```
"C:\Users\Administrator\Desktop\Predicted temperature\.venv\Scripts\python.exe" "C:\Users\Administrator\Desktop\Predicted temperature\temperature - □□.py"
2025-06-05 15:53:03.162279: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
2025-06-05 15:53:05.503779: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
□□□□□ GPU□□□ CPU □□□□
□□□□□□□
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2800 entries, 0 to 2799
Data columns (total 14 columns):
 #   Column            Non-Null Count  Dtype
---  ------            --------------  -----
 0   name              2800 non-null   object
 1   date              2800 non-null   object
 2   tempmax           2800 non-null   float64
 3   tempmin           2800 non-null   float64
 4   avg_temp          2800 non-null   float64
 5   dew               2800 non-null   float64
 6   humidity          2800 non-null   float64
 7   precip            2800 non-null   float64
 8   windspeed         2800 non-null   float64
 9   winddir           2800 non-null   float64
 10  sealevelpressure  2800 non-null   float64
 11  cloudcover        2800 non-null   float64
 12  solarradiation    2800 non-null   float64
 13  solarenergy       2800 non-null   float64
dtypes: float64(12), object(2)
memory usage: 306.4+ KB
Reloading Tuner from hyperband_dir\temperature_prediction\tuner0.json
□□□□□LSTM□□□□□□: 128
```

```
29 □□□□□Dropout□□□□: 0.25
30 □□□□□LSTM□□□□□□: 80
31 □□□□□Dropout□□□□: 0.15000000000000002
32 □□□□□: 0.01
33 2025-06-05 15:53:13.179331: I tensorflow/core/
   platform/cpu_feature_guard.cc:210] This TensorFlow
   binary is optimized to use available CPU instructions
    in performance-critical operations.
34 To enable the following instructions: SSE3 SSE4.1
   SSE4.2 AVX AVX2 FMA, in other operations, rebuild
   TensorFlow with the appropriate compiler flags.
35 Epoch 1/50
36 56/56 ━━━━━━━━━━━━━━━━━━━━ 16s 111ms/step - loss: 0.
   4043 - val_loss: 0.1922
37 Epoch 2/50
38 56/56 ━━━━━━━━━━━━━━━━━━━━ 5s 87ms/step - loss: 0.
   1404 - val_loss: 0.1452
39 Epoch 3/50
40 56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 97ms/step - loss: 0.
   1164 - val_loss: 0.1166
41 Epoch 4/50
42 56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 107ms/step - loss: 0.
   0953 - val_loss: 0.0964
43 Epoch 5/50
44 56/56 ━━━━━━━━━━━━━━━━━━━━ 5s 95ms/step - loss: 0.
   0926 - val_loss: 0.0842
45 Epoch 6/50
46 56/56 ━━━━━━━━━━━━━━━━━━━━ 5s 87ms/step - loss: 0.
   0820 - val_loss: 0.0858
47 Epoch 7/50
48 56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 102ms/step - loss: 0.
   0800 - val_loss: 0.0702
49 Epoch 8/50
50 56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 106ms/step - loss: 0.
   0819 - val_loss: 0.0824
51 Epoch 9/50
52 56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 108ms/step - loss: 0.
   0828 - val_loss: 0.0709
53 Epoch 10/50
54 56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 105ms/step - loss: 0.
   0791 - val_loss: 0.0769
```

```
Epoch 11/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 11s 107ms/step - loss: 0.0756 - val_loss: 0.1004
Epoch 12/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 5s 95ms/step - loss: 0.0829 - val_loss: 0.0679
Epoch 13/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 110ms/step - loss: 0.0698 - val_loss: 0.0671
Epoch 14/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 11s 128ms/step - loss: 0.0614 - val_loss: 0.0731
Epoch 15/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 7s 130ms/step - loss: 0.0745 - val_loss: 0.0803
Epoch 16/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 105ms/step - loss: 0.0749 - val_loss: 0.0845
Epoch 17/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 10s 106ms/step - loss: 0.0703 - val_loss: 0.0716
Epoch 18/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 11s 123ms/step - loss: 0.0693 - val_loss: 0.0793
Epoch 19/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 7s 114ms/step - loss: 0.0606 - val_loss: 0.0720
Epoch 20/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 10s 114ms/step - loss: 0.0608 - val_loss: 0.0715
Epoch 21/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 108ms/step - loss: 0.0633 - val_loss: 0.0716
Epoch 22/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 10s 105ms/step - loss: 0.0570 - val_loss: 0.0962
Epoch 23/50
56/56 ━━━━━━━━━━━━━━━━━━━━ 6s 101ms/step - loss: 0.0611 - val_loss: 0.0815
18/18 ━━━━━━━━━━━━━━━━━━━━ 3s 94ms/step
SVM MAE: 1.54
```

```
SVM RMSE: 1.95
SVM R²: 0.96
LSTM MAE: 1.17
LSTM RMSE: 1.46
LSTM R²: 0.98
   Model       MAE      RMSE  R² (R-Squared)
0   SVM  1.539992  1.954727        0.963955
1  LSTM  1.170526  1.459284        0.979912

□□□□□□□□□□□□ 0
```