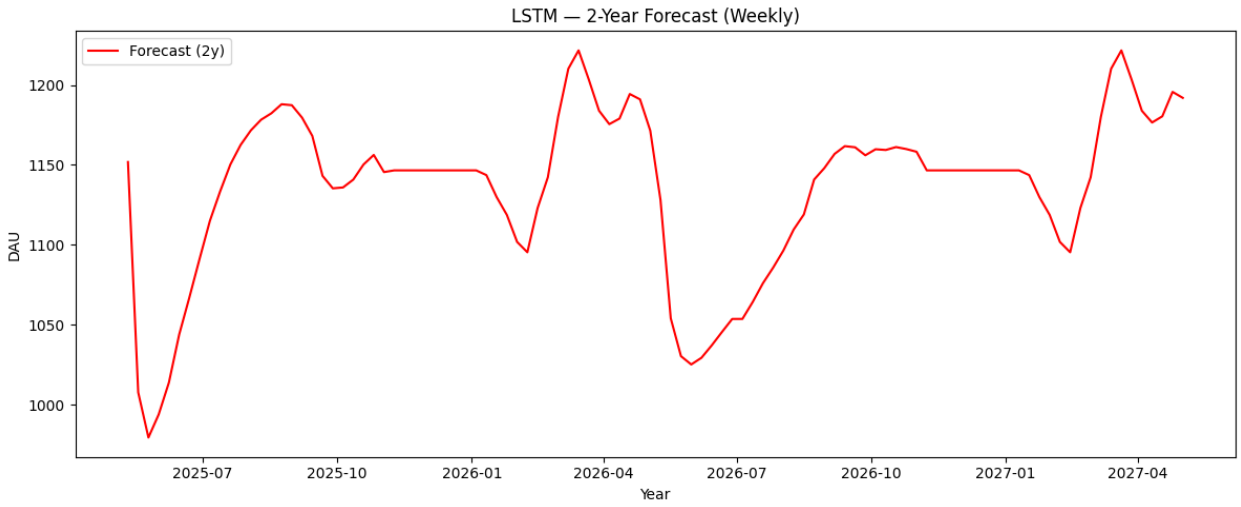
Epoch 20/20

20/20 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **0s** 21ms/step - loss: 0.1917

/tmp/ipython-input-1333924219.py:194: FutureWarning: last is deprecated and will be removed in a future version. Please create a mask and filter using `.loc` instead

hist_window = data.last('730D') if hasattr(data, 'last') else data.iloc[-104*2:]





▶ Validation (optimal F1 threshold)

Threshold: 599.313

Accuracy : 76.92%

F1 Score : 0.87

Confusion matrix [TN FP; FN TP]:

[[0 6]

 [0 20]]

▶ Validation (fixed TRAIN-median threshold = 1003.513)

Accuracy : 57.69%

F1 Score : 0.00

Confusion matrix [TN FP; FN TP]:

[[15 0]

 [11 0]]