

# AAPL Stock Price Prediction Report

## Model Hyperparameters:

Bidirectional LSTM Units: 128

LSTM Units: 64

Dense Units: 64 and 32 with LeakyReLU activation

Dropout Rates: 30% and 20%

Optimizer: Adam (Learning Rate: 0.0005)

Batch Size: 64

Epochs: 57

## Evaluation Metrics:

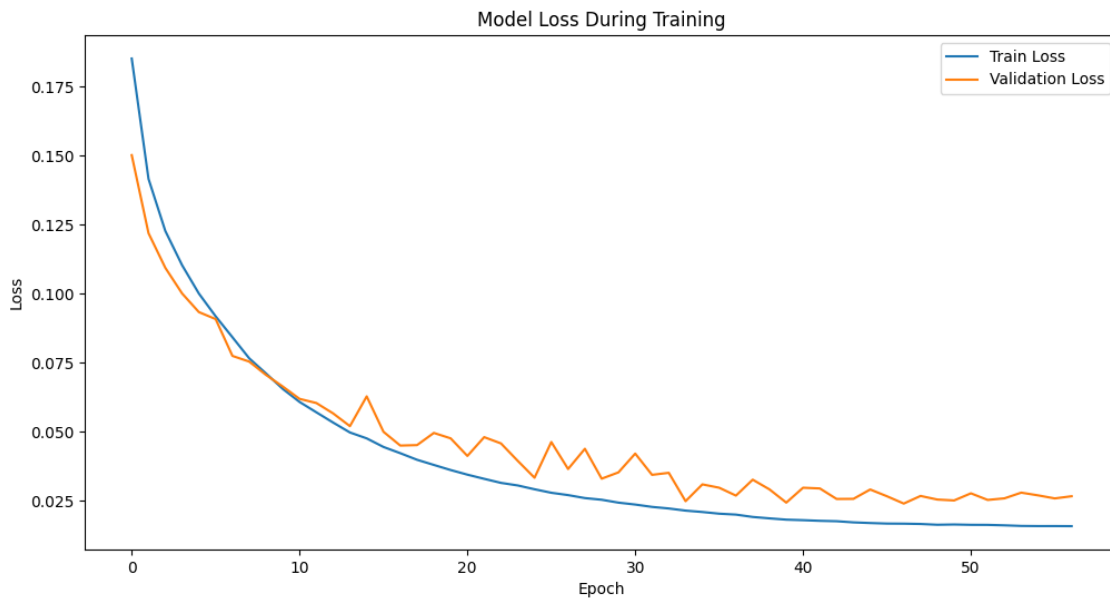
Mean Squared Error (MSE): 4554.32

Mean Absolute Error (MAE): 61.09

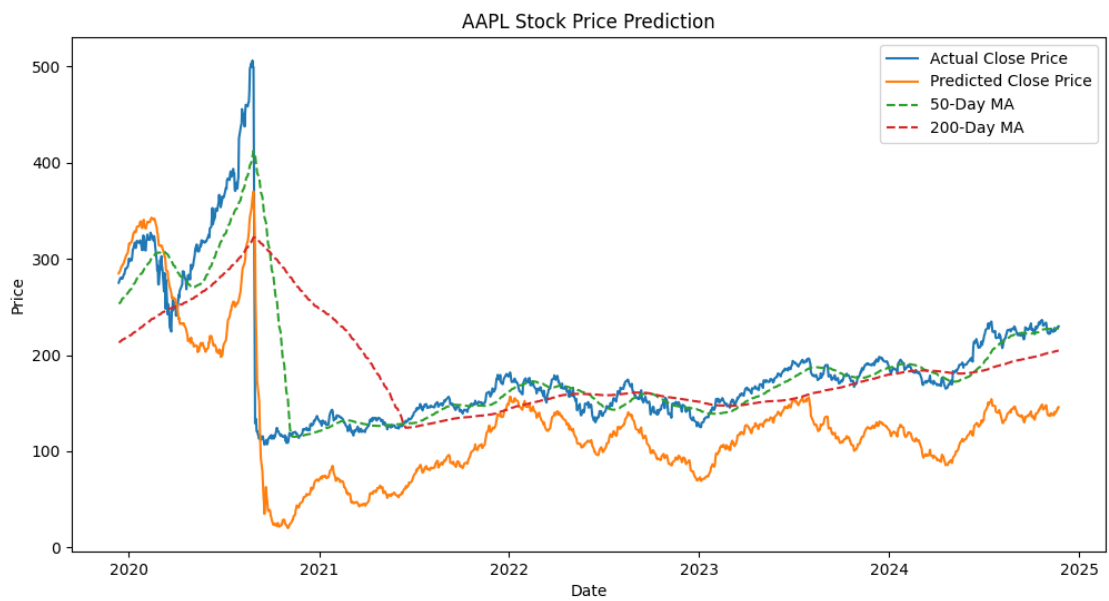
Mean Absolute Percentage Error (MAPE): 34.86%

R-squared Score: 0.04

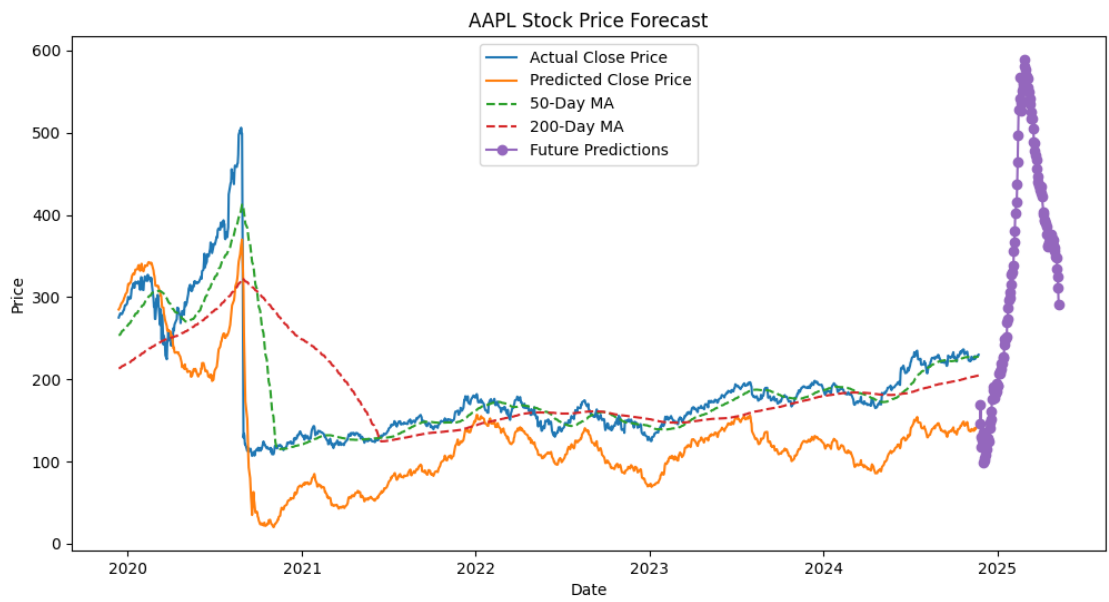
## Training and Validation Loss:



## Prediction Plot:



## Forecast Plot:



## Future Predictions:

Date	Predicted Close Price
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2024-11-25	145.8856201171875
2024-11-26	169.78713989257812
2024-11-27	129.83743286132812
2024-11-28	117.64177703857422
2024-11-29	125.80786895751953
2024-12-02	135.46722412109375
2024-12-03	98.05752563476562
2024-12-04	101.41466522216797
2024-12-05	103.89208984375
2024-12-06	107.66576385498047
2024-12-09	115.3614730834961
2024-12-10	123.221923828125
2024-12-11	127.50883483886719
2024-12-12	128.7160186767578

2024-12-13	124.0060043334961
2024-12-16	140.31661987304688
2024-12-17	146.82260131835938
2024-12-18	151.4300994873047
2024-12-19	160.98687744140625
2024-12-20	176.07225036621094
2024-12-23	186.91334533691406
2024-12-24	190.56883239746094
2024-12-25	187.2537384033203
2024-12-26	177.45787048339844
2024-12-27	182.74362182617188
2024-12-30	185.85067749023438
2024-12-31	195.1285400390625
2025-01-01	192.45872497558594
2025-01-02	192.68118286132812

2025-01-03	207.14675903320312
2025-01-06	206.65963745117188
2025-01-07	210.40289306640625
2025-01-08	212.01075744628906

2025-01-09	218.95974731445312
2025-01-10	219.2771453857422
2025-01-13	225.62391662597656
2025-01-14	226.91311645507812
2025-01-15	242.04986572265625
2025-01-16	249.5846710205078
2025-01-17	248.97731018066406
2025-01-20	251.3449249267578
2025-01-21	269.4538879394531
2025-01-22	272.788818359375
2025-01-23	287.3987731933594

2025-01-24	296.3237609863281
2025-01-27	298.67291259765625
2025-01-28	305.8334655761719
2025-01-29	314.9940185546875
2025-01-30	328.1123962402344
2025-01-31	330.0220642089844
2025-02-03	338.7421569824219
2025-02-04	355.8974304199219
2025-02-05	367.0825500488281
2025-02-06	380.2802734375
2025-02-07	402.3540344238281
2025-02-10	416.3426208496094
2025-02-11	437.31280517578125
2025-02-12	463.89727783203125
2025-02-13	497.0760498046875

2025-02-14	527.7283935546875
2025-02-17	566.8312377929688
2025-02-18	541.8175048828125
2025-02-19	526.8965454101562
2025-02-20	536.5117797851562
2025-02-21	551.5543212890625
2025-02-24	561.0375366210938

2025-02-25	567.1009521484375
2025-02-26	589.0816650390625
2025-02-27	580.9822998046875
2025-02-28	577.1146240234375
2025-03-03	568.5635986328125
2025-03-04	566.0841064453125
2025-03-05	565.93701171875
2025-03-06	555.7003784179688

<b>2025-03-07</b>	<b>550.1298828125</b>
2025-03-10	542.0176391601562
2025-03-11	534.892822265625
2025-03-12	525.3326416015625
2025-03-13	517.4027099609375
2025-03-14	516.85595703125
2025-03-17	505.4998779296875
2025-03-18	488.26239013671875
2025-03-19	487.5069274902344
2025-03-20	478.4012451171875
2025-03-21	472.8066711425781
2025-03-24	467.03216552734375
2025-03-25	456.18060302734375
2025-03-26	440.2192077636719
2025-03-27	446.6051940917969

<b>2025-03-28</b>	<b>436.20465087890625</b>
2025-03-31	431.1396179199219
2025-04-01	433.684814453125
2025-04-02	434.5726013183594
2025-04-03	425.97943115234375
2025-04-04	422.3288269042969
2025-04-07	403.3529052734375
2025-04-08	400.3962097167969
2025-04-09	392.600830078125
2025-04-10	393.8487854003906

2025-04-11	389.9772033691406
2025-04-14	385.3914489746094
2025-04-15	376.8552551269531
2025-04-16	362.3639831542969
2025-04-17	362.15972900390625

2025-04-18	366.8764343261719
2025-04-21	371.2496643066406
2025-04-22	373.6642761230469
2025-04-23	373.9925537109375
2025-04-24	376.34796142578125
2025-04-25	370.9547424316406
2025-04-28	369.3022766113281
2025-04-29	362.7151794433594
2025-04-30	360.525146484375
2025-05-01	355.6716003417969
2025-05-02	349.9407958984375
2025-05-05	347.8326110839844
2025-05-06	334.4071960449219
2025-05-07	325.3582458496094
2025-05-08	311.0115661621094

2025-05-09	291.666015625
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