

Battery SoC Estimation Report

Report Title: Battery SoC Estimation Pipeline Run Report

Generated By: try.py

Generation Time: 2025-07-02 06:40:00

Python Version: 3.11.13

TensorFlow Version: 2.18.0

Sequence Length: 60

Epochs: 200

Batch Size: 32

Dataset File: FINAL_MASTER_DATASET_With_SOC.csv

Report File: SoC_Prediction_Report_20250702_064000.pdf

Generated Automatically by SoC Prediction Pipeline Script.

Note: Plots in this PDF are static. For interactive analysis, run the script in environments like Google Colab or Jupyter Notebook.

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Run Log

Note: This log contains the real-time console output during the script execution, including debug information and progress updates.

--- Starting SoC Prediction Pipeline ---

--- Phase 1: Data Preparation and Feature Engineering ---

Attempting to load dataset from: /content/FINAL_MASTER_DATASET_With_SOC.csv

Dataset loaded successfully.

INFO: Converted 'SoC_Percentage' from 0-1 scale to 0-100 scale.

--- DEBUG: Original SoC_Percentage Column Range (after potential conversion) ---

Min SoC in raw data: 0.00

Max SoC in raw data: 100.00

Dataset loaded successfully.

Initial dataset shape: (26223, 25)

Columns available: ['Date', 'Time', 'Time_Seconds', 'Ambient_Temperature_C', 'SoC_Percentage', 'Voltage_V', 'Current_A', 'Cell_Temperature_C', 'Capacity_Ah', 'Step_Number', 'Energy_Wh', 'Count_#', 'Delta_SoC', 'Delta_Voltage', 'Rolling_Avg_Voltage_V', 'Delta_Current', 'Rolling_Avg_Current_A', 'Power_W', 'Voltage_Temp_Corrected', 'Delta_Cell_Temperature', 'Delta_t', 'Cumulative_Capacity_Window', 'Current_x_Cell_Temperature', 'Voltage_x_Cell_Temperature', 'Last_Current_Sign_Change']

--- DEBUG: Actual DataFrame Columns Loaded ---

['Date', 'Time', 'Time_Seconds', 'Ambient_Temperature_C', 'SoC_Percentage', 'Voltage_V', 'Current_A', 'Cell_Temperature_C', 'Capacity_Ah', 'Step_Number', 'Energy_Wh', 'Count_#', 'Delta_SoC', 'Delta_Voltage', 'Rolling_Avg_Voltage_V', 'Delta_Current', 'Rolling_Avg_Current_A', 'Power_W', 'Voltage_Temp_Corrected', 'Delta_Cell_Temperature', 'Delta_t', 'Cumulative_Capacity_Window', 'Current_x_Cell_Temperature', 'Voltage_x_Cell_Temperature', 'Last_Current_Sign_Change']

--- DEBUG: Original SoC_Percentage Column Range ---

Min SoC in raw data: 0.0

Max SoC in raw data: 100.0

Data sorted by 'Time_Seconds' column.

First 5 rows of the dataset before feature engineering:

Date	Time	...	Voltage_x_Cell_Temperature	Last_Current_Sign_Change
0 10/25/2018	4:09:59 AM	...	74.356035	0
1 10/25/2018	4:10:59 AM	...	74.045901	0
2 10/25/2018	4:11:59 AM	...	74.388403	0
3 10/25/2018	4:12:59 AM	...	74.082185	0
4 10/25/2018	4:13:59 AM	...	74.424847	0

[5 rows x 25 columns]

Missing values before feature engineering (should ideally be 0 for these columns):

Current_A	0
Voltage_V	0
Cell_Temperature_C	0
Ambient_Temperature_C	0
Time_Seconds	0
Capacity_Ah	0
Energy_Wh	0
Count_#	0
SoC_Percentage	0

dtype: int64

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--- Applying Outlier Removal (IQR method) to: ['Voltage_V', 'Current_A', 'Cell_Temperature_C', 'Ambient_Temperature_C'] ---
Removed 5652 rows (outliers) from the dataset.

--- Applying Global Rebalancing for Mid-SoC Region (0.3-0.8) ---
Mid-SoC region already has 4481 samples, no replication needed.
Outlier removal step complete.

--- Visualizing Data Distributions and Outliers with Boxplots (Raw Data) ---

--- Outlier analysis complete. Plots saved to temporary directory. ---

--- Visualizing Histograms of Raw Features (Raw Data) ---

--- Histogram analysis complete. Plots saved to temporary directory. ---

--- Visualizing Correlation Heatmap ---

Correlation heatmap saved.

Dataset shape after adding derived features and dropping initial NaN rows: (20570, 25)

First 5 rows after feature engineering and dropping initial NaN:

	Date	Time	...	Voltage_x	Cell_Temperature	Last_Current_Sign_Change
0	10/25/2018	4:10:59 AM	...	74.045901	0	
1	10/25/2018	4:11:59 AM	...	74.388403	0	
2	10/25/2018	4:12:59 AM	...	74.082185	0	
3	10/25/2018	4:13:59 AM	...	74.424847	0	
4	10/25/2018	4:14:59 AM	...	74.436835	0	

[5 rows x 25 columns]

--- Phase 1.1: Feature Engineering ---

--- DEBUG: y_data_raw (before scaling) ---

Min y_data_raw: 0.0000

Max y_data_raw: 100.0000

Raw input features (X_data_raw) shape: (20570, 19)

Raw target (y_data_raw) shape: (20570, 1)

--- Phase 1.2: Creating LSTM Sequences (SEQUENCE_LENGTH=60) ---

Shape of LSTM input sequences (X_sequences): (20510, 60, 19)

Shape of LSTM target values (y_sequences): (20510,)

--- Phase 1.3: Splitting Data ---

--- DEBUG: Scaled y_data ranges ---

Min y_train_scaled: 0.0000, Max y_train_scaled: 1.0000

Min y_val_scaled: 0.0000, Max y_val_scaled: 0.9345

Min y_test_scaled: 0.0000, Max y_test_scaled: 0.9125

Scalers saved to 'scaler_X.pkl' and 'scaler_Y.pkl'

--- Visualizing SoC Distribution in Train, Validation, and Test Sets (Pre-Oversampling) ---

Plot 'Train Set SoC Distribution (Pre-Oversampling)' saved.

Plot 'Validation Set SoC Distribution (Pre-Oversampling)' saved.

Plot 'Test Set SoC Distribution (Pre-Oversampling)' saved.

Train set shape: X=(14357, 60, 19), y=(14357,)

Validation set shape: X=(3076, 60, 19), y=(3076,)

Test set shape: X=(3077, 60, 19), y=(3077,)

[DEBUG] Mid-SoC samples found: 3370. Oversampling x3

[INFO] Mid-SoC oversampling applied. New train shape: (21097, 60, 19)

--- DEBUG: scaler_Y inverse_transform test ---

--- DEBUG: scaler_Y inverse_transform test ---

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Scaled values: [0. 0.25 0.5 0.75 1.]

Inverse transformed values: [0. 25. 50. 75. 100.]

--- Phase 2: Building and Training the LSTM Model ---

--- Skipping GridSearchCV. Training LSTM Base Model using MODEL_HP parameters ---

Using fixed parameters: {'model_lstm_units': 128, 'model_dropout_rate': 0.2, 'batch_size': 32, 'epochs': 200, 'model_l2_reg': 0.0001, 'model_learning_rate': 0.0005}

--- Retraining Best LSTM Model for Detailed History ---

Epoch 1/200

	1/660	37:52	3s/step	-	loss:	0.0296	-	mae:
0.5269	5/660							
	8s	13ms/step	-	loss:	0.0285	-	mae:	0.4377
		10/660						
0.4014	8s	13ms/step	-	loss:	0.0278	-	mae:	
		15/660						
0.3809	8s	13ms/step	-	loss:	0.0273	-	mae:	
		20/660						
0.3701	7s	12ms/step	-	loss:	0.0269	-	mae:	
		25/660						
0.3611	7s	12ms/step	-	loss:	0.0265	-	mae:	
		31/660						
0.3521	7s	11ms/step	-	loss:	0.0261	-	mae:	
		37/660						
0.3451	6s	11ms/step	-	loss:	0.0256	-	mae:	
		44/660						
0.3385	6s	10ms/step	-	loss:	0.0252	-	mae:	
		51/660						
0.3329	6s	10ms/step	-	loss:	0.0247	-	mae:	
		58/660						
0.3282	5s	10ms/step	-	loss:	0.0243	-	mae:	
		64/660						
0.3246	5s	10ms/step	-	loss:	0.0239	-	mae:	
		70/660						
0.3209	5s	10ms/step	-	loss:	0.0236	-	mae:	
		76/660						
0.3173	5s	10ms/step	-	loss:	0.0232	-	mae:	
		82/660						
	5s	9ms/step	-	loss:	0.0229	-	mae:	0.3136
		88/660						
0.3101	5s	9ms/step	-	loss:	0.0226	-	mae:	
		95/660						
0.3061101/660	5s	9ms/step	-	loss:	0.0222	-	mae:	
0.3027108/660	5s	9ms/step	-	loss:	0.0219	-	mae:	
0.2988114/660	5s	9ms/step	-	loss:	0.0215	-	mae:	
0.2956121/660	4s	9ms/step	-	loss:	0.0212	-	mae:	
0.2920127/660	4s	9ms/step	-	loss:	0.0209	-	mae:	
0.2889134/660	4s	9ms/step	-	loss:	0.0206	-	mae:	
0.2854141/660	4s	9ms/step	-	loss:	0.0203	-	mae:	
0.2820146/660	4s	9ms/step	-	loss:	0.0200	-	mae:	
0.2797153/660	4s	9ms/step	-	loss:	0.0198	-	mae:	
0.2764159/660	4s	9ms/step	-	loss:	0.0195	-	mae:	
0.2737166/660	4s	9ms/step	-	loss:	0.0193	-	mae:	

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4s	9ms/step	-	loss:	0.0190	-	mae:
0.2706173/660						
4s	9ms/step	-	loss:	0.0187	-	mae:
0.2677180/660						
4s	9ms/step	-	loss:	0.0185	-	mae:
0.2648186/660						
4s	9ms/step	-	loss:	0.0183	-	mae:
0.2623193/660						
4s	9ms/step	-	loss:	0.0180	-	mae:
0.2596200/660						
4s	9ms/step	-	loss:	0.0178	-	mae:
0.2570206/660						
4s	9ms/step	-	loss:	0.0176	-	mae:
0.2548211/660						
4s	9ms/step	-	loss:	0.0175	-	mae:
0.2530215/660						
4s	9ms/step	-	loss:	0.0173	-	mae:
0.2516220/660						
3s	9ms/step	-	loss:	0.0172	-	mae:
0.2499225/660						
3s	9ms/step	-	loss:	0.0170	-	mae:
0.2482230/660						
3s	9ms/step	-	loss:	0.0169	-	mae:
0.2466234/660						
3s	9ms/step	-	loss:	0.0168	-	mae:
0.2453239/660						
3s	9ms/step	-	loss:	0.0166	-	mae:
0.2437244/660						
3s	9ms/step	-	loss:	0.0165	-	mae:
0.2422248/660						
3s	9ms/step	-	loss:	0.0164	-	mae:
0.2410252/660						
3s	9ms/step	-	loss:	0.0163	-	mae:
0.2398256/660						
3s	10ms/step	-	loss:	0.0162	-	mae:
0.2386261/660						
3s	10ms/step	-	loss:	0.0161	-	mae:
0.2371265/660						
3s	10ms/step	-	loss:	0.0160	-	mae:
0.2360270/660						
3s	10ms/step	-	loss:	0.0158	-	mae:
0.2345275/660						
3s	10ms/step	-	loss:	0.0157	-	mae:
0.2332280/660						
3s	10ms/step	-	loss:	0.0156	-	mae:
0.2318284/660						
3s	10ms/step	-	loss:	0.0155	-	mae:
0.2307289/660						
3s	10ms/step	-	loss:	0.0154	-	mae:
0.2294294/660						
3s	10ms/step	-	loss:	0.0153	-	mae:
0.2281298/660						
3s	10ms/step	-	loss:	0.0152	-	mae:
0.2271303/660						
3s	10ms/step	-	loss:	0.0151	-	mae:
0.2259307/660						
3s	10ms/step	-	loss:	0.0150	-	mae:
0.2249312/660						
3s	10ms/step	-	loss:	0.0149	-	mae:
0.2237316/660						
3s	10ms/step	-	loss:	0.0148	-	mae:
0.2228320/660						
3s	10ms/step	-	loss:	0.0147	-	mae:
0.2218324/660						
3s	10ms/step	-	loss:	0.0146	-	mae:
0.2209329/660						

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3s	10ms/step	-	loss:	0.0145	-	mae:
0.2198333/660						
3s	10ms/step	-	loss:	0.0145	-	mae:
0.2189337/660						
3s	10ms/step	-	loss:	0.0144	-	mae:
0.2181342/660						
3s	10ms/step	-	loss:	0.0143	-	mae:
0.2170347/660						
3s	10ms/step	-	loss:	0.0142	-	mae:
0.2159351/660						
3s	10ms/step	-	loss:	0.0141	-	mae:
0.2151355/660						
3s	10ms/step	-	loss:	0.0140	-	mae:
0.2143359/660						
3s	10ms/step	-	loss:	0.0140	-	mae:
0.2135363/660						
3s	10ms/step	-	loss:	0.0139	-	mae:
0.2127368/660						
3s	10ms/step	-	loss:	0.0138	-	mae:
0.2117372/660						
3s	10ms/step	-	loss:	0.0137	-	mae:
0.2110376/660						
2s	11ms/step	-	loss:	0.0137	-	mae:
0.2102381/660						
2s	11ms/step	-	loss:	0.0136	-	mae:
0.2093385/660						
2s	11ms/step	-	loss:	0.0135	-	mae:
0.2086390/660						
2s	11ms/step	-	loss:	0.0134	-	mae:
0.2077396/660						
2s	11ms/step	-	loss:	0.0133	-	mae:
0.2066403/660						
2s	11ms/step	-	loss:	0.0132	-	mae:
0.2054410/660						
2s	10ms/step	-	loss:	0.0131	-	mae:
0.2042417/660						
2s	10ms/step	-	loss:	0.0130	-	mae:
0.2030424/660						
2s	10ms/step	-	loss:	0.0129	-	mae:
0.2018431/660						
2s	10ms/step	-	loss:	0.0128	-	mae:
0.2007436/660						
2s	10ms/step	-	loss:	0.0127	-	mae:
0.1999442/660						
2s	10ms/step	-	loss:	0.0127	-	mae:
0.1990449/660						
2s	10ms/step	-	loss:	0.0126	-	mae:
0.1979456/660						
2s	10ms/step	-	loss:	0.0125	-	mae:
0.1968463/660						
2s	10ms/step	-	loss:	0.0124	-	mae:
0.1958469/660						
1s	10ms/step	-	loss:	0.0123	-	mae:
0.1949476/660						
1s	10ms/step	-	loss:	0.0122	-	mae:
0.1939482/660						
1s	10ms/step	-	loss:	0.0121	-	mae:
0.1931488/660						
1s	10ms/step	-	loss:	0.0121	-	mae:
0.1922495/660						
1s	10ms/step	-	loss:	0.0120	-	mae:
0.1913502/660						
1s	10ms/step	-	loss:	0.0119	-	mae:
0.1903509/660						
1s	10ms/step	-	loss:	0.0118	-	mae:
0.1894516/660						

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0.1885523/660	1s	10ms/step	-	loss:	0.0117	-	mae:
0.1876530/660	1s	10ms/step	-	loss:	0.0117	-	mae:
0.1867537/660	1s	10ms/step	-	loss:	0.0116	-	mae:
0.1858544/660	1s	10ms/step	-	loss:	0.0115	-	mae:
0.1850551/660	1s	10ms/step	-	loss:	0.0114	-	mae:
0.1841558/660	1s	10ms/step	-	loss:	0.0113	-	mae:
0.1833563/660	0s	10ms/step	-	loss:	0.0113	-	mae:
0.1827570/660	0s	10ms/step	-	loss:	0.0112	-	mae:
0.1819576/660	0s	10ms/step	-	loss:	0.0112	-	mae:
0.1813583/660	0s	10ms/step	-	loss:	0.0111	-	mae:
0.1805589/660	0s	10ms/step	-	loss:	0.0110	-	mae:
0.1798595/660	0s	10ms/step	-	loss:	0.0110	-	mae:
0.1792601/660	0s	10ms/step	-	loss:	0.0109	-	mae:
0.1785608/660	0s	10ms/step	-	loss:	0.0109	-	mae:
0.1778615/660	0s	10ms/step	-	loss:	0.0108	-	mae:
0.1771622/660	0s	10ms/step	-	loss:	0.0107	-	mae:
0.1764628/660	0s	10ms/step	-	loss:	0.0107	-	mae:
0.1758635/660	0s	10ms/step	-	loss:	0.0106	-	mae:
0.1751642/660	0s	10ms/step	-	loss:	0.0105	-	mae:
0.1744649/660	0s	10ms/step	-	loss:	0.0105	-	mae:
0.1737656/660	0s	10ms/step	-	loss:	0.0104	-	mae:
0.1731660/660	11s	11ms/step - loss: 0.0103 - mae: 0.1726 - val_loss: 0.0013 - val_mae: 0.0580					

Epoch 2/200

0.0553	1/660	16s	25ms/step	-	loss:	0.0013	-	mae:
	8/660							
0.0636	5s	8ms/step	-	loss:	0.0013	-	mae:	0.0604
	15/660							
0.0648	5s	8ms/step	-	loss:	0.0014	-	mae:	
	20/660							
0.0657	5s	9ms/step	-	loss:	0.0014	-	mae:	
	27/660							
0.0659	5s	8ms/step	-	loss:	0.0014	-	mae:	
	34/660							
0.0663	5s	8ms/step	-	loss:	0.0014	-	mae:	
	41/660							
0.0665	5s	8ms/step	-	loss:	0.0014	-	mae:	
	48/660							
0.0668	4s	8ms/step	-	loss:	0.0014	-	mae:	
	55/660							
0.0669	4s	8ms/step	-	loss:	0.0014	-	mae:	
	62/660							
	69/660							

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	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0670		76/660					
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0670		83/660					
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0670		89/660					
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0670		96/660					
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0671103/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0671110/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0671117/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0672124/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0673131/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0674138/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0674145/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0675151/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0675158/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0675164/660							
	4s	8ms/step	-	loss:	0.0014	-	mae:
0.0675171/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0675178/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0675185/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0675192/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0674199/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0674206/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0674213/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0674220/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0674226/660							
	3s	8ms/step	-	loss:	0.0014	-	mae:
0.0674233/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0674240/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0674247/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0674254/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0674261/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0673267/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0673272/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0673278/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0673285/660							
	3s	8ms/step	-	loss:	0.0013	-	mae:
0.0672292/660							

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2s	8ms/step	-	loss:	0.0013	-	mae:
0.0672299/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0672306/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0671313/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0671320/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0670326/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0670333/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0670340/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0669346/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0669353/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0668359/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0668366/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0668373/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0667380/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0667387/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0666393/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0666398/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0665404/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0665411/660						
2s	8ms/step	-	loss:	0.0013	-	mae:
0.0665418/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0664423/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0664429/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0663436/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0663442/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0663449/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0662455/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0662462/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0662469/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0661476/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0661482/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0661489/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0660496/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0660503/660						
1s	8ms/step	-	loss:	0.0013	-	mae:
0.0659510/660						

Battery SoC Estimation Project Report

0.0659516/660	1s	8ms/step	-	loss:	0.0013	-	mae:
	1s	8ms/step	-	loss:	0.0013	-	mae:
0.0659521/660	1s	8ms/step	-	loss:	0.0013	-	mae:
0.0658528/660	1s	8ms/step	-	loss:	0.0013	-	mae:
0.0658535/660	1s	8ms/step	-	loss:	0.0013	-	mae:
0.0658542/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0657549/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0657556/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0656563/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0656570/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0656577/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0655584/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0655590/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0654597/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0654604/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0654611/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0653618/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0653625/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0653632/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0652638/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0652644/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0652648/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0652654/660	0s	8ms/step	-	loss:	0.0013	-	mae:
0.0651660/660	0s	8ms/step	-	loss:	0.0012	-	mae:
0.0651660/660	0s	8ms/step	-	loss:	0.0012	-	mae:
0.0651660/660	6s	9ms/step	-	loss:	0.0012	-	mae:

6s 9ms/step - loss: 0.0012 - mae: 0.0651 - val_loss: 7.9967e-04 - val_mae: 0.0451

Epoch 3/200

0.0545	1/660	47:11	4s/step	-	loss:	8.9281e-04	-	mae:
	5/660							
8s	13ms/step	-	loss:	8.8564e-04	-	mae:	0.0539	
	10/660							
8s	13ms/step	-	loss:	9.1221e-04	-	mae:		
0.0566	15/660							
7s	12ms/step	-	loss:	9.2176e-04	-	mae:		
0.0575	19/660							
7s	12ms/step	-	loss:	9.2741e-04	-	mae:		
0.0581	25/660							
7s	12ms/step	-	loss:	9.3236e-04	-	mae:		
0.0587	31/660							
6s	11ms/step	-	loss:	9.3437e-04	-	mae:		
0.0589	37/660							
6s	11ms/step	-	loss:	9.3632e-04	-	mae:		
0.0591	43/660							

Battery SoC Estimation Project Report

0.0596	6s	10ms/step	-	loss:	9.4078e-04	-	mae:
		49/660					
0.0600	6s	10ms/step	-	loss:	9.4370e-04	-	mae:
		55/660					
0.0602	6s	10ms/step	-	loss:	9.4567e-04	-	mae:
		62/660					
0.0603	5s	10ms/step	-	loss:	9.4662e-04	-	mae:
		69/660					
0.0603	5s	10ms/step	-	loss:	9.4573e-04	-	mae:
		76/660					
	5s	9ms/step	-	loss:	9.4407e-04	-	mae: 0.0602
		83/660					
0.0601	5s	9ms/step	-	loss:	9.4253e-04	-	mae:
		90/660					
0.0599	5s	9ms/step	-	loss:	9.4067e-04	-	mae:
		97/660					
0.0599104/660	5s	9ms/step	-	loss:	9.3939e-04	-	mae:
0.0598110/660	5s	9ms/step	-	loss:	9.3843e-04	-	mae:
0.0597117/660	4s	9ms/step	-	loss:	9.3746e-04	-	mae:
0.0597124/660	4s	9ms/step	-	loss:	9.3660e-04	-	mae:
0.0597131/660	4s	9ms/step	-	loss:	9.3618e-04	-	mae:
0.0597138/660	4s	9ms/step	-	loss:	9.3545e-04	-	mae:
0.0597143/660	4s	9ms/step	-	loss:	9.3472e-04	-	mae:
0.0597150/660	4s	9ms/step	-	loss:	9.3417e-04	-	mae:
0.0596157/660	4s	9ms/step	-	loss:	9.3343e-04	-	mae:
0.0596164/660	4s	9ms/step	-	loss:	9.3269e-04	-	mae:
0.0596171/660	4s	9ms/step	-	loss:	9.3177e-04	-	mae:
0.0595178/660	4s	9ms/step	-	loss:	9.3090e-04	-	mae:
0.0595185/660	4s	9ms/step	-	loss:	9.3004e-04	-	mae:
0.0594192/660	4s	9ms/step	-	loss:	9.2906e-04	-	mae:
0.0594199/660	3s	9ms/step	-	loss:	9.2812e-04	-	mae:
0.0594205/660	3s	9ms/step	-	loss:	9.2727e-04	-	mae:
0.0593212/660	3s	9ms/step	-	loss:	9.2658e-04	-	mae:
0.0593218/660	3s	9ms/step	-	loss:	9.2585e-04	-	mae:
0.0593225/660	3s	9ms/step	-	loss:	9.2533e-04	-	mae:
0.0593232/660	3s	9ms/step	-	loss:	9.2485e-04	-	mae:
0.0593239/660	3s	9ms/step	-	loss:	9.2428e-04	-	mae:
0.0593246/660	3s	9ms/step	-	loss:	9.2368e-04	-	mae:
0.0593253/660	3s	9ms/step	-	loss:	9.2314e-04	-	mae:
0.0593260/660	3s	9ms/step	-	loss:	9.2258e-04	-	mae:
0.0592267/660	3s	9ms/step	-	loss:	9.2199e-04	-	mae:

Battery SoC Estimation Project Report						
0.0592272/660	3s	9ms/step	-	loss:	9.2144e-04	- mae:
0.0592279/660	3s	9ms/step	-	loss:	9.2105e-04	- mae:
0.0592286/660	3s	9ms/step	-	loss:	9.2049e-04	- mae:
0.0592293/660	3s	9ms/step	-	loss:	9.1986e-04	- mae:
0.0592300/660	3s	9ms/step	-	loss:	9.1920e-04	- mae:
0.0592307/660	3s	8ms/step	-	loss:	9.1850e-04	- mae:
0.0591314/660	2s	8ms/step	-	loss:	9.1785e-04	- mae:
0.0591321/660	2s	8ms/step	-	loss:	9.1724e-04	- mae:
0.0591328/660	2s	8ms/step	-	loss:	9.1667e-04	- mae:
0.0591335/660	2s	8ms/step	-	loss:	9.1616e-04	- mae:
0.0591342/660	2s	8ms/step	-	loss:	9.1565e-04	- mae:
0.0591349/660	2s	8ms/step	-	loss:	9.1514e-04	- mae:
0.0591356/660	2s	8ms/step	-	loss:	9.1465e-04	- mae:
0.0591363/660	2s	8ms/step	-	loss:	9.1413e-04	- mae:
0.0591369/660	2s	8ms/step	-	loss:	9.1357e-04	- mae:
0.0590376/660	2s	8ms/step	-	loss:	9.1307e-04	- mae:
0.0590383/660	2s	8ms/step	-	loss:	9.1248e-04	- mae:
0.0590389/660	2s	8ms/step	-	loss:	9.1188e-04	- mae:
0.0590396/660	2s	8ms/step	-	loss:	9.1136e-04	- mae:
0.0590402/660	2s	8ms/step	-	loss:	9.1072e-04	- mae:
0.0589409/660	2s	8ms/step	-	loss:	9.1015e-04	- mae:
0.0589416/660	2s	8ms/step	-	loss:	9.0947e-04	- mae:
0.0589423/660	1s	8ms/step	-	loss:	9.0879e-04	- mae:
0.0589430/660	1s	8ms/step	-	loss:	9.0810e-04	- mae:
0.0588437/660	1s	8ms/step	-	loss:	9.0742e-04	- mae:
0.0588444/660	1s	8ms/step	-	loss:	9.0672e-04	- mae:
0.0588450/660	1s	8ms/step	-	loss:	9.0604e-04	- mae:
0.0587457/660	1s	8ms/step	-	loss:	9.0547e-04	- mae:
0.0587464/660	1s	8ms/step	-	loss:	9.0481e-04	- mae:
0.0587470/660	1s	8ms/step	-	loss:	9.0417e-04	- mae:
0.0587476/660	1s	8ms/step	-	loss:	9.0361e-04	- mae:
0.0586482/660	1s	8ms/step	-	loss:	9.0304e-04	- mae:
0.0586488/660	1s	8ms/step	-	loss:	9.0246e-04	- mae:

Battery SoC Estimation Project Report

0.0586495/660	1s	8ms/step	-	loss:	9.0187e-04	-	mae:
0.0586502/660	1s	8ms/step	-	loss:	9.0118e-04	-	mae:
0.0585509/660	1s	8ms/step	-	loss:	9.0051e-04	-	mae:
0.0585516/660	1s	8ms/step	-	loss:	8.9986e-04	-	mae:
0.0585522/660	1s	8ms/step	-	loss:	8.9921e-04	-	mae:
0.0584529/660	1s	8ms/step	-	loss:	8.9866e-04	-	mae:
0.0584535/660	1s	8ms/step	-	loss:	8.9801e-04	-	mae:
0.0584542/660	0s	8ms/step	-	loss:	8.9678e-04	-	mae:
0.0584549/660	0s	8ms/step	-	loss:	8.9613e-04	-	mae:
0.0583556/660	0s	8ms/step	-	loss:	8.9550e-04	-	mae:
0.0583563/660	0s	8ms/step	-	loss:	8.9486e-04	-	mae:
0.0583570/660	0s	8ms/step	-	loss:	8.9422e-04	-	mae:
0.0583577/660	0s	8ms/step	-	loss:	8.9360e-04	-	mae:
0.0582584/660	0s	8ms/step	-	loss:	8.9297e-04	-	mae:
0.0582591/660	0s	8ms/step	-	loss:	8.9232e-04	-	mae:
0.0582598/660	0s	8ms/step	-	loss:	8.9169e-04	-	mae:
0.0581605/660	0s	8ms/step	-	loss:	8.9105e-04	-	mae:
0.0581611/660	0s	8ms/step	-	loss:	8.9052e-04	-	mae:
0.0581618/660	0s	8ms/step	-	loss:	8.8988e-04	-	mae:
0.0581625/660	0s	8ms/step	-	loss:	8.8925e-04	-	mae:
0.0580632/660	0s	8ms/step	-	loss:	8.8862e-04	-	mae:
0.0580639/660	0s	8ms/step	-	loss:	8.8801e-04	-	mae:
0.0580646/660	0s	8ms/step	-	loss:	8.8742e-04	-	mae:
0.0580651/660	0s	8ms/step	-	loss:	8.8700e-04	-	mae:
0.0579657/660	0s	8ms/step	-	loss:	8.8651e-04	-	mae:
0.0579660/660	10s	9ms/step	- loss: 8.8618e-04 - mae: 0.0579 - val_loss: 6.4214e-04 - val_mae: 0.0421				

Epoch 4/200

0.0565	1/660	17s	27ms/step	-	loss:	7.8778e-04	-	mae:
5s	7/660							
5s	9ms/step	-	loss:	8.4677e-04	-	mae:	0.0625	
	14/660							
0.0651	5s	8ms/step	-	loss:	8.7269e-04	-	mae:	
	21/660							
0.0661	5s	8ms/step	-	loss:	8.8228e-04	-	mae:	
	26/660							
0.0663	5s	9ms/step	-	loss:	8.8439e-04	-	mae:	
	33/660							
0.0662	5s	9ms/step	-	loss:	8.8341e-04	-	mae:	
	40/660							

Battery SoC Estimation Project Report

0.0663	5s	9ms/step	-	loss:	8.8400e-04	- mae:
		47/660				
0.0662	5s	8ms/step	-	loss:	8.8355e-04	- mae:
		54/660				
0.0661	5s	8ms/step	-	loss:	8.8202e-04	- mae:
		61/660				
0.0659	5s	8ms/step	-	loss:	8.7984e-04	- mae:
		68/660				
0.0656	4s	8ms/step	-	loss:	8.7682e-04	- mae:
		75/660				
0.0652	4s	8ms/step	-	loss:	8.7357e-04	- mae:
		82/660				
0.0649	4s	8ms/step	-	loss:	8.7007e-04	- mae:
		89/660				
0.0645	4s	8ms/step	-	loss:	8.6634e-04	- mae:
		95/660				
0.0643101/660	4s	8ms/step	-	loss:	8.6334e-04	- mae:
0.0640107/660	4s	8ms/step	-	loss:	8.6058e-04	- mae:
0.0637114/660	4s	8ms/step	-	loss:	8.5788e-04	- mae:
0.0634121/660	4s	8ms/step	-	loss:	8.5461e-04	- mae:
0.0632128/660	4s	8ms/step	-	loss:	8.5217e-04	- mae:
0.0630135/660	4s	8ms/step	-	loss:	8.4974e-04	- mae:
0.0628142/660	4s	8ms/step	-	loss:	8.4723e-04	- mae:
0.0625148/660	4s	8ms/step	-	loss:	8.4478e-04	- mae:
0.0624153/660	4s	8ms/step	-	loss:	8.4278e-04	- mae:
0.0622160/660	4s	8ms/step	-	loss:	8.4107e-04	- mae:
0.0620167/660	4s	8ms/step	-	loss:	8.3866e-04	- mae:
0.0618174/660	4s	8ms/step	-	loss:	8.3620e-04	- mae:
0.0615181/660	3s	8ms/step	-	loss:	8.3395e-04	- mae:
0.0614187/660	3s	8ms/step	-	loss:	8.3174e-04	- mae:
0.0612194/660	3s	8ms/step	-	loss:	8.2985e-04	- mae:
0.0610199/660	3s	8ms/step	-	loss:	8.2779e-04	- mae:
0.0609203/660	3s	8ms/step	-	loss:	8.2645e-04	- mae:
0.0608208/660	3s	9ms/step	-	loss:	8.2541e-04	- mae:
0.0607213/660	3s	9ms/step	-	loss:	8.2416e-04	- mae:
0.0606217/660	3s	9ms/step	-	loss:	8.2298e-04	- mae:
0.0605222/660	3s	9ms/step	-	loss:	8.2210e-04	- mae:
0.0604227/660	3s	9ms/step	-	loss:	8.2108e-04	- mae:
0.0603232/660	3s	9ms/step	-	loss:	8.2007e-04	- mae:
0.0603237/660	3s	9ms/step	-	loss:	8.1907e-04	- mae:
0.0602242/660	3s	9ms/step	-	loss:	8.1807e-04	- mae:

Battery SoC Estimation Project Report

3s	9ms/step	-	loss:	8.1711e-04	-	mae:	
0.0601247/660	3s	9ms/step	-	loss:	8.1616e-04	-	mae:
0.0600251/660	3s	9ms/step	-	loss:	8.1538e-04	-	mae:
0.0599255/660	3s	9ms/step	-	loss:	8.1460e-04	-	mae:
0.0599260/660	3s	9ms/step	-	loss:	8.1364e-04	-	mae:
0.0598265/660	3s	9ms/step	-	loss:	8.1273e-04	-	mae:
0.0597270/660	3s	9ms/step	-	loss:	8.1184e-04	-	mae:
0.0597275/660	3s	9ms/step	-	loss:	8.1098e-04	-	mae:
0.0596280/660	3s	9ms/step	-	loss:	8.1014e-04	-	mae:
0.0595285/660	3s	9ms/step	-	loss:	8.0929e-04	-	mae:
0.0594289/660	3s	10ms/step	-	loss:	8.0863e-04	-	mae:
0.0594293/660	3s	10ms/step	-	loss:	8.0798e-04	-	mae:
0.0593297/660	3s	10ms/step	-	loss:	8.0733e-04	-	mae:
0.0593302/660	3s	10ms/step	-	loss:	8.0657e-04	-	mae:
0.0592307/660	3s	10ms/step	-	loss:	8.0582e-04	-	mae:
0.0592312/660	3s	10ms/step	-	loss:	8.0509e-04	-	mae:
0.0591316/660	3s	10ms/step	-	loss:	8.0451e-04	-	mae:
0.0591320/660	3s	10ms/step	-	loss:	8.0395e-04	-	mae:
0.0590324/660	3s	10ms/step	-	loss:	8.0340e-04	-	mae:
0.0590328/660	3s	10ms/step	-	loss:	8.0287e-04	-	mae:
0.0589332/660	3s	10ms/step	-	loss:	8.0233e-04	-	mae:
0.0589337/660	3s	10ms/step	-	loss:	8.0166e-04	-	mae:
0.0588341/660	3s	10ms/step	-	loss:	8.0114e-04	-	mae:
0.0588345/660	3s	10ms/step	-	loss:	8.0063e-04	-	mae:
0.0588349/660	3s	10ms/step	-	loss:	8.0012e-04	-	mae:
0.0587353/660	3s	10ms/step	-	loss:	7.9964e-04	-	mae:
0.0587358/660	3s	10ms/step	-	loss:	7.9901e-04	-	mae:
0.0586362/660	3s	10ms/step	-	loss:	7.9852e-04	-	mae:
0.0586366/660	3s	10ms/step	-	loss:	7.9803e-04	-	mae:
0.0586371/660	2s	10ms/step	-	loss:	7.9744e-04	-	mae:
0.0585375/660	2s	10ms/step	-	loss:	7.9696e-04	-	mae:
0.0585380/660	2s	10ms/step	-	loss:	7.9636e-04	-	mae:
0.0584387/660	2s	10ms/step	-	loss:	7.9552e-04	-	mae:
0.0584394/660							

Battery SoC Estimation Project Report

2s 0.0583401/660	10ms/step	-	loss:	7.9467e-04	-	mae:
2s 0.0582408/660	10ms/step	-	loss:	7.9380e-04	-	mae:
2s 0.0582415/660	10ms/step	-	loss:	7.9292e-04	-	mae:
2s 0.0581421/660	10ms/step	-	loss:	7.9207e-04	-	mae:
2s 0.0580427/660	10ms/step	-	loss:	7.9136e-04	-	mae:
2s 0.0580434/660	10ms/step	-	loss:	7.9067e-04	-	mae:
2s 0.0579439/660	10ms/step	-	loss:	7.8988e-04	-	mae:
2s 0.0579445/660	10ms/step	-	loss:	7.8934e-04	-	mae:
2s 0.0578452/660	10ms/step	-	loss:	7.8871e-04	-	mae:
2s 0.0578459/660	10ms/step	-	loss:	7.8798e-04	-	mae:
1s 0.0577466/660	10ms/step	-	loss:	7.8727e-04	-	mae:
1s 0.0577472/660	10ms/step	-	loss:	7.8658e-04	-	mae:
1s 0.0576479/660	10ms/step	-	loss:	7.8599e-04	-	mae:
1s 0.0576486/660	10ms/step	-	loss:	7.8530e-04	-	mae:
1s 0.0575493/660	10ms/step	-	loss:	7.8459e-04	-	mae:
1s 0.0575500/660	10ms/step	-	loss:	7.8389e-04	-	mae:
1s 0.0574507/660	10ms/step	-	loss:	7.8320e-04	-	mae:
1s 0.0574514/660	10ms/step	-	loss:	7.8255e-04	-	mae:
1s 0.0573521/660	10ms/step	-	loss:	7.8191e-04	-	mae:
1s 0.0573528/660	10ms/step	-	loss:	7.8126e-04	-	mae:
1s 0.0572535/660	10ms/step	-	loss:	7.8059e-04	-	mae:
1s 0.0572542/660	10ms/step	-	loss:	7.7991e-04	-	mae:
1s 0.0571549/660	10ms/step	-	loss:	7.7924e-04	-	mae:
1s 0.0571556/660	10ms/step	-	loss:	7.7860e-04	-	mae:
0s 0.0570563/660	10ms/step	-	loss:	7.7798e-04	-	mae:
0s 0.0570568/660	10ms/step	-	loss:	7.7737e-04	-	mae:
0s 0.0570575/660	10ms/step	-	loss:	7.7694e-04	-	mae:
0s 0.0569582/660	10ms/step	-	loss:	7.7635e-04	-	mae:
0s 0.0569589/660	10ms/step	-	loss:	7.7575e-04	-	mae:
0s 0.0568595/660	10ms/step	-	loss:	7.7515e-04	-	mae:
0s 0.0568601/660	10ms/step	-	loss:	7.7465e-04	-	mae:
0s 0.0568608/660	10ms/step	-	loss:	7.7414e-04	-	mae:
0s 0.0567614/660	10ms/step	-	loss:	7.7357e-04	-	mae:

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0s	10ms/step	-	loss:	7.7308e-04	-	mae:
0.0567620/660						
0s	10ms/step	-	loss:	7.7258e-04	-	mae:
0.0566627/660						
0s	10ms/step	-	loss:	7.7200e-04	-	mae:
0.0566633/660						
0s	9ms/step	-	loss:	7.7151e-04	-	mae: 0.0566
640/660						
0s	9ms/step	-	loss:	7.7095e-04	-	mae:
0.0565647/660						
0s	9ms/step	-	loss:	7.7040e-04	-	mae:
0.0565654/660						
0s	9ms/step	-	loss:	7.6985e-04	-	mae:
0.0565660/660						
7s 10ms/step - loss: 7.6931e-04 - mae: 0.0564 - val_loss: 6.1679e-04 - val_mae: 0.0455						
Epoch 5/200						
1/660	38:43	4s/step	-	loss: 6.7711e-04	-	mae:
0.0513	5/660					
8s	13ms/step	-	loss:	6.5654e-04	-	mae: 0.0493
	10/660					
8s	12ms/step	-	loss:	6.7241e-04	-	mae:
0.0508	15/660					
7s	12ms/step	-	loss:	6.7690e-04	-	mae:
0.0513	20/660					
7s	12ms/step	-	loss:	6.8279e-04	-	mae:
0.0519	25/660					
7s	11ms/step	-	loss:	6.8576e-04	-	mae:
0.0522	31/660					
7s	11ms/step	-	loss:	6.8611e-04	-	mae:
0.0522	36/660					
6s	11ms/step	-	loss:	6.8723e-04	-	mae:
0.0523	42/660					
6s	11ms/step	-	loss:	6.9249e-04	-	mae:
0.0528	48/660					
6s	11ms/step	-	loss:	6.9648e-04	-	mae:
0.0532	54/660					
6s	10ms/step	-	loss:	7.0002e-04	-	mae:
0.0535	60/660					
6s	10ms/step	-	loss:	7.0250e-04	-	mae:
0.0538	67/660					
5s	10ms/step	-	loss:	7.0365e-04	-	mae:
0.0539	74/660					
5s	10ms/step	-	loss:	7.0395e-04	-	mae:
0.0540	81/660					
5s	10ms/step	-	loss:	7.0377e-04	-	mae:
0.0540	88/660					
5s	9ms/step	-	loss:	7.0346e-04	-	mae: 0.0539
	95/660					
5s	9ms/step	-	loss:	7.0310e-04	-	mae:
0.0539102/660						
5s	9ms/step	-	loss:	7.0302e-04	-	mae:
0.0539109/660						
5s	9ms/step	-	loss:	7.0275e-04	-	mae:
0.0539116/660						
4s	9ms/step	-	loss:	7.0242e-04	-	mae:
0.0539123/660						
4s	9ms/step	-	loss:	7.0258e-04	-	mae:
0.0540130/660						
4s	9ms/step	-	loss:	7.0245e-04	-	mae:
0.0540137/660						
4s	9ms/step	-	loss:	7.0235e-04	-	mae:
0.0540143/660						
4s	9ms/step	-	loss:	7.0224e-04	-	mae:
0.0540150/660						
4s	9ms/step	-	loss:	7.0206e-04	-	mae:
0.0540156/660						

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4s	9ms/step	-	loss:	7.0184e-04	-	mae:
0.0540163/660						
4s	9ms/step	-	loss:	7.0143e-04	-	mae:
0.0540169/660						
4s	9ms/step	-	loss:	7.0106e-04	-	mae:
0.0540176/660						
4s	9ms/step	-	loss:	7.0068e-04	-	mae:
0.0539182/660						
4s	9ms/step	-	loss:	7.0028e-04	-	mae:
0.0539189/660						
4s	9ms/step	-	loss:	6.9971e-04	-	mae:
0.0539196/660						
4s	9ms/step	-	loss:	6.9920e-04	-	mae:
0.0538202/660						
4s	9ms/step	-	loss:	6.9875e-04	-	mae:
0.0538209/660						
3s	9ms/step	-	loss:	6.9833e-04	-	mae:
0.0538216/660						
3s	9ms/step	-	loss:	6.9806e-04	-	mae:
0.0538223/660						
3s	9ms/step	-	loss:	6.9798e-04	-	mae:
0.0538229/660						
3s	9ms/step	-	loss:	6.9791e-04	-	mae:
0.0538236/660						
3s	9ms/step	-	loss:	6.9781e-04	-	mae:
0.0538242/660						
3s	9ms/step	-	loss:	6.9773e-04	-	mae:
0.0538248/660						
3s	9ms/step	-	loss:	6.9761e-04	-	mae:
0.0538254/660						
3s	9ms/step	-	loss:	6.9744e-04	-	mae:
0.0538260/660						
3s	9ms/step	-	loss:	6.9724e-04	-	mae:
0.0538267/660						
3s	9ms/step	-	loss:	6.9707e-04	-	mae:
0.0538274/660						
3s	9ms/step	-	loss:	6.9692e-04	-	mae:
0.0538279/660						
3s	9ms/step	-	loss:	6.9679e-04	-	mae:
0.0538285/660						
3s	9ms/step	-	loss:	6.9656e-04	-	mae:
0.0538291/660						
3s	9ms/step	-	loss:	6.9630e-04	-	mae:
0.0538298/660						
3s	9ms/step	-	loss:	6.9593e-04	-	mae:
0.0538304/660						
3s	9ms/step	-	loss:	6.9561e-04	-	mae:
0.0537310/660						
3s	9ms/step	-	loss:	6.9527e-04	-	mae:
0.0537317/660						
2s	9ms/step	-	loss:	6.9485e-04	-	mae:
0.0537324/660						
2s	9ms/step	-	loss:	6.9441e-04	-	mae:
0.0537331/660						
2s	9ms/step	-	loss:	6.9396e-04	-	mae:
0.0536338/660						
2s	9ms/step	-	loss:	6.9350e-04	-	mae:
0.0536345/660						
2s	9ms/step	-	loss:	6.9305e-04	-	mae:
0.0536352/660						
2s	9ms/step	-	loss:	6.9261e-04	-	mae:
0.0535359/660						
2s	9ms/step	-	loss:	6.9213e-04	-	mae:
0.0535365/660						
2s	9ms/step	-	loss:	6.9172e-04	-	mae:
0.0535372/660						

Battery SoC Estimation Project Report

2s 0.0534379/660	9ms/step	-	loss:	6.9123e-04	-	mae:
2s 0.0534385/660	9ms/step	-	loss:	6.9071e-04	-	mae:
2s 0.0534392/660	9ms/step	-	loss:	6.9027e-04	-	mae:
2s 0.0533399/660	9ms/step	-	loss:	6.8975e-04	-	mae:
2s 0.0533405/660	9ms/step	-	loss:	6.8921e-04	-	mae:
2s 0.0532412/660	9ms/step	-	loss:	6.8874e-04	-	mae:
2s 0.0532419/660	9ms/step	-	loss:	6.8818e-04	-	mae:
2s 0.0531425/660	9ms/step	-	loss:	6.8762e-04	-	mae:
2s 0.0531431/660	9ms/step	-	loss:	6.8716e-04	-	mae:
1s 0.0531436/660	9ms/step	-	loss:	6.8669e-04	-	mae:
1s 0.0530440/660	9ms/step	-	loss:	6.8630e-04	-	mae:
1s 0.0530444/660	9ms/step	-	loss:	6.8599e-04	-	mae:
1s 0.0530449/660	9ms/step	-	loss:	6.8570e-04	-	mae:
1s 0.0530453/660	9ms/step	-	loss:	6.8534e-04	-	mae:
1s 0.0530458/660	9ms/step	-	loss:	6.8506e-04	-	mae:
1s 0.0529463/660	9ms/step	-	loss:	6.8472e-04	-	mae:
1s 0.0529468/660	9ms/step	-	loss:	6.8439e-04	-	mae:
1s 0.0529473/660	9ms/step	-	loss:	6.8407e-04	-	mae:
1s 0.0529478/660	9ms/step	-	loss:	6.8374e-04	-	mae:
1s 0.0528483/660	9ms/step	-	loss:	6.8341e-04	-	mae:
1s 0.0528488/660	9ms/step	-	loss:	6.8308e-04	-	mae:
1s 0.0528493/660	9ms/step	-	loss:	6.8274e-04	-	mae:
1s 0.0528497/660	9ms/step	-	loss:	6.8242e-04	-	mae:
1s 0.0527501/660	9ms/step	-	loss:	6.8216e-04	-	mae:
1s 0.0527505/660	9ms/step	-	loss:	6.8191e-04	-	mae:
1s 0.0527510/660	9ms/step	-	loss:	6.8167e-04	-	mae:
1s 0.0527515/660	9ms/step	-	loss:	6.8139e-04	-	mae:
1s 0.0526525/660	9ms/step	-	loss:	6.8081e-04	-	mae:
1s 0.0526530/660	9ms/step	-	loss:	6.8051e-04	-	mae:
1s 0.0526535/660	9ms/step	-	loss:	6.8020e-04	-	mae:
1s 0.0526540/660	9ms/step	-	loss:	6.7989e-04	-	mae:
1s 0.0525545/660	9ms/step	-	loss:	6.7957e-04	-	mae:

Battery SoC Estimation Project Report

0.0525550/660	1s	9ms/step	-	loss:	6.7926e-04	-	mae:
0.0525555/660	1s	9ms/step	-	loss:	6.7896e-04	-	mae:
0.0525559/660	0s	9ms/step	-	loss:	6.7868e-04	-	mae:
0.0525563/660	0s	9ms/step	-	loss:	6.7845e-04	-	mae:
0.0524567/660	0s	9ms/step	-	loss:	6.7822e-04	-	mae:
0.0524572/660	0s	9ms/step	-	loss:	6.7801e-04	-	mae:
0.0524576/660	0s	9ms/step	-	loss:	6.7774e-04	-	mae:
0.0524581/660	0s	9ms/step	-	loss:	6.7753e-04	-	mae:
0.0524585/660	0s	9ms/step	-	loss:	6.7726e-04	-	mae:
0.0524589/660	0s	10ms/step	-	loss:	6.7682e-04	-	mae:
0.0523597/660	0s	10ms/step	-	loss:	6.7661e-04	-	mae:
0.0523601/660	0s	10ms/step	-	loss:	6.7640e-04	-	mae:
0.0523605/660	0s	10ms/step	-	loss:	6.7619e-04	-	mae:
0.0523609/660	0s	10ms/step	-	loss:	6.7600e-04	-	mae:
0.0523614/660	0s	10ms/step	-	loss:	6.7580e-04	-	mae:
0.0523621/660	0s	10ms/step	-	loss:	6.7555e-04	-	mae:
0.0522627/660	0s	10ms/step	-	loss:	6.7520e-04	-	mae:
0.0522634/660	0s	10ms/step	-	loss:	6.7489e-04	-	mae:
0.0522641/660	0s	10ms/step	-	loss:	6.7454e-04	-	mae:
0.0522648/660	0s	10ms/step	-	loss:	6.7421e-04	-	mae:
0.0521654/660	0s	10ms/step	-	loss:	6.7387e-04	-	mae:
0.0521660/660	0s	10ms/step	-	loss:	6.7358e-04	-	mae:

11s 11ms/step - loss: 6.7325e-04 - mae: 0.0521 - val_loss: 5.9738e-04 - val_mae: 0.0468

Epoch 6/200

0.0514	1/660	35:29	3s/step	-	loss:	6.4418e-04	-	mae:
	6/660							
0.0498	7s	12ms/step	-	loss:	6.1936e-04	-	mae:	0.0491
	11/660							
0.0502	7s	12ms/step	-	loss:	6.2572e-04	-	mae:	
	16/660							
0.0506	7s	12ms/step	-	loss:	6.3001e-04	-	mae:	
	21/660							
0.0508	6s	11ms/step	-	loss:	6.3351e-04	-	mae:	
	27/660							
0.0511	6s	11ms/step	-	loss:	6.3578e-04	-	mae:	
	33/660							
0.0515	6s	10ms/step	-	loss:	6.3852e-04	-	mae:	
	39/660							
0.0520	6s	10ms/step	-	loss:	6.4230e-04	-	mae:	
	46/660							
	51/660							

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0.0523	6s	10ms/step	-	loss:	6.5101e-04	-	mae:
	5s	58/660					
0.0528	5s	10ms/step	-	loss:	6.5504e-04	-	mae:
	65/660						
0.0530	5s	10ms/step	-	loss:	6.5729e-04	-	mae:
	72/660						
	5s	9ms/step	-	loss:	6.5850e-04	-	mae: 0.0531
	78/660						
0.0531	5s	9ms/step	-	loss:	6.5855e-04	-	mae:
	85/660						
0.0532	5s	9ms/step	-	loss:	6.5872e-04	-	mae:
	91/660						
0.0531	5s	9ms/step	-	loss:	6.5825e-04	-	mae:
	98/660						
	5s	9ms/step	-	loss:	6.5816e-04	-	mae:
0.0531105/660	4s	9ms/step	-	loss:	6.5813e-04	-	mae:
0.0531112/660	4s	9ms/step	-	loss:	6.5779e-04	-	mae:
0.0531119/660	4s	9ms/step	-	loss:	6.5808e-04	-	mae:
0.0532126/660	4s	9ms/step	-	loss:	6.5848e-04	-	mae:
0.0532133/660	4s	9ms/step	-	loss:	6.5847e-04	-	mae:
0.0532140/660	4s	9ms/step	-	loss:	6.5834e-04	-	mae:
0.0532147/660	4s	9ms/step	-	loss:	6.5810e-04	-	mae:
0.0532153/660	4s	9ms/step	-	loss:	6.5772e-04	-	mae:
0.0532160/660	4s	9ms/step	-	loss:	6.5720e-04	-	mae:
0.0531166/660	4s	9ms/step	-	loss:	6.5661e-04	-	mae:
0.0531173/660	4s	9ms/step	-	loss:	6.5603e-04	-	mae:
0.0530178/660	4s	9ms/step	-	loss:	6.5556e-04	-	mae:
0.0530185/660	4s	9ms/step	-	loss:	6.5477e-04	-	mae:
0.0529191/660	4s	9ms/step	-	loss:	6.5409e-04	-	mae:
0.0529197/660	4s	9ms/step	-	loss:	6.5343e-04	-	mae:
0.0528204/660	3s	9ms/step	-	loss:	6.5268e-04	-	mae:
0.0528211/660	3s	9ms/step	-	loss:	6.5196e-04	-	mae:
0.0527218/660	3s	9ms/step	-	loss:	6.5138e-04	-	mae:
0.0526224/660	3s	9ms/step	-	loss:	6.5098e-04	-	mae:
0.0526230/660	3s	9ms/step	-	loss:	6.5059e-04	-	mae:
0.0526236/660	3s	9ms/step	-	loss:	6.5024e-04	-	mae:
0.0525243/660	3s	9ms/step	-	loss:	6.4989e-04	-	mae:
0.0525249/660	3s	9ms/step	-	loss:	6.4959e-04	-	mae:
0.0525256/660	3s	9ms/step	-	loss:	6.4924e-04	-	mae:
0.0525262/660	3s	9ms/step	-	loss:	6.4900e-04	-	mae:
0.0524269/660							

Battery SoC Estimation Project Report

3s	9ms/step	-	loss:	6.4877e-04	-	mae:	
0.0524276/660	3s	9ms/step	-	loss:	6.4855e-04	-	mae:
0.0524283/660	3s	9ms/step	-	loss:	6.4829e-04	-	mae:
0.0524289/660	3s	9ms/step	-	loss:	6.4804e-04	-	mae:
0.0524296/660	3s	9ms/step	-	loss:	6.4770e-04	-	mae:
0.0523301/660	3s	9ms/step	-	loss:	6.4747e-04	-	mae:
0.0523307/660	3s	9ms/step	-	loss:	6.4720e-04	-	mae:
0.0523314/660	2s	9ms/step	-	loss:	6.4690e-04	-	mae:
0.0523320/660	2s	9ms/step	-	loss:	6.4666e-04	-	mae:
0.0523327/660	2s	9ms/step	-	loss:	6.4640e-04	-	mae:
0.0522334/660	2s	9ms/step	-	loss:	6.4616e-04	-	mae:
0.0522341/660	2s	9ms/step	-	loss:	6.4592e-04	-	mae:
0.0522348/660	2s	9ms/step	-	loss:	6.4568e-04	-	mae:
0.0522355/660	2s	9ms/step	-	loss:	6.4542e-04	-	mae:
0.0522361/660	2s	9ms/step	-	loss:	6.4517e-04	-	mae:
0.0522368/660	2s	8ms/step	-	loss:	6.4486e-04	-	mae:
0.0521375/660	2s	8ms/step	-	loss:	6.4454e-04	-	mae:
0.0521382/660	2s	8ms/step	-	loss:	6.4420e-04	-	mae:
0.0521389/660	2s	8ms/step	-	loss:	6.4386e-04	-	mae:
0.0520395/660	2s	8ms/step	-	loss:	6.4354e-04	-	mae:
0.0520402/660	2s	8ms/step	-	loss:	6.4314e-04	-	mae:
0.0520408/660	2s	8ms/step	-	loss:	6.4277e-04	-	mae:
0.0520415/660	2s	8ms/step	-	loss:	6.4234e-04	-	mae:
0.0519422/660	2s	8ms/step	-	loss:	6.4189e-04	-	mae:
0.0519427/660	1s	8ms/step	-	loss:	6.4158e-04	-	mae:
0.0519433/660	1s	8ms/step	-	loss:	6.4119e-04	-	mae:
0.0518440/660	1s	8ms/step	-	loss:	6.4074e-04	-	mae:
0.0518447/660	1s	8ms/step	-	loss:	6.4032e-04	-	mae:
0.0517453/660	1s	8ms/step	-	loss:	6.3996e-04	-	mae:
0.0517459/660	1s	8ms/step	-	loss:	6.3961e-04	-	mae:
0.0517466/660	1s	8ms/step	-	loss:	6.3923e-04	-	mae:
0.0517473/660	1s	8ms/step	-	loss:	6.3884e-04	-	mae:
0.0516480/660	1s	8ms/step	-	loss:	6.3846e-04	-	mae:
0.0516487/660							

Battery SoC Estimation Project Report						
0.0516493/660	1s	8ms/step	-	loss:	6.3808e-04	- mae:
0.0515500/660	1s	8ms/step	-	loss:	6.3776e-04	- mae:
0.0515507/660	1s	8ms/step	-	loss:	6.3737e-04	- mae:
0.0515514/660	1s	8ms/step	-	loss:	6.3701e-04	- mae:
0.0514520/660	1s	8ms/step	-	loss:	6.3665e-04	- mae:
0.0514526/660	1s	8ms/step	-	loss:	6.3634e-04	- mae:
0.0514533/660	1s	8ms/step	-	loss:	6.3601e-04	- mae:
0.0513540/660	1s	8ms/step	-	loss:	6.3562e-04	- mae:
0.0513547/660	0s	8ms/step	-	loss:	6.3522e-04	- mae:
0.0513553/660	0s	8ms/step	-	loss:	6.3484e-04	- mae:
0.0513559/660	0s	8ms/step	-	loss:	6.3454e-04	- mae:
0.0512566/660	0s	8ms/step	-	loss:	6.3424e-04	- mae:
0.0512573/660	0s	8ms/step	-	loss:	6.3389e-04	- mae:
0.0512580/660	0s	8ms/step	-	loss:	6.3354e-04	- mae:
0.0511587/660	0s	8ms/step	-	loss:	6.3320e-04	- mae:
0.0511594/660	0s	8ms/step	-	loss:	6.3285e-04	- mae:
0.0511600/660	0s	8ms/step	-	loss:	6.3249e-04	- mae:
0.0511606/660	0s	8ms/step	-	loss:	6.3219e-04	- mae:
0.0510613/660	0s	8ms/step	-	loss:	6.3190e-04	- mae:
0.0510620/660	0s	8ms/step	-	loss:	6.3156e-04	- mae:
0.0510626/660	0s	8ms/step	-	loss:	6.3121e-04	- mae:
0.0510633/660	0s	8ms/step	-	loss:	6.3092e-04	- mae:
0.0509640/660	0s	8ms/step	-	loss:	6.3058e-04	- mae:
0.0509646/660	0s	8ms/step	-	loss:	6.3025e-04	- mae:
0.0509653/660	0s	8ms/step	-	loss:	6.2997e-04	- mae:
0.0509660/660	0s	8ms/step	-	loss:	6.2963e-04	- mae:
0.0508660/660	0s	8ms/step	-	loss:	6.2931e-04	- mae:
9s 9ms/step - loss: 6.2927e-04 - mae: 0.0508 - val_loss: 4.9739e-04 - val_mae: 0.0386						
Epoch 7/200						
0.0421	1/660	43:53	4s/step	-	loss:	5.2344e-04 - mae:
	6/660					
8s	12ms/step	-	loss:	4.9127e-04	- mae:	0.0387
	11/660					
0.0415	7s	12ms/step	-	loss:	5.1917e-04	- mae:
	16/660					
0.0432	7s	12ms/step	-	loss:	5.3568e-04	- mae:
	21/660					
0.0442	7s	12ms/step	-	loss:	5.4561e-04	- mae:
	27/660					

Battery SoC Estimation Project Report

0.0450	7s	11ms/step 33/660	-	loss:	5.5386e-04	-	mae:
0.0457	6s	11ms/step 39/660	-	loss:	5.6106e-04	-	mae:
0.0464	6s	10ms/step 46/660	-	loss:	5.6815e-04	-	mae:
0.0472	5s	10ms/step 53/660	-	loss:	5.7618e-04	-	mae:
0.0479	5s	10ms/step 59/660	-	loss:	5.8336e-04	-	mae:
0.0484	5s	10ms/step 64/660	-	loss:	5.8822e-04	-	mae:
0.0487	5s	10ms/step 71/660	-	loss:	5.9102e-04	-	mae:
0.0490	5s	10ms/step 78/660	-	loss:	5.9382e-04	-	mae:
0.0492	5s	9ms/step 85/660	-	loss:	5.9519e-04	-	mae: 0.0491
0.0492	5s	9ms/step 92/660	-	loss:	5.9623e-04	-	mae:
0.0492	5s	9ms/step 99/660	-	loss:	5.9645e-04	-	mae:
0.0493106/660	4s	9ms/step	-	loss:	5.9700e-04	-	mae:
0.0494113/660	4s	9ms/step	-	loss:	5.9746e-04	-	mae:
0.0494120/660	4s	9ms/step	-	loss:	5.9759e-04	-	mae:
0.0495127/660	4s	9ms/step	-	loss:	5.9834e-04	-	mae:
0.0496134/660	4s	9ms/step	-	loss:	5.9907e-04	-	mae:
0.0496141/660	4s	9ms/step	-	loss:	5.9955e-04	-	mae:
0.0497148/660	4s	9ms/step	-	loss:	5.9980e-04	-	mae:
0.0497155/660	4s	9ms/step	-	loss:	5.9990e-04	-	mae:
0.0497162/660	4s	9ms/step	-	loss:	5.9979e-04	-	mae:
0.0496169/660	4s	9ms/step	-	loss:	5.9948e-04	-	mae:
0.0496176/660	4s	9ms/step	-	loss:	5.9909e-04	-	mae:
0.0496183/660	4s	9ms/step	-	loss:	5.9868e-04	-	mae:
0.0495189/660	4s	9ms/step	-	loss:	5.9817e-04	-	mae:
0.0495195/660	3s	9ms/step	-	loss:	5.9769e-04	-	mae:
0.0495202/660	3s	9ms/step	-	loss:	5.9724e-04	-	mae:
0.0494209/660	3s	9ms/step	-	loss:	5.9673e-04	-	mae:
0.0494216/660	3s	9ms/step	-	loss:	5.9627e-04	-	mae:
0.0494223/660	3s	9ms/step	-	loss:	5.9587e-04	-	mae:
0.0493230/660	3s	8ms/step	-	loss:	5.9560e-04	-	mae:
0.0493237/660	3s	8ms/step	-	loss:	5.9535e-04	-	mae:
0.0493243/660	3s	8ms/step	-	loss:	5.9507e-04	-	mae:
0.0493250/660				loss:	5.9486e-04	-	mae:

Battery SoC Estimation Project Report

0.0493257/660	3s	8ms/step	-	loss:	5.9459e-04	-	mae:
0.0492263/660	3s	8ms/step	-	loss:	5.9426e-04	-	mae:
0.0492270/660	3s	8ms/step	-	loss:	5.9405e-04	-	mae:
0.0492277/660	3s	8ms/step	-	loss:	5.9382e-04	-	mae:
0.0492283/660	3s	8ms/step	-	loss:	5.9363e-04	-	mae:
0.0492289/660	3s	8ms/step	-	loss:	5.9344e-04	-	mae:
0.0492296/660	3s	8ms/step	-	loss:	5.9323e-04	-	mae:
0.0491302/660	3s	8ms/step	-	loss:	5.9294e-04	-	mae:
0.0491309/660	2s	8ms/step	-	loss:	5.9270e-04	-	mae:
0.0491314/660	2s	8ms/step	-	loss:	5.9239e-04	-	mae:
0.0491321/660	2s	8ms/step	-	loss:	5.9216e-04	-	mae:
0.0491328/660	2s	8ms/step	-	loss:	5.9182e-04	-	mae:
0.0490335/660	2s	8ms/step	-	loss:	5.9149e-04	-	mae:
0.0490342/660	2s	8ms/step	-	loss:	5.9114e-04	-	mae:
0.0490349/660	2s	8ms/step	-	loss:	5.9080e-04	-	mae:
0.0489356/660	2s	8ms/step	-	loss:	5.9050e-04	-	mae:
0.0489363/660	2s	8ms/step	-	loss:	5.9022e-04	-	mae:
0.0489370/660	2s	8ms/step	-	loss:	5.8994e-04	-	mae:
0.0489376/660	2s	8ms/step	-	loss:	5.8966e-04	-	mae:
0.0489383/660	2s	8ms/step	-	loss:	5.8939e-04	-	mae:
0.0488390/660	2s	8ms/step	-	loss:	5.8908e-04	-	mae:
0.0488397/660	2s	8ms/step	-	loss:	5.8876e-04	-	mae:
0.0488403/660	2s	8ms/step	-	loss:	5.8840e-04	-	mae:
0.0488410/660	2s	8ms/step	-	loss:	5.8807e-04	-	mae:
0.0487417/660	2s	8ms/step	-	loss:	5.8768e-04	-	mae:
0.0487424/660	1s	8ms/step	-	loss:	5.8692e-04	-	mae:
0.0487430/660	1s	8ms/step	-	loss:	5.8662e-04	-	mae:
0.0486437/660	1s	8ms/step	-	loss:	5.8628e-04	-	mae:
0.0486442/660	1s	8ms/step	-	loss:	5.8605e-04	-	mae:
0.0486449/660	1s	8ms/step	-	loss:	5.8573e-04	-	mae:
0.0486456/660	1s	8ms/step	-	loss:	5.8542e-04	-	mae:
0.0485463/660	1s	8ms/step	-	loss:	5.8512e-04	-	mae:
0.0485470/660							

Battery SoC Estimation Project Report

1s	8ms/step	-	loss:	5.8482e-04	-	mae:
0.0485477/660						
1s	8ms/step	-	loss:	5.8451e-04	-	mae:
0.0485484/660						
1s	8ms/step	-	loss:	5.8418e-04	-	mae:
0.0484491/660						
1s	8ms/step	-	loss:	5.8383e-04	-	mae:
0.0484497/660						
1s	8ms/step	-	loss:	5.8353e-04	-	mae:
0.0484503/660						
1s	8ms/step	-	loss:	5.8324e-04	-	mae:
0.0483510/660						
1s	8ms/step	-	loss:	5.8294e-04	-	mae:
0.0483517/660						
1s	8ms/step	-	loss:	5.8263e-04	-	mae:
0.0483524/660						
1s	8ms/step	-	loss:	5.8232e-04	-	mae:
0.0483531/660						
1s	8ms/step	-	loss:	5.8201e-04	-	mae:
0.0482537/660						
1s	8ms/step	-	loss:	5.8175e-04	-	mae:
0.0482544/660						
0s	8ms/step	-	loss:	5.8145e-04	-	mae:
0.0482551/660						
0s	8ms/step	-	loss:	5.8117e-04	-	mae:
0.0482558/660						
0s	8ms/step	-	loss:	5.8091e-04	-	mae:
0.0482565/660						
0s	8ms/step	-	loss:	5.8066e-04	-	mae:
0.0481570/660						
0s	8ms/step	-	loss:	5.8050e-04	-	mae:
0.0481577/660						
0s	8ms/step	-	loss:	5.8027e-04	-	mae:
0.0481584/660						
0s	8ms/step	-	loss:	5.8005e-04	-	mae:
0.0481591/660						
0s	8ms/step	-	loss:	5.7983e-04	-	mae:
0.0481598/660						
0s	8ms/step	-	loss:	5.7962e-04	-	mae:
0.0481605/660						
0s	8ms/step	-	loss:	5.7941e-04	-	mae:
0.0480611/660						
0s	8ms/step	-	loss:	5.7924e-04	-	mae:
0.0480617/660						
0s	8ms/step	-	loss:	5.7907e-04	-	mae:
0.0480624/660						
0s	8ms/step	-	loss:	5.7886e-04	-	mae:
0.0480631/660						
0s	8ms/step	-	loss:	5.7866e-04	-	mae:
0.0480638/660						
0s	8ms/step	-	loss:	5.7847e-04	-	mae:
0.0480645/660						
0s	8ms/step	-	loss:	5.7828e-04	-	mae:
0.0479651/660						
0s	8ms/step	-	loss:	5.7810e-04	-	mae:
0.0479658/660						
0s	8ms/step	-	loss:	5.7790e-04	-	mae:
0.0479660/660						

10s 9ms/step - loss: 5.7782e-04 - mae: 0.0479 - val_loss: 4.2387e-04 - val_mae: 0.0330

Epoch 8/200

	1/660	44:25	4s/step	-	loss:	5.1470e-04	-	mae:
0.0422	6/660							
8s	12ms/step	-	loss:	5.0231e-04	-	mae:	0.0412	
	11/660							
0.0437	7s	12ms/step	-	loss:	5.2706e-04	-	mae:	
	16/660							

Battery SoC Estimation Project Report

0.0447	7s	12ms/step	-	loss:	5.3716e-04	-	mae:
		21/660					
0.0453	7s	12ms/step	-	loss:	5.4277e-04	-	mae:
		27/660					
0.0455	7s	11ms/step	-	loss:	5.4491e-04	-	mae:
		33/660					
0.0456	6s	11ms/step	-	loss:	5.4634e-04	-	mae:
		39/660					
0.0460	6s	10ms/step	-	loss:	5.5067e-04	-	mae:
		45/660					
0.0466	5s	10ms/step	-	loss:	5.6192e-04	-	mae:
		52/660					
0.0471	5s	10ms/step	-	loss:	5.6528e-04	-	mae:
		58/660					
0.0475	5s	10ms/step	-	loss:	5.6749e-04	-	mae:
		65/660					
0.0477	5s	10ms/step	-	loss:	5.6833e-04	-	mae:
		70/660					
0.0478	5s	77/660					
		9ms/step	-	loss:	5.6846e-04	-	mae: 0.0478
		84/660					
0.0478	5s	9ms/step	-	loss:	5.6848e-04	-	mae:
		91/660					
0.0478	5s	9ms/step	-	loss:	5.6812e-04	-	mae:
		97/660					
0.0478103/660	5s	9ms/step	-	loss:	5.6821e-04	-	mae:
		9ms/step					
0.0478110/660	4s	9ms/step	-	loss:	5.6831e-04	-	mae:
		9ms/step					
0.0478117/660	4s	9ms/step	-	loss:	5.6821e-04	-	mae:
		9ms/step					
0.0478124/660	4s	9ms/step	-	loss:	5.6817e-04	-	mae:
		9ms/step					
0.0479131/660	4s	9ms/step	-	loss:	5.6839e-04	-	mae:
		9ms/step					
0.0479138/660	4s	9ms/step	-	loss:	5.6825e-04	-	mae:
		9ms/step					
0.0479145/660	4s	9ms/step	-	loss:	5.6814e-04	-	mae:
		9ms/step					
0.0479152/660	4s	9ms/step	-	loss:	5.6807e-04	-	mae:
		9ms/step					
0.0479159/660	4s	9ms/step	-	loss:	5.6788e-04	-	mae:
		9ms/step					
0.0479166/660	4s	9ms/step	-	loss:	5.6750e-04	-	mae:
		9ms/step					
0.0478173/660	4s	9ms/step	-	loss:	5.6694e-04	-	mae:
		9ms/step					
0.0478180/660	4s	9ms/step	-	loss:	5.6648e-04	-	mae:
		9ms/step					
0.0477187/660	4s	9ms/step	-	loss:	5.6592e-04	-	mae:
		9ms/step					
0.0477194/660	4s	9ms/step	-	loss:	5.6525e-04	-	mae:
		9ms/step					
0.0476199/660	3s	9ms/step	-	loss:	5.6466e-04	-	mae:
		9ms/step					
0.0476206/660	3s	9ms/step	-	loss:	5.6427e-04	-	mae:
		9ms/step					
0.0476213/660	3s	9ms/step	-	loss:	5.6376e-04	-	mae:
		9ms/step					
0.0475219/660	3s	9ms/step	-	loss:	5.6333e-04	-	mae:
		9ms/step					
0.0475225/660	3s	9ms/step	-	loss:	5.6309e-04	-	mae:
		9ms/step					
0.0475231/660	3s	9ms/step	-	loss:	5.6297e-04	-	mae:

Battery SoC Estimation Project Report						
0.0475238/660	3s	9ms/step	-	loss:	5.6287e-04	- mae:
	3s	9ms/step	-	loss:	5.6276e-04	- mae:
0.0475245/660	3s	9ms/step	-	loss:	5.6263e-04	- mae:
0.0475252/660	3s	9ms/step	-	loss:	5.6245e-04	- mae:
0.0475259/660	3s	9ms/step	-	loss:	5.6225e-04	- mae:
0.0475266/660	3s	8ms/step	-	loss:	5.6214e-04	- mae:
0.0475273/660	3s	8ms/step	-	loss:	5.6203e-04	- mae:
0.0475280/660	3s	8ms/step	-	loss:	5.6191e-04	- mae:
0.0475287/660	3s	8ms/step	-	loss:	5.6169e-04	- mae:
0.0474293/660	3s	8ms/step	-	loss:	5.6148e-04	- mae:
0.0474300/660	3s	8ms/step	-	loss:	5.6120e-04	- mae:
0.0474307/660	2s	8ms/step	-	loss:	5.6093e-04	- mae:
0.0474314/660	2s	8ms/step	-	loss:	5.6066e-04	- mae:
0.0474321/660	2s	8ms/step	-	loss:	5.6037e-04	- mae:
0.0474327/660	2s	8ms/step	-	loss:	5.6014e-04	- mae:
0.0473333/660	2s	8ms/step	-	loss:	5.5993e-04	- mae:
0.0473340/660	2s	8ms/step	-	loss:	5.5968e-04	- mae:
0.0473347/660	2s	8ms/step	-	loss:	5.5942e-04	- mae:
0.0473354/660	2s	8ms/step	-	loss:	5.5915e-04	- mae:
0.0473361/660	2s	8ms/step	-	loss:	5.5884e-04	- mae:
0.0472368/660	2s	8ms/step	-	loss:	5.5851e-04	- mae:
0.0472375/660	2s	8ms/step	-	loss:	5.5817e-04	- mae:
0.0472382/660	2s	8ms/step	-	loss:	5.5782e-04	- mae:
0.0472389/660	2s	8ms/step	-	loss:	5.5748e-04	- mae:
0.0471395/660	2s	8ms/step	-	loss:	5.5717e-04	- mae:
0.0471402/660	2s	8ms/step	-	loss:	5.5676e-04	- mae:
0.0471409/660	2s	8ms/step	-	loss:	5.5634e-04	- mae:
0.0470416/660	2s	8ms/step	-	loss:	5.5591e-04	- mae:
0.0470423/660	1s	8ms/step	-	loss:	5.5550e-04	- mae:
0.0470429/660	1s	8ms/step	-	loss:	5.5514e-04	- mae:
0.0469435/660	1s	8ms/step	-	loss:	5.5478e-04	- mae:
0.0469442/660	1s	8ms/step	-	loss:	5.5438e-04	- mae:
0.0469448/660	1s	8ms/step	-	loss:	5.5405e-04	- mae:
0.0468454/660						

Battery SoC Estimation Project Report

1s	8ms/step	-	loss:	5.5372e-04	-	mae:
0.0468460/660						
1s	8ms/step	-	loss:	5.5340e-04	-	mae:
0.0468467/660						
1s	8ms/step	-	loss:	5.5304e-04	-	mae:
0.0467474/660						
1s	8ms/step	-	loss:	5.5268e-04	-	mae:
0.0467481/660						
1s	8ms/step	-	loss:	5.5232e-04	-	mae:
0.0467488/660						
1s	8ms/step	-	loss:	5.5196e-04	-	mae:
0.0467495/660						
1s	8ms/step	-	loss:	5.5161e-04	-	mae:
0.0466502/660						
1s	8ms/step	-	loss:	5.5127e-04	-	mae:
0.0466509/660						
1s	8ms/step	-	loss:	5.5097e-04	-	mae:
0.0466515/660						
1s	8ms/step	-	loss:	5.5072e-04	-	mae:
0.0465522/660						
1s	8ms/step	-	loss:	5.5042e-04	-	mae:
0.0465529/660						
1s	8ms/step	-	loss:	5.5012e-04	-	mae:
0.0465536/660						
1s	8ms/step	-	loss:	5.4980e-04	-	mae:
0.0465543/660						
0s	8ms/step	-	loss:	5.4949e-04	-	mae:
0.0464550/660						
0s	8ms/step	-	loss:	5.4920e-04	-	mae:
0.0464557/660						
0s	8ms/step	-	loss:	5.4893e-04	-	mae:
0.0464564/660						
0s	8ms/step	-	loss:	5.4866e-04	-	mae:
0.0464571/660						
0s	8ms/step	-	loss:	5.4840e-04	-	mae:
0.0464576/660						
0s	8ms/step	-	loss:	5.4822e-04	-	mae:
0.0463582/660						
0s	8ms/step	-	loss:	5.4800e-04	-	mae:
0.0463588/660						
0s	8ms/step	-	loss:	5.4776e-04	-	mae:
0.0463595/660						
0s	8ms/step	-	loss:	5.4749e-04	-	mae:
0.0463602/660						
0s	8ms/step	-	loss:	5.4723e-04	-	mae:
0.0463609/660						
0s	8ms/step	-	loss:	5.4697e-04	-	mae:
0.0462616/660						
0s	8ms/step	-	loss:	5.4671e-04	-	mae:
0.0462623/660						
0s	8ms/step	-	loss:	5.4645e-04	-	mae:
0.0462630/660						
0s	8ms/step	-	loss:	5.4620e-04	-	mae:
0.0462637/660						
0s	8ms/step	-	loss:	5.4597e-04	-	mae:
0.0462644/660						
0s	8ms/step	-	loss:	5.4575e-04	-	mae:
0.0461651/660						
0s	8ms/step	-	loss:	5.4552e-04	-	mae:
0.0461657/660						
0s	8ms/step	-	loss:	5.4532e-04	-	mae:
0.0461660/660						
10s 9ms/step - loss: 5.4519e-04 - mae: 0.0461 - val_loss: 4.2918e-04 - val_mae: 0.0348						
Epoch 9/200						
0.0411	1/660	45:07	4s/step	-	loss: 4.9055e-04	- mae:
	6/660					

Battery SoC Estimation Project Report							
7s	12ms/step 11/660	-	loss:	4.4833e-04	-	mae:	0.0371
0.0397	7s 12ms/step 16/660	-	loss:	4.7344e-04	-	mae:	
0.0414	7s 12ms/step 21/660	-	loss:	4.9061e-04	-	mae:	
0.0429	7s 12ms/step 27/660	-	loss:	5.0579e-04	-	mae:	
0.0441	7s 11ms/step 33/660	-	loss:	5.1774e-04	-	mae:	
0.0450	6s 11ms/step 39/660	-	loss:	5.2665e-04	-	mae:	
0.0458	6s 10ms/step 46/660	-	loss:	5.3474e-04	-	mae:	
0.0466	6s 10ms/step 53/660	-	loss:	5.4320e-04	-	mae:	
0.0472	5s 10ms/step 60/660	-	loss:	5.4912e-04	-	mae:	
0.0476	5s 10ms/step 66/660	-	loss:	5.5277e-04	-	mae:	
0.0478	5s 9ms/step 72/660	-	loss:	5.5447e-04	-	mae:	0.0477
0.0479	5s 9ms/step 77/660	-	loss:	5.5567e-04	-	mae:	
0.0479	5s 9ms/step 84/660	-	loss:	5.5592e-04	-	mae:	
0.0479	5s 9ms/step 91/660	-	loss:	5.5654e-04	-	mae:	
0.0480	5s 9ms/step 97/660	-	loss:	5.5669e-04	-	mae:	
0.0480103/660	5s 9ms/step	-	loss:	5.5701e-04	-	mae:	
0.0481109/660	5s 9ms/step	-	loss:	5.5737e-04	-	mae:	
0.0481116/660	5s 9ms/step	-	loss:	5.5745e-04	-	mae:	
0.0481123/660	4s 9ms/step	-	loss:	5.5755e-04	-	mae:	
0.0482130/660	4s 9ms/step	-	loss:	5.5785e-04	-	mae:	
0.0482137/660	4s 9ms/step	-	loss:	5.5782e-04	-	mae:	
0.0482144/660	4s 9ms/step	-	loss:	5.5772e-04	-	mae:	
0.0481151/660	4s 9ms/step	-	loss:	5.5747e-04	-	mae:	
0.0481157/660	4s 9ms/step	-	loss:	5.5708e-04	-	mae:	
0.0481164/660	4s 9ms/step	-	loss:	5.5663e-04	-	mae:	
0.0480171/660	4s 9ms/step	-	loss:	5.5597e-04	-	mae:	
0.0480178/660	4s 9ms/step	-	loss:	5.5539e-04	-	mae:	
0.0479185/660	4s 9ms/step	-	loss:	5.5473e-04	-	mae:	
0.0478192/660	4s 9ms/step	-	loss:	5.5396e-04	-	mae:	
0.0478198/660	4s 9ms/step	-	loss:	5.5329e-04	-	mae:	
0.0477203/660	3s 9ms/step	-	loss:	5.5274e-04	-	mae:	
0.0477210/660	3s 9ms/step	-	loss:	5.5230e-04	-	mae:	
0.0477217/660	3s 9ms/step	-	loss:	5.5175e-04	-	mae:	

Battery SoC Estimation Project Report

0.0476223/660	3s	9ms/step	-	loss:	5.5126e-04	-	mae:
0.0476230/660	3s	9ms/step	-	loss:	5.5096e-04	-	mae:
0.0476237/660	3s	9ms/step	-	loss:	5.5064e-04	-	mae:
0.0475244/660	3s	9ms/step	-	loss:	5.5031e-04	-	mae:
0.0475251/660	3s	9ms/step	-	loss:	5.5002e-04	-	mae:
0.0475258/660	3s	9ms/step	-	loss:	5.4972e-04	-	mae:
0.0475265/660	3s	9ms/step	-	loss:	5.4938e-04	-	mae:
0.0474272/660	3s	8ms/step	-	loss:	5.4888e-04	-	mae:
0.0474279/660	3s	8ms/step	-	loss:	5.4867e-04	-	mae:
0.0474286/660	3s	8ms/step	-	loss:	5.4840e-04	-	mae:
0.0474293/660	3s	8ms/step	-	loss:	5.4811e-04	-	mae:
0.0474300/660	3s	8ms/step	-	loss:	5.4779e-04	-	mae:
0.0473307/660	2s	8ms/step	-	loss:	5.4750e-04	-	mae:
0.0473313/660	2s	8ms/step	-	loss:	5.4724e-04	-	mae:
0.0473320/660	2s	8ms/step	-	loss:	5.4697e-04	-	mae:
0.0473327/660	2s	8ms/step	-	loss:	5.4674e-04	-	mae:
0.0472332/660	2s	8ms/step	-	loss:	5.4658e-04	-	mae:
0.0472339/660	2s	8ms/step	-	loss:	5.4635e-04	-	mae:
0.0472346/660	2s	8ms/step	-	loss:	5.4612e-04	-	mae:
0.0472353/660	2s	8ms/step	-	loss:	5.4591e-04	-	mae:
0.0472360/660	2s	8ms/step	-	loss:	5.4569e-04	-	mae:
0.0472367/660	2s	8ms/step	-	loss:	5.4549e-04	-	mae:
0.0471374/660	2s	8ms/step	-	loss:	5.4530e-04	-	mae:
0.0471381/660	2s	8ms/step	-	loss:	5.4510e-04	-	mae:
0.0471388/660	2s	8ms/step	-	loss:	5.4493e-04	-	mae:
0.0471395/660	2s	8ms/step	-	loss:	5.4474e-04	-	mae:
0.0471402/660	2s	8ms/step	-	loss:	5.4452e-04	-	mae:
0.0471409/660	2s	8ms/step	-	loss:	5.4428e-04	-	mae:
0.0470416/660	2s	8ms/step	-	loss:	5.4401e-04	-	mae:
0.0470423/660	1s	8ms/step	-	loss:	5.4375e-04	-	mae:
0.0470430/660	1s	8ms/step	-	loss:	5.4348e-04	-	mae:
0.0470436/660	1s	8ms/step	-	loss:	5.4325e-04	-	mae:
0.0470442/660							

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0.0469449/660	1s	8ms/step	-	loss:	5.4303e-04	-	mae:
0.0469456/660	1s	8ms/step	-	loss:	5.4277e-04	-	mae:
0.0469460/660	1s	8ms/step	-	loss:	5.4251e-04	-	mae:
0.0469466/660	1s	8ms/step	-	loss:	5.4237e-04	-	mae:
0.0469472/660	1s	8ms/step	-	loss:	5.4217e-04	-	mae:
0.0468479/660	1s	8ms/step	-	loss:	5.4196e-04	-	mae:
0.0468486/660	1s	8ms/step	-	loss:	5.4142e-04	-	mae:
0.0468493/660	1s	8ms/step	-	loss:	5.4113e-04	-	mae:
0.0468500/660	1s	8ms/step	-	loss:	5.4085e-04	-	mae:
0.0467507/660	1s	8ms/step	-	loss:	5.4059e-04	-	mae:
0.0467514/660	1s	8ms/step	-	loss:	5.4034e-04	-	mae:
0.0467520/660	1s	8ms/step	-	loss:	5.4011e-04	-	mae:
0.0467526/660	1s	8ms/step	-	loss:	5.3987e-04	-	mae:
0.0467533/660	1s	8ms/step	-	loss:	5.3958e-04	-	mae:
0.0466539/660	1s	8ms/step	-	loss:	5.3931e-04	-	mae:
0.0466546/660	0s	8ms/step	-	loss:	5.3902e-04	-	mae:
0.0466550/660	0s	8ms/step	-	loss:	5.3885e-04	-	mae:
0.0466553/660	0s	8ms/step	-	loss:	5.3873e-04	-	mae:
0.0466556/660	0s	8ms/step	-	loss:	5.3861e-04	-	mae:
0.0465558/660	0s	9ms/step	-	loss:	5.3853e-04	-	mae:
0.0465561/660	0s	9ms/step	-	loss:	5.3841e-04	-	mae:
0.0465564/660	0s	9ms/step	-	loss:	5.3828e-04	-	mae:
0.0465566/660	0s	9ms/step	-	loss:	5.3820e-04	-	mae:
0.0465569/660	0s	9ms/step	-	loss:	5.3808e-04	-	mae:
0.0465572/660	0s	9ms/step	-	loss:	5.3796e-04	-	mae:
0.0465577/660	0s	9ms/step	-	loss:	5.3775e-04	-	mae:
0.0465581/660	0s	9ms/step	-	loss:	5.3759e-04	-	mae:
0.0464584/660	0s	9ms/step	-	loss:	5.3747e-04	-	mae:
0.0464589/660	0s	9ms/step	-	loss:	5.3726e-04	-	mae:
0.0464596/660	0s	9ms/step	-	loss:	5.3697e-04	-	mae:
0.0464603/660	0s	9ms/step	-	loss:	5.3668e-04	-	mae:
0.0464610/660	0s	9ms/step	-	loss:	5.3641e-04	-	mae:
0.0463617/660							

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0s	9ms/step	-	loss:	5.3613e-04	-	mae:		
0.0463624/660								
0s	9ms/step	-	loss:	5.3584e-04	-	mae:		
0.0463631/660								
0s	9ms/step	-	loss:	5.3556e-04	-	mae:		
0.0463638/660								
0s	9ms/step	-	loss:	5.3530e-04	-	mae:		
0.0462645/660								
0s	9ms/step	-	loss:	5.3505e-04	-	mae:		
0.0462652/660								
0s	9ms/step	-	loss:	5.3479e-04	-	mae:		
0.0462659/660								
0s	9ms/step	-	loss:	5.3454e-04	-	mae:		
0.0462660/660								
10s 10ms/step - loss: 5.3447e-04 - mae: 0.0462 - val_loss: 4.0178e-04 - val_mae: 0.0338								
Epoch 10/200								
0.0518	1/660	42:28	4s/step	-	loss:	5.8236e-04	-	mae:
	5/660							
9s	14ms/step	-	loss:	4.7707e-04	-	mae:	0.0413	
	9/660							
9s	14ms/step	-	loss:	4.7458e-04	-	mae:		
0.0411	13/660							
9s	14ms/step	-	loss:	4.8615e-04	-	mae:		
0.0422	17/660							
8s	14ms/step	-	loss:	4.9271e-04	-	mae:		
0.0429	21/660							
8s	14ms/step	-	loss:	5.0052e-04	-	mae:		
0.0437	25/660							
8s	14ms/step	-	loss:	5.0656e-04	-	mae:		
0.0443	29/660							
8s	13ms/step	-	loss:	5.1039e-04	-	mae:		
0.0446	34/660							
8s	13ms/step	-	loss:	5.1453e-04	-	mae:		
0.0450	38/660							
8s	13ms/step	-	loss:	5.1896e-04	-	mae:		
0.0455	43/660							
8s	13ms/step	-	loss:	5.2559e-04	-	mae:		
0.0461	47/660							
8s	13ms/step	-	loss:	5.2922e-04	-	mae:		
0.0465	52/660							
7s	13ms/step	-	loss:	5.3284e-04	-	mae:		
0.0468	57/660							
7s	13ms/step	-	loss:	5.3557e-04	-	mae:		
0.0471	61/660							
7s	13ms/step	-	loss:	5.3721e-04	-	mae:		
0.0473	65/660							
7s	13ms/step	-	loss:	5.3806e-04	-	mae:		
0.0473	69/660							
7s	13ms/step	-	loss:	5.3880e-04	-	mae:		
0.0474	74/660							
7s	13ms/step	-	loss:	5.3905e-04	-	mae:		
0.0474	78/660							
7s	13ms/step	-	loss:	5.3912e-04	-	mae:		
0.0474	83/660							
7s	13ms/step	-	loss:	5.3943e-04	-	mae:		
0.0475	90/660							
7s	12ms/step	-	loss:	5.3961e-04	-	mae:		
0.0475	97/660							
6s	12ms/step	-	loss:	5.3981e-04	-	mae:		
0.0475104/660								
6s	12ms/step	-	loss:	5.3995e-04	-	mae:		
0.0475111/660								
6s	12ms/step	-	loss:	5.3979e-04	-	mae:		
0.0475117/660								
6s	11ms/step	-	loss:	5.3983e-04	-	mae:		
0.0475124/660								

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6s 0.0476131/660	11ms/step	-	loss:	5.4018e-04	-	mae:
5s 0.0476138/660	11ms/step	-	loss:	5.4028e-04	-	mae:
5s 0.0476145/660	11ms/step	-	loss:	5.4021e-04	-	mae:
5s 0.0476151/660	11ms/step	-	loss:	5.3999e-04	-	mae:
5s 0.0475158/660	11ms/step	-	loss:	5.3970e-04	-	mae:
5s 0.0475165/660	10ms/step	-	loss:	5.3858e-04	-	mae:
5s 0.0474172/660	10ms/step	-	loss:	5.3810e-04	-	mae:
4s 0.0473184/660	10ms/step	-	loss:	5.3763e-04	-	mae:
4s 0.0473191/660	10ms/step	-	loss:	5.3703e-04	-	mae:
4s 0.0472198/660	10ms/step	-	loss:	5.3637e-04	-	mae:
4s 0.0472205/660	10ms/step	-	loss:	5.3575e-04	-	mae:
4s 0.0471212/660	10ms/step	-	loss:	5.3518e-04	-	mae:
4s 0.0470218/660	10ms/step	-	loss:	5.3468e-04	-	mae:
4s 0.0470225/660	10ms/step	-	loss:	5.3435e-04	-	mae:
4s 0.0470232/660	10ms/step	-	loss:	5.3409e-04	-	mae:
4s 0.0470238/660	10ms/step	-	loss:	5.3380e-04	-	mae:
4s 0.0469244/660	10ms/step	-	loss:	5.3354e-04	-	mae:
4s 0.0469251/660	10ms/step	-	loss:	5.3329e-04	-	mae:
3s 0.0469258/660	10ms/step	-	loss:	5.3297e-04	-	mae:
3s 0.0468265/660	10ms/step	-	loss:	5.3261e-04	-	mae:
3s 0.0468272/660	10ms/step	-	loss:	5.3232e-04	-	mae:
3s 0.0468279/660	10ms/step	-	loss:	5.3207e-04	-	mae:
3s 0.0468286/660	10ms/step	-	loss:	5.3186e-04	-	mae:
3s 293/660	9ms/step	-	loss:	5.3159e-04	-	mae: 0.0468
3s 0.0467300/660	9ms/step	-	loss:	5.3131e-04	-	mae:
3s 0.0467306/660	9ms/step	-	loss:	5.3100e-04	-	mae:
3s 0.0467311/660	9ms/step	-	loss:	5.3078e-04	-	mae:
3s 0.0467318/660	9ms/step	-	loss:	5.3059e-04	-	mae:
3s 0.0466325/660	9ms/step	-	loss:	5.3033e-04	-	mae:
3s 0.0466332/660	9ms/step	-	loss:	5.3007e-04	-	mae:
3s 0.0466339/660	9ms/step	-	loss:	5.2982e-04	-	mae:
2s 0.0466346/660	9ms/step	-	loss:	5.2955e-04	-	mae:

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2s 0.0465353/660	9ms/step	-	loss:	5.2927e-04	-	mae:
2s 0.0465360/660	9ms/step	-	loss:	5.2899e-04	-	mae:
2s 0.0465367/660	9ms/step	-	loss:	5.2868e-04	-	mae:
2s 0.0464374/660	9ms/step	-	loss:	5.2836e-04	-	mae:
2s 0.0464381/660	9ms/step	-	loss:	5.2804e-04	-	mae:
2s 0.0464388/660	9ms/step	-	loss:	5.2769e-04	-	mae:
2s 0.0464395/660	9ms/step	-	loss:	5.2736e-04	-	mae:
2s 0.0463402/660	9ms/step	-	loss:	5.2699e-04	-	mae:
2s 0.0463409/660	9ms/step	-	loss:	5.2658e-04	-	mae:
2s 0.0462416/660	9ms/step	-	loss:	5.2616e-04	-	mae:
2s 0.0462423/660	9ms/step	-	loss:	5.2574e-04	-	mae:
2s 0.0462430/660	9ms/step	-	loss:	5.2534e-04	-	mae:
2s 0.0461437/660	9ms/step	-	loss:	5.2496e-04	-	mae:
1s 0.0461442/660	9ms/step	-	loss:	5.2459e-04	-	mae:
1s 0.0461449/660	9ms/step	-	loss:	5.2435e-04	-	mae:
1s 0.0460456/660	9ms/step	-	loss:	5.2399e-04	-	mae:
1s 0.0460463/660	9ms/step	-	loss:	5.2364e-04	-	mae:
1s 0.0460470/660	9ms/step	-	loss:	5.2330e-04	-	mae:
1s 0.0459477/660	9ms/step	-	loss:	5.2298e-04	-	mae:
1s 0.0459484/660	9ms/step	-	loss:	5.2266e-04	-	mae:
1s 0.0459491/660	9ms/step	-	loss:	5.2234e-04	-	mae:
1s 0.0458497/660	9ms/step	-	loss:	5.2202e-04	-	mae:
1s 0.0458504/660	9ms/step	-	loss:	5.2175e-04	-	mae:
1s 0.0458511/660	9ms/step	-	loss:	5.2146e-04	-	mae:
1s 0.0458518/660	9ms/step	-	loss:	5.2118e-04	-	mae:
1s 0.0457525/660	9ms/step	-	loss:	5.2090e-04	-	mae:
1s 0.0457532/660	9ms/step	-	loss:	5.2060e-04	-	mae:
1s 0.0457539/660	9ms/step	-	loss:	5.2029e-04	-	mae:
1s 0.0457546/660	9ms/step	-	loss:	5.1998e-04	-	mae:
0s 0.0456553/660	9ms/step	-	loss:	5.1967e-04	-	mae:
0s 0.0456560/660	9ms/step	-	loss:	5.1939e-04	-	mae:
0s 0.0456566/660	9ms/step	-	loss:	5.1910e-04	-	mae:
0s 0.0455572/660	9ms/step	-	loss:	5.1886e-04	-	mae:

Battery SoC Estimation Project Report

0s 0.0455579/660	9ms/step	-	loss:	5.1862e-04	-	mae:
0s 0.0455586/660	9ms/step	-	loss:	5.1833e-04	-	mae:
0s 0.0455593/660	9ms/step	-	loss:	5.1804e-04	-	mae:
0s 0.0454600/660	9ms/step	-	loss:	5.1774e-04	-	mae:
0s 0.0454607/660	9ms/step	-	loss:	5.1745e-04	-	mae:
0s 0.0454614/660	9ms/step	-	loss:	5.1717e-04	-	mae:
0s 0.0454620/660	9ms/step	-	loss:	5.1689e-04	-	mae:
0s 0.0453626/660	9ms/step	-	loss:	5.1665e-04	-	mae:
0s 0.0453633/660	9ms/step	-	loss:	5.1641e-04	-	mae:
0s 0.0453640/660	9ms/step	-	loss:	5.1614e-04	-	mae:
0s 0.0453647/660	9ms/step	-	loss:	5.1589e-04	-	mae:
0s 0.0452654/660	9ms/step	-	loss:	5.1564e-04	-	mae:
0s 0.0452660/660	9ms/step	-	loss:	5.1539e-04	-	mae:
10s 10ms/step - loss: 5.1514e-04 - mae: 0.0452 - val_loss: 4.8196e-04 - val_mae: 0.0421						
Epoch 11/200						
1/660 0.0549	42:11 5/660	4s/step	-	loss:	6.0587e-04	-
8s 10/660	13ms/step	-	loss:	5.1944e-04	-	mae: 0.0462
8s 15/660	12ms/step	-	loss:	5.1522e-04	-	mae:
7s 20/660	12ms/step	-	loss:	5.1365e-04	-	mae:
7s 26/660	12ms/step	-	loss:	5.1392e-04	-	mae:
7s 32/660	11ms/step	-	loss:	5.1730e-04	-	mae:
6s 38/660	11ms/step	-	loss:	5.1838e-04	-	mae:
6s 44/660	11ms/step	-	loss:	5.2057e-04	-	mae:
6s 51/660	10ms/step	-	loss:	5.2465e-04	-	mae:
6s 58/660	10ms/step	-	loss:	5.2780e-04	-	mae:
5s 65/660	10ms/step	-	loss:	5.3014e-04	-	mae:
5s 72/660	10ms/step	-	loss:	5.3080e-04	-	mae:
5s 79/660	10ms/step	-	loss:	5.3057e-04	-	mae:
5s 86/660	9ms/step	-	loss:	5.2945e-04	-	mae: 0.0470
5s 91/660	9ms/step	-	loss:	5.2855e-04	-	mae:
5s 95/660	9ms/step	-	loss:	5.2753e-04	-	mae:
5s 99/660	10ms/step	-	loss:	5.2691e-04	-	mae:
5s 0.0467104/660	10ms/step	-	loss:	5.2621e-04	-	mae:
5s 0.0466109/660	10ms/step	-	loss:	5.2548e-04	-	mae:

Battery SoC Estimation Project Report

5s 0.0465113/660	10ms/step	-	loss:	5.2462e-04	-	mae:
5s 0.0465117/660	10ms/step	-	loss:	5.2393e-04	-	mae:
5s 0.0464122/660	10ms/step	-	loss:	5.2353e-04	-	mae:
5s 0.0464126/660	10ms/step	-	loss:	5.2313e-04	-	mae:
5s 0.0464131/660	10ms/step	-	loss:	5.2274e-04	-	mae:
5s 0.0463136/660	10ms/step	-	loss:	5.2207e-04	-	mae:
5s 0.0463140/660	10ms/step	-	loss:	5.2147e-04	-	mae:
5s 0.0462145/660	11ms/step	-	loss:	5.2094e-04	-	mae:
5s 0.0462150/660	11ms/step	-	loss:	5.2030e-04	-	mae:
5s 0.0461155/660	11ms/step	-	loss:	5.1964e-04	-	mae:
5s 0.0460159/660	11ms/step	-	loss:	5.1900e-04	-	mae:
5s 0.0460164/660	11ms/step	-	loss:	5.1843e-04	-	mae:
5s 0.0459169/660	11ms/step	-	loss:	5.1763e-04	-	mae:
5s 0.0458173/660	11ms/step	-	loss:	5.1688e-04	-	mae:
5s 0.0458178/660	11ms/step	-	loss:	5.1630e-04	-	mae:
5s 0.0457182/660	11ms/step	-	loss:	5.1555e-04	-	mae:
5s 0.0457186/660	11ms/step	-	loss:	5.1492e-04	-	mae:
5s 0.0456191/660	11ms/step	-	loss:	5.1424e-04	-	mae:
5s 0.0455196/660	11ms/step	-	loss:	5.1355e-04	-	mae:
5s 0.0455201/660	11ms/step	-	loss:	5.1286e-04	-	mae:
5s 0.0454206/660	11ms/step	-	loss:	5.1220e-04	-	mae:
4s 0.0454211/660	11ms/step	-	loss:	5.1162e-04	-	mae:
4s 0.0453215/660	11ms/step	-	loss:	5.1107e-04	-	mae:
4s 0.0453219/660	11ms/step	-	loss:	5.1069e-04	-	mae:
4s 0.0452223/660	11ms/step	-	loss:	5.1035e-04	-	mae:
4s 0.0452227/660	11ms/step	-	loss:	5.1004e-04	-	mae:
4s 0.0452232/660	11ms/step	-	loss:	5.0974e-04	-	mae:
4s 0.0452237/660	11ms/step	-	loss:	5.0938e-04	-	mae:
4s 0.0451241/660	11ms/step	-	loss:	5.0901e-04	-	mae:
4s 0.0451245/660	11ms/step	-	loss:	5.0874e-04	-	mae:
4s 0.0451249/660	11ms/step	-	loss:	5.0847e-04	-	mae:
4s 0.0451253/660	11ms/step	-	loss:	5.0821e-04	-	mae:
4s 0.0450257/660	11ms/step	-	loss:	5.0794e-04	-	mae:

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4s 0.0450261/660	11ms/step	-	loss:	5.0767e-04	-	mae:
4s 0.0450265/660	11ms/step	-	loss:	5.0744e-04	-	mae:
4s 0.0450269/660	11ms/step	-	loss:	5.0724e-04	-	mae:
4s 0.0450273/660	11ms/step	-	loss:	5.0705e-04	-	mae:
4s 0.0449277/660	11ms/step	-	loss:	5.0687e-04	-	mae:
4s 0.0449281/660	12ms/step	-	loss:	5.0669e-04	-	mae:
4s 0.0449285/660	12ms/step	-	loss:	5.0648e-04	-	mae:
4s 0.0449290/660	12ms/step	-	loss:	5.0625e-04	-	mae:
4s 0.0449295/660	12ms/step	-	loss:	5.0597e-04	-	mae:
4s 0.0448300/660	12ms/step	-	loss:	5.0567e-04	-	mae:
4s 0.0448305/660	12ms/step	-	loss:	5.0539e-04	-	mae:
4s 0.0448309/660	12ms/step	-	loss:	5.0510e-04	-	mae:
4s 0.0448314/660	12ms/step	-	loss:	5.0488e-04	-	mae:
4s 0.0447319/660	12ms/step	-	loss:	5.0460e-04	-	mae:
3s 0.0447324/660	12ms/step	-	loss:	5.0432e-04	-	mae:
3s 0.0447329/660	12ms/step	-	loss:	5.0405e-04	-	mae:
3s 0.0447334/660	12ms/step	-	loss:	5.0382e-04	-	mae:
3s 0.0447338/660	12ms/step	-	loss:	5.0360e-04	-	mae:
3s 0.0446343/660	12ms/step	-	loss:	5.0320e-04	-	mae:
3s 0.0446348/660	12ms/step	-	loss:	5.0299e-04	-	mae:
3s 0.0446352/660	12ms/step	-	loss:	5.0283e-04	-	mae:
3s 0.0446357/660	12ms/step	-	loss:	5.0261e-04	-	mae:
3s 0.0446361/660	12ms/step	-	loss:	5.0243e-04	-	mae:
3s 0.0446366/660	12ms/step	-	loss:	5.0222e-04	-	mae:
3s 0.0445371/660	12ms/step	-	loss:	5.0201e-04	-	mae:
3s 0.0445376/660	12ms/step	-	loss:	5.0178e-04	-	mae:
3s 0.0445381/660	12ms/step	-	loss:	5.0155e-04	-	mae:
3s 0.0445385/660	12ms/step	-	loss:	5.0138e-04	-	mae:
3s 0.0445390/660	12ms/step	-	loss:	5.0115e-04	-	mae:
3s 0.0444394/660	12ms/step	-	loss:	5.0096e-04	-	mae:
3s 0.0444398/660	12ms/step	-	loss:	5.0077e-04	-	mae:
3s 0.0444402/660	12ms/step	-	loss:	5.0057e-04	-	mae:
3s 0.0444406/660	12ms/step	-	loss:	5.0057e-04	-	mae:

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2s 0.0444410/660	12ms/step	-	loss:	5.0036e-04	-	mae:
2s 0.0443415/660	12ms/step	-	loss:	5.0016e-04	-	mae:
2s 0.0443420/660	12ms/step	-	loss:	4.9991e-04	-	mae:
2s 0.0443424/660	12ms/step	-	loss:	4.9965e-04	-	mae:
2s 0.0443429/660	12ms/step	-	loss:	4.9946e-04	-	mae:
2s 0.0443433/660	12ms/step	-	loss:	4.9922e-04	-	mae:
2s 0.0442437/660	12ms/step	-	loss:	4.9903e-04	-	mae:
2s 0.0442441/660	12ms/step	-	loss:	4.9884e-04	-	mae:
2s 0.0442445/660	12ms/step	-	loss:	4.9866e-04	-	mae:
2s 0.0442449/660	12ms/step	-	loss:	4.9848e-04	-	mae:
2s 0.0442453/660	12ms/step	-	loss:	4.9830e-04	-	mae:
2s 0.0442459/660	12ms/step	-	loss:	4.9813e-04	-	mae:
2s 0.0441466/660	12ms/step	-	loss:	4.9788e-04	-	mae:
2s 0.0441473/660	12ms/step	-	loss:	4.9761e-04	-	mae:
2s 0.0441479/660	12ms/step	-	loss:	4.9734e-04	-	mae:
2s 0.0441486/660	12ms/step	-	loss:	4.9710e-04	-	mae:
1s 0.0440493/660	12ms/step	-	loss:	4.9681e-04	-	mae:
1s 0.0440500/660	12ms/step	-	loss:	4.9652e-04	-	mae:
1s 0.0440506/660	12ms/step	-	loss:	4.9622e-04	-	mae:
1s 0.0440513/660	11ms/step	-	loss:	4.9599e-04	-	mae:
1s 0.0439520/660	11ms/step	-	loss:	4.9573e-04	-	mae:
1s 0.0439527/660	11ms/step	-	loss:	4.9546e-04	-	mae:
1s 0.0439534/660	11ms/step	-	loss:	4.9517e-04	-	mae:
1s 0.0439540/660	11ms/step	-	loss:	4.9487e-04	-	mae:
1s 0.0438547/660	11ms/step	-	loss:	4.9460e-04	-	mae:
1s 0.0438552/660	11ms/step	-	loss:	4.9430e-04	-	mae:
1s 0.0438558/660	11ms/step	-	loss:	4.9411e-04	-	mae:
1s 0.0438564/660	11ms/step	-	loss:	4.9388e-04	-	mae:
1s 0.0438571/660	11ms/step	-	loss:	4.9365e-04	-	mae:
0s 0.0437577/660	11ms/step	-	loss:	4.9340e-04	-	mae:
0s 0.0437584/660	11ms/step	-	loss:	4.9318e-04	-	mae:
0s 0.0437591/660	11ms/step	-	loss:	4.9292e-04	-	mae:
0s 0.0437598/660	11ms/step	-	loss:	4.9266e-04	-	mae:

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0s	11ms/step	-	loss:	4.9241e-04	-	mae:
0.0436605/660						
0s	11ms/step	-	loss:	4.9217e-04	-	mae:
0.0436611/660						
0s	11ms/step	-	loss:	4.9197e-04	-	mae:
0.0436618/660						
0s	11ms/step	-	loss:	4.9173e-04	-	mae:
0.0436625/660						
0s	11ms/step	-	loss:	4.9150e-04	-	mae:
0.0436632/660						
0s	11ms/step	-	loss:	4.9127e-04	-	mae:
0.0435639/660						
0s	11ms/step	-	loss:	4.9105e-04	-	mae:
0.0435645/660						
0s	11ms/step	-	loss:	4.9086e-04	-	mae:
0.0435649/660						
0s	11ms/step	-	loss:	4.9073e-04	-	mae:
0.0435655/660						
0s	11ms/step	-	loss:	4.9053e-04	-	mae:
0.0435660/660						
12s	12ms/step	- loss: 4.9034e-04 - mae: 0.0434 - val_loss: 3.3279e-04 - val_mae: 0.0272				
Epoch 12/200						
	1/660	26:31	2s/step	-	loss: 4.8425e-04	- mae:
0.0434	5/660					
8s	13ms/step	-	loss:	4.2633e-04	-	mae: 0.0376
	9/660					
8s	13ms/step	-	loss:	4.2640e-04	-	mae:
0.0376	14/660					
8s	13ms/step	-	loss:	4.3906e-04	-	mae:
0.0388	18/660					
8s	13ms/step	-	loss:	4.4492e-04	-	mae:
0.0393	23/660					
7s	12ms/step	-	loss:	4.5334e-04	-	mae:
0.0401	29/660					
7s	12ms/step	-	loss:	4.5940e-04	-	mae:
0.0407	35/660					
6s	11ms/step	-	loss:	4.6307e-04	-	mae:
0.0411	41/660					
6s	11ms/step	-	loss:	4.6966e-04	-	mae:
0.0417	47/660					
6s	11ms/step	-	loss:	4.7591e-04	-	mae:
0.0423	53/660					
6s	10ms/step	-	loss:	4.8169e-04	-	mae:
0.0429	60/660					
6s	10ms/step	-	loss:	4.8674e-04	-	mae:
0.0434	66/660					
5s	10ms/step	-	loss:	4.8941e-04	-	mae:
0.0436	72/660					
5s	10ms/step	-	loss:	4.9134e-04	-	mae:
0.0438	79/660					
5s	10ms/step	-	loss:	4.9250e-04	-	mae:
0.0439	85/660					
5s	10ms/step	-	loss:	4.9352e-04	-	mae:
0.0440	91/660					
5s	10ms/step	-	loss:	4.9382e-04	-	mae:
0.0441	98/660					
5s	9ms/step	-	loss:	4.9419e-04	-	mae: 0.0441
105/660						
5s	9ms/step	-	loss:	4.9439e-04	-	mae:
0.044112/660						
5s	9ms/step	-	loss:	4.9438e-04	-	mae:
0.044118/660						
5s	9ms/step	-	loss:	4.9475e-04	-	mae:
0.0442124/660						
4s	9ms/step	-	loss:	4.9515e-04	-	mae:
0.0442131/660						

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4s 0.0442138/660	9ms/step	-	loss:	4.9520e-04	-	mae:
4s 0.0442145/660	9ms/step	-	loss:	4.9515e-04	-	mae:
4s 0.0442152/660	9ms/step	-	loss:	4.9506e-04	-	mae:
4s 0.0442159/660	9ms/step	-	loss:	4.9496e-04	-	mae:
4s 0.0442166/660	9ms/step	-	loss:	4.9472e-04	-	mae:
4s 0.0442173/660	9ms/step	-	loss:	4.9407e-04	-	mae:
4s 0.0442180/660	9ms/step	-	loss:	4.9363e-04	-	mae:
4s 0.0441187/660	9ms/step	-	loss:	4.9303e-04	-	mae:
4s 0.0441194/660	9ms/step	-	loss:	4.9244e-04	-	mae:
4s 0.0440201/660	9ms/step	-	loss:	4.9187e-04	-	mae:
3s 0.0439214/660	9ms/step	-	loss:	4.9139e-04	-	mae:
3s 0.0439221/660	9ms/step	-	loss:	4.9085e-04	-	mae:
3s 0.0438227/660	9ms/step	-	loss:	4.9041e-04	-	mae:
3s 0.0438234/660	9ms/step	-	loss:	4.9010e-04	-	mae:
3s 0.0438241/660	9ms/step	-	loss:	4.8980e-04	-	mae:
3s 0.0438247/660	9ms/step	-	loss:	4.8952e-04	-	mae:
3s 0.0437253/660	9ms/step	-	loss:	4.8929e-04	-	mae:
3s 0.0437260/660	9ms/step	-	loss:	4.8903e-04	-	mae:
3s 0.0437267/660	9ms/step	-	loss:	4.8873e-04	-	mae:
3s 0.0437274/660	9ms/step	-	loss:	4.8850e-04	-	mae:
3s 0.0437281/660	9ms/step	-	loss:	4.8832e-04	-	mae:
3s 0.0436287/660	9ms/step	-	loss:	4.8812e-04	-	mae:
3s 0.0436294/660	9ms/step	-	loss:	4.8791e-04	-	mae:
3s 0.0436301/660	9ms/step	-	loss:	4.8764e-04	-	mae:
3s 0.0436308/660	9ms/step	-	loss:	4.8735e-04	-	mae:
3s 0.0435315/660	9ms/step	-	loss:	4.8709e-04	-	mae:
2s 0.0435322/660	9ms/step	-	loss:	4.8683e-04	-	mae:
2s 0.0435329/660	9ms/step	-	loss:	4.8657e-04	-	mae:
2s 0.0435336/660	9ms/step	-	loss:	4.8634e-04	-	mae:
2s 0.0435343/660	9ms/step	-	loss:	4.8609e-04	-	mae:
2s 0.0434347/660	8ms/step	-	loss:	4.8585e-04	-	mae:
2s 0.0434351/660	9ms/step	-	loss:	4.8571e-04	-	mae:

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0.0434356/660	2s	9ms/step	-	loss:	4.8556e-04	-	mae:
0.0434361/660	2s	9ms/step	-	loss:	4.8536e-04	-	mae:
0.0434365/660	2s	9ms/step	-	loss:	4.8515e-04	-	mae:
0.0434370/660	2s	9ms/step	-	loss:	4.8499e-04	-	mae:
0.0433375/660	2s	9ms/step	-	loss:	4.8479e-04	-	mae:
0.0433380/660	2s	9ms/step	-	loss:	4.8458e-04	-	mae:
0.0433385/660	2s	9ms/step	-	loss:	4.8436e-04	-	mae:
0.0433389/660	2s	9ms/step	-	loss:	4.8416e-04	-	mae:
0.0433394/660	2s	9ms/step	-	loss:	4.8399e-04	-	mae:
0.0433398/660	2s	9ms/step	-	loss:	4.8376e-04	-	mae:
0.0432403/660	2s	9ms/step	-	loss:	4.8356e-04	-	mae:
0.0432408/660	2s	9ms/step	-	loss:	4.8330e-04	-	mae:
0.0432413/660	2s	9ms/step	-	loss:	4.8304e-04	-	mae:
0.0432417/660	2s	9ms/step	-	loss:	4.8277e-04	-	mae:
0.0431422/660	2s	9ms/step	-	loss:	4.8255e-04	-	mae:
0.0431427/660	2s	9ms/step	-	loss:	4.8229e-04	-	mae:
0.0431432/660	2s	9ms/step	-	loss:	4.8203e-04	-	mae:
0.0431437/660	2s	9ms/step	-	loss:	4.8178e-04	-	mae:
0.0430442/660	2s	9ms/step	-	loss:	4.8128e-04	-	mae:
0.0430447/660	1s	9ms/step	-	loss:	4.8104e-04	-	mae:
0.0430451/660	1s	9ms/step	-	loss:	4.8085e-04	-	mae:
0.0430456/660	1s	9ms/step	-	loss:	4.8062e-04	-	mae:
0.0430461/660	1s	9ms/step	-	loss:	4.8040e-04	-	mae:
0.0429466/660	1s	9ms/step	-	loss:	4.8018e-04	-	mae:
0.0429471/660	1s	9ms/step	-	loss:	4.7996e-04	-	mae:
0.0429476/660	1s	9ms/step	-	loss:	4.7973e-04	-	mae:
0.0429480/660	1s	10ms/step	-	loss:	4.7954e-04	-	mae:
0.0429485/660	1s	10ms/step	-	loss:	4.7930e-04	-	mae:
0.0428490/660	1s	10ms/step	-	loss:	4.7905e-04	-	mae:
0.0428495/660	1s	10ms/step	-	loss:	4.7880e-04	-	mae:
0.0428500/660	1s	10ms/step	-	loss:	4.7855e-04	-	mae:
0.0428505/660	1s	10ms/step	-	loss:	4.7831e-04	-	mae:
0.0427509/660							

Battery SoC Estimation Project Report

0.0427513/660	1s	10ms/step	-	loss:	4.7813e-04	-	mae:
0.0427517/660	1s	10ms/step	-	loss:	4.7795e-04	-	mae:
0.0427521/660	1s	10ms/step	-	loss:	4.7776e-04	-	mae:
0.0427525/660	1s	10ms/step	-	loss:	4.7757e-04	-	mae:
0.0427530/660	1s	10ms/step	-	loss:	4.7738e-04	-	mae:
0.0426536/660	1s	10ms/step	-	loss:	4.7713e-04	-	mae:
0.0426541/660	1s	10ms/step	-	loss:	4.7684e-04	-	mae:
0.0426547/660	1s	10ms/step	-	loss:	4.7659e-04	-	mae:
0.0426554/660	1s	10ms/step	-	loss:	4.7631e-04	-	mae:
0.0425560/660	0s	10ms/step	-	loss:	4.7599e-04	-	mae:
0.0425567/660	0s	10ms/step	-	loss:	4.7572e-04	-	mae:
0.0425574/660	0s	10ms/step	-	loss:	4.7541e-04	-	mae:
0.0425581/660	0s	10ms/step	-	loss:	4.7511e-04	-	mae:
0.0424588/660	0s	10ms/step	-	loss:	4.7480e-04	-	mae:
0.0424594/660	0s	10ms/step	-	loss:	4.7449e-04	-	mae:
0.0424600/660	0s	10ms/step	-	loss:	4.7422e-04	-	mae:
0.0423606/660	0s	10ms/step	-	loss:	4.7396e-04	-	mae:
0.0423613/660	0s	10ms/step	-	loss:	4.7371e-04	-	mae:
0.0423619/660	0s	10ms/step	-	loss:	4.7342e-04	-	mae:
0.0423626/660	0s	10ms/step	-	loss:	4.7318e-04	-	mae:
0.0422632/660	0s	10ms/step	-	loss:	4.7289e-04	-	mae:
0.0422638/660	0s	10ms/step	-	loss:	4.7265e-04	-	mae:
0.0422645/660	0s	10ms/step	-	loss:	4.7243e-04	-	mae:
0.0422652/660	0s	10ms/step	-	loss:	4.7216e-04	-	mae:
0.0422658/660	0s	10ms/step	-	loss:	4.7188e-04	-	mae:
0.0421660/660	0s	10ms/step	-	loss:	4.7165e-04	-	mae:

9s 10ms/step - loss: 4.7153e-04 - mae: 0.0421 - val_loss: 4.7179e-04 - val_mae: 0.0431

Epoch 13/200

0.0431	1/660	38:42	4s/step	-	loss:	4.7778e-04	-	mae:
	6/660							
7s	12ms/step	-	loss:	4.3296e-04	-	mae:	0.0388	
	11/660							
0.0398	15/660	12ms/step	-	loss:	4.4272e-04	-	mae:	
	7s	12ms/step	-	loss:	4.4579e-04	-	mae:	
0.0401	19/660	12ms/step	-	loss:	4.4715e-04	-	mae:	
0.0402	24/660	12ms/step	-	loss:	4.5036e-04	-	mae:	
0.0405	30/660	12ms/step	-	loss:				

Battery SoC Estimation Project Report

0.0405	7s	11ms/step	-	loss:	4.5098e-04	-	mae:
	6s	36/660	-	loss:	4.5250e-04	-	mae:
0.0407	6s	11ms/step	-	loss:	4.5808e-04	-	mae:
0.0412	6s	42/660	-	loss:	4.6324e-04	-	mae:
	6s	10ms/step	-	loss:	4.6790e-04	-	mae:
0.0417	6s	49/660	-	loss:	4.7130e-04	-	mae:
0.0422	5s	10ms/step	-	loss:	4.7352e-04	-	mae:
0.0425	5s	70/660	-	loss:	4.7486e-04	-	mae: 0.0429
0.0427	5s	10ms/step	-	loss:	4.7608e-04	-	mae:
	5s	77/660	-	loss:	4.7660e-04	-	mae:
0.0430	5s	84/660	-	loss:	4.7771e-04	-	mae:
	5s	90/660	-	loss:	4.7889e-04	-	mae:
0.0430	5s	9ms/step	-	loss:	4.7962e-04	-	mae:
0.0430	5s	97/660	-	loss:	4.8036e-04	-	mae:
0.0432104/660	4s	9ms/step	-	loss:	4.8122e-04	-	mae:
0.0433111/660	4s	9ms/step	-	loss:	4.8209e-04	-	mae:
0.0434117/660	4s	9ms/step	-	loss:	4.8244e-04	-	mae:
0.0434124/660	4s	9ms/step	-	loss:	4.8271e-04	-	mae:
0.0435131/660	4s	9ms/step	-	loss:	4.8288e-04	-	mae:
0.0436137/660	4s	9ms/step	-	loss:	4.8281e-04	-	mae:
0.0436143/660	4s	9ms/step	-	loss:	4.8270e-04	-	mae:
0.0436150/660	4s	9ms/step	-	loss:	4.8250e-04	-	mae:
0.0437157/660	4s	9ms/step	-	loss:	4.8212e-04	-	mae:
0.0437163/660	4s	9ms/step	-	loss:	4.8181e-04	-	mae:
0.0437170/660	4s	9ms/step	-	loss:	4.8155e-04	-	mae:
0.0437177/660	4s	9ms/step	-	loss:	4.8133e-04	-	mae:
0.0437184/660	4s	9ms/step	-	loss:	4.8107e-04	-	mae:
0.0436191/660	4s	9ms/step	-	loss:	4.8090e-04	-	mae:
0.0436198/660	3s	9ms/step	-	loss:	4.8082e-04	-	mae:
0.0436204/660	3s	9ms/step	-	loss:	4.8072e-04	-	mae:
0.0435211/660	3s	9ms/step	-	loss:	4.8064e-04	-	mae:
0.0435218/660	3s	9ms/step	-	loss:	4.8054e-04	-	mae:
0.0435225/660	3s	9ms/step	-	loss:	4.8044e-04	-	mae:
0.0435232/660	3s	9ms/step	-	loss:	4.8034e-04	-	mae:
0.0435238/660	3s	9ms/step	-	loss:	4.8024e-04	-	mae:
0.0435244/660	3s	9ms/step	-	loss:	4.8014e-04	-	mae:
0.0435251/660	3s	9ms/step	-	loss:	4.8004e-04	-	mae:

Battery SoC Estimation Project Report						
0.0435257/660	3s	9ms/step	-	loss:	4.8038e-04	- mae:
0.0434263/660	3s	9ms/step	-	loss:	4.8019e-04	- mae:
0.0434268/660	3s	9ms/step	-	loss:	4.8005e-04	- mae:
0.0434275/660	3s	9ms/step	-	loss:	4.7994e-04	- mae:
0.0434282/660	3s	9ms/step	-	loss:	4.7981e-04	- mae:
0.0434288/660	3s	9ms/step	-	loss:	4.7965e-04	- mae:
0.0434295/660	3s	9ms/step	-	loss:	4.7948e-04	- mae:
0.0434302/660	3s	9ms/step	-	loss:	4.7927e-04	- mae:
0.0433309/660	2s	9ms/step	-	loss:	4.7883e-04	- mae:
0.0433316/660	2s	9ms/step	-	loss:	4.7860e-04	- mae:
0.0433323/660	2s	8ms/step	-	loss:	4.7836e-04	- mae:
0.0433330/660	2s	8ms/step	-	loss:	4.7814e-04	- mae:
0.0433336/660	2s	8ms/step	-	loss:	4.7793e-04	- mae:
0.0432343/660	2s	8ms/step	-	loss:	4.7769e-04	- mae:
0.0432349/660	2s	8ms/step	-	loss:	4.7746e-04	- mae:
0.0432356/660	2s	8ms/step	-	loss:	4.7719e-04	- mae:
0.0432363/660	2s	8ms/step	-	loss:	4.7690e-04	- mae:
0.0431370/660	2s	8ms/step	-	loss:	4.7660e-04	- mae:
0.0431377/660	2s	8ms/step	-	loss:	4.7630e-04	- mae:
0.0431384/660	2s	8ms/step	-	loss:	4.7600e-04	- mae:
0.0431390/660	2s	8ms/step	-	loss:	4.7575e-04	- mae:
0.0430396/660	2s	8ms/step	-	loss:	4.7549e-04	- mae:
0.0430403/660	2s	8ms/step	-	loss:	4.7516e-04	- mae:
0.0430410/660	2s	8ms/step	-	loss:	4.7482e-04	- mae:
0.0429417/660	2s	8ms/step	-	loss:	4.7446e-04	- mae:
0.0429424/660	1s	8ms/step	-	loss:	4.7410e-04	- mae:
0.0429431/660	1s	8ms/step	-	loss:	4.7375e-04	- mae:
0.0428438/660	1s	8ms/step	-	loss:	4.7340e-04	- mae:
0.0428445/660	1s	8ms/step	-	loss:	4.7306e-04	- mae:
0.0428452/660	1s	8ms/step	-	loss:	4.7272e-04	- mae:
0.0427458/660	1s	8ms/step	-	loss:	4.7244e-04	- mae:
0.0427465/660	1s	8ms/step	-	loss:	4.7213e-04	- mae:
0.0427471/660						

Battery SoC Estimation Project Report

0s	8ms/step	-	loss:	4.7187e-04	-	mae:	
0.0427478/660	1s	8ms/step	-	loss:	4.7156e-04	-	mae:
0.0426485/660	1s	8ms/step	-	loss:	4.7124e-04	-	mae:
0.0426492/660	1s	8ms/step	-	loss:	4.7092e-04	-	mae:
0.0426499/660	1s	8ms/step	-	loss:	4.7059e-04	-	mae:
0.0425506/660	1s	8ms/step	-	loss:	4.7030e-04	-	mae:
0.0425513/660	1s	8ms/step	-	loss:	4.7000e-04	-	mae:
0.0425518/660	1s	8ms/step	-	loss:	4.6978e-04	-	mae:
0.0425525/660	1s	8ms/step	-	loss:	4.6947e-04	-	mae:
0.0424531/660	1s	8ms/step	-	loss:	4.6920e-04	-	mae:
0.0424538/660	1s	8ms/step	-	loss:	4.6888e-04	-	mae:
0.0424545/660	0s	8ms/step	-	loss:	4.6857e-04	-	mae:
0.0423552/660	0s	8ms/step	-	loss:	4.6827e-04	-	mae:
0.0423559/660	0s	8ms/step	-	loss:	4.6798e-04	-	mae:
0.0423565/660	0s	8ms/step	-	loss:	4.6773e-04	-	mae:
0.0423571/660	0s	8ms/step	-	loss:	4.6748e-04	-	mae:
0.0422577/660	0s	8ms/step	-	loss:	4.6724e-04	-	mae:
0.0422583/660	0s	8ms/step	-	loss:	4.6700e-04	-	mae:
0.0422589/660	0s	8ms/step	-	loss:	4.6675e-04	-	mae:
0.0422593/660	0s	8ms/step	-	loss:	4.6659e-04	-	mae:
0.0422597/660	0s	8ms/step	-	loss:	4.6642e-04	-	mae:
0.0421601/660	0s	8ms/step	-	loss:	4.6626e-04	-	mae:
0.0421605/660	0s	9ms/step	-	loss:	4.6611e-04	-	mae:
0.0421609/660	0s	9ms/step	-	loss:	4.6596e-04	-	mae:
0.0421613/660	0s	9ms/step	-	loss:	4.6581e-04	-	mae:
0.0421617/660	0s	9ms/step	-	loss:	4.6565e-04	-	mae:
0.0421621/660	0s	9ms/step	-	loss:	4.6550e-04	-	mae:
0.0421625/660	0s	9ms/step	-	loss:	4.6534e-04	-	mae:
0.0420629/660	0s	9ms/step	-	loss:	4.6519e-04	-	mae:
0.0420633/660	0s	9ms/step	-	loss:	4.6504e-04	-	mae:
0.0420637/660	0s	9ms/step	-	loss:	4.6490e-04	-	mae:
0.0420641/660	0s	9ms/step	-	loss:	4.6476e-04	-	mae:
0.0420646/660	0s	9ms/step	-	loss:	4.6458e-04	-	mae:
0.0420650/660							

Battery SoC Estimation Project Report

0s	9ms/step	-	loss:	4.6443e-04	-	mae:
0.0420654/660						
0s	9ms/step	-	loss:	4.6428e-04	-	mae:
0.0419658/660						
0s	9ms/step	-	loss:	4.6414e-04	-	mae:
0.0419660/660						
10s 10ms/step - loss: 4.6403e-04 - mae: 0.0419 - val_loss: 3.0531e-04 - val_mae: 0.0255						
Epoch 14/200						
1/660	39:38	4s/step	-	loss:	3.8661e-04	-
0.0340	6/660					
7s	12ms/step	-	loss:	3.4112e-04	-	mae: 0.0295
11/660						
7s	12ms/step	-	loss:	3.6031e-04	-	mae:
0.0316	16/660					
7s	12ms/step	-	loss:	3.7737e-04	-	mae:
0.0333	21/660					
7s	12ms/step	-	loss:	3.9118e-04	-	mae:
0.0347	26/660					
7s	12ms/step	-	loss:	4.0160e-04	-	mae:
0.0358	32/660					
7s	11ms/step	-	loss:	4.0923e-04	-	mae:
0.0365	38/660					
6s	11ms/step	-	loss:	4.1693e-04	-	mae:
0.0373	44/660					
6s	11ms/step	-	loss:	4.2578e-04	-	mae:
0.0382	50/660					
6s	11ms/step	-	loss:	4.3257e-04	-	mae:
0.0389	57/660					
6s	10ms/step	-	loss:	4.3929e-04	-	mae:
0.0395	63/660					
6s	10ms/step	-	loss:	4.4349e-04	-	mae:
0.0400	69/660					
5s	10ms/step	-	loss:	4.4648e-04	-	mae:
0.0403	75/660					
5s	10ms/step	-	loss:	4.4850e-04	-	mae:
0.0405	81/660					
5s	10ms/step	-	loss:	4.5024e-04	-	mae:
0.0407	87/660					
5s	10ms/step	-	loss:	4.5174e-04	-	mae:
0.0408	94/660					
5s	10ms/step	-	loss:	4.5293e-04	-	mae:
0.0409101/660						
5s	9ms/step	-	loss:	4.5375e-04	-	mae: 0.0410
108/660						
5s	9ms/step	-	loss:	4.5435e-04	-	mae:
0.0411115/660						
5s	9ms/step	-	loss:	4.5486e-04	-	mae:
0.0412121/660						
4s	9ms/step	-	loss:	4.5550e-04	-	mae:
0.0412128/660						
4s	9ms/step	-	loss:	4.5603e-04	-	mae:
0.0413135/660						
4s	9ms/step	-	loss:	4.5625e-04	-	mae:
0.0413141/660						
4s	9ms/step	-	loss:	4.5625e-04	-	mae:
0.0413148/660						
4s	9ms/step	-	loss:	4.5623e-04	-	mae:
0.0413153/660						
4s	9ms/step	-	loss:	4.5619e-04	-	mae:
0.0413159/660						
4s	9ms/step	-	loss:	4.5614e-04	-	mae:
0.0413166/660						
4s	9ms/step	-	loss:	4.5608e-04	-	mae:
0.0413173/660						
4s	9ms/step	-	loss:	4.5623e-04	-	mae:
0.0414179/660						

Battery SoC Estimation Project Report

4s 0.0414185/660	9ms/step	-	loss:	4.5623e-04	-	mae:
4s 0.0414191/660	9ms/step	-	loss:	4.5614e-04	-	mae:
4s 0.0414198/660	9ms/step	-	loss:	4.5610e-04	-	mae:
4s 0.0414205/660	9ms/step	-	loss:	4.5604e-04	-	mae:
4s 0.0413212/660	9ms/step	-	loss:	4.5598e-04	-	mae:
3s 0.0413219/660	9ms/step	-	loss:	4.5590e-04	-	mae:
3s 0.0413226/660	9ms/step	-	loss:	4.5588e-04	-	mae:
3s 0.0414233/660	9ms/step	-	loss:	4.5593e-04	-	mae:
3s 0.0414240/660	9ms/step	-	loss:	4.5596e-04	-	mae:
3s 0.0414247/660	9ms/step	-	loss:	4.5600e-04	-	mae:
3s 0.0414254/660	9ms/step	-	loss:	4.5601e-04	-	mae:
3s 0.0414260/660	9ms/step	-	loss:	4.5601e-04	-	mae:
3s 0.0414267/660	9ms/step	-	loss:	4.5600e-04	-	mae:
3s 0.0414274/660	9ms/step	-	loss:	4.5607e-04	-	mae:
3s 0.0414279/660	9ms/step	-	loss:	4.5624e-04	-	mae:
3s 0.0414285/660	9ms/step	-	loss:	4.5637e-04	-	mae:
3s 0.0414292/660	9ms/step	-	loss:	4.5650e-04	-	mae:
3s 0.0415298/660	9ms/step	-	loss:	4.5667e-04	-	mae:
3s 0.0415304/660	9ms/step	-	loss:	4.5678e-04	-	mae:
3s 0.0415310/660	9ms/step	-	loss:	4.5691e-04	-	mae:
2s 0.0415317/660	9ms/step	-	loss:	4.5703e-04	-	mae:
2s 0.0415323/660	9ms/step	-	loss:	4.5716e-04	-	mae:
2s 0.0415330/660	9ms/step	-	loss:	4.5727e-04	-	mae:
2s 0.0415337/660	9ms/step	-	loss:	4.5738e-04	-	mae:
2s 0.0415343/660	9ms/step	-	loss:	4.5747e-04	-	mae:
2s 0.0415350/660	9ms/step	-	loss:	4.5753e-04	-	mae:
2s 0.0415357/660	9ms/step	-	loss:	4.5760e-04	-	mae:
2s 0.0416364/660	9ms/step	-	loss:	4.5767e-04	-	mae:
2s 0.0416371/660	9ms/step	-	loss:	4.5774e-04	-	mae:
2s 0.0416378/660	9ms/step	-	loss:	4.5783e-04	-	mae:
2s 0.0416385/660	9ms/step	-	loss:	4.5790e-04	-	mae:
2s 0.0416392/660	9ms/step	-	loss:	4.5797e-04	-	mae:
2s 0.0416399/660	9ms/step	-	loss:	4.5803e-04	-	mae:

Battery SoC Estimation Project Report

0.0416404/660	2s	9ms/step	-	loss:	4.5806e-04	-	mae:
0.0416411/660	2s	9ms/step	-	loss:	4.5805e-04	-	mae:
0.0416417/660	2s	9ms/step	-	loss:	4.5802e-04	-	mae:
0.0416423/660	2s	9ms/step	-	loss:	4.5798e-04	-	mae:
0.0416429/660	2s	9ms/step	-	loss:	4.5794e-04	-	mae:
0.0416436/660	1s	9ms/step	-	loss:	4.5791e-04	-	mae:
0.0416443/660	1s	9ms/step	-	loss:	4.5786e-04	-	mae:
0.0416450/660	1s	9ms/step	-	loss:	4.5782e-04	-	mae:
0.0416456/660	1s	9ms/step	-	loss:	4.5779e-04	-	mae:
0.0416463/660	1s	9ms/step	-	loss:	4.5778e-04	-	mae:
0.0416469/660	1s	9ms/step	-	loss:	4.5776e-04	-	mae:
0.0416475/660	1s	9ms/step	-	loss:	4.5776e-04	-	mae:
0.0415482/660	1s	9ms/step	-	loss:	4.5772e-04	-	mae:
0.0415489/660	1s	9ms/step	-	loss:	4.5766e-04	-	mae:
0.0415496/660	1s	9ms/step	-	loss:	4.5760e-04	-	mae:
0.0415503/660	1s	9ms/step	-	loss:	4.5754e-04	-	mae:
0.0415510/660	1s	9ms/step	-	loss:	4.5749e-04	-	mae:
0.0415515/660	1s	9ms/step	-	loss:	4.5744e-04	-	mae:
0.0415521/660	1s	9ms/step	-	loss:	4.5737e-04	-	mae:
0.0415526/660	1s	9ms/step	-	loss:	4.5730e-04	-	mae:
0.0415533/660	1s	9ms/step	-	loss:	4.5718e-04	-	mae:
0.0415539/660	1s	9ms/step	-	loss:	4.5707e-04	-	mae:
0.0415545/660	0s	9ms/step	-	loss:	4.5696e-04	-	mae:
0.0415552/660	0s	9ms/step	-	loss:	4.5685e-04	-	mae:
0.0415558/660	0s	9ms/step	-	loss:	4.5677e-04	-	mae:
0.0414564/660	0s	9ms/step	-	loss:	4.5668e-04	-	mae:
0.0414571/660	0s	9ms/step	-	loss:	4.5658e-04	-	mae:
0.0414578/660	0s	9ms/step	-	loss:	4.5648e-04	-	mae:
0.0414585/660	0s	9ms/step	-	loss:	4.5636e-04	-	mae:
0.0414592/660	0s	9ms/step	-	loss:	4.5624e-04	-	mae:
0.0414599/660	0s	9ms/step	-	loss:	4.5612e-04	-	mae:
0.0414606/660	0s	9ms/step	-	loss:	4.5602e-04	-	mae:
0.0414613/660							

Battery SoC Estimation Project Report

0s 0.0414620/660	9ms/step	-	loss:	4.5593e-04	-	mae:	
0s 0.0414627/660	9ms/step	-	loss:	4.5583e-04	-	mae:	
0s 0.0413634/660	8ms/step	-	loss:	4.5574e-04	-	mae:	
0s 0.0413641/660	8ms/step	-	loss:	4.5564e-04	-	mae:	
0s 0.0413648/660	8ms/step	-	loss:	4.5556e-04	-	mae:	
0s 0.0413653/660	8ms/step	-	loss:	4.5546e-04	-	mae:	
0s 0.0413659/660	8ms/step	-	loss:	4.5538e-04	-	mae:	
0s 0.0413660/660	8ms/step	-	loss:	4.5530e-04	-	mae:	
10s 9ms/step - loss: 4.5527e-04 - mae: 0.0413 - val_loss: 3.5560e-04 - val_mae: 0.0318							
Epoch 15/200							
1/660 0.0335	43:31	4s/step	-	loss:	3.7563e-04	-	mae:
6/660 8s	12ms/step	-	loss:	3.3270e-04	-	mae: 0.0292	
11/660 8s	12ms/step	-	loss:	3.5827e-04	-	mae:	
16/660 7s	12ms/step	-	loss:	3.7589e-04	-	mae:	
21/660 7s	12ms/step	-	loss:	3.8849e-04	-	mae:	
26/660 7s	12ms/step	-	loss:	3.9831e-04	-	mae:	
32/660 7s	11ms/step	-	loss:	4.0575e-04	-	mae:	
38/660 6s	11ms/step	-	loss:	4.1312e-04	-	mae:	
44/660 6s	11ms/step	-	loss:	4.2218e-04	-	mae:	
51/660 6s	10ms/step	-	loss:	4.3134e-04	-	mae:	
58/660 6s	10ms/step	-	loss:	4.3939e-04	-	mae:	
65/660 5s	10ms/step	-	loss:	4.4514e-04	-	mae:	
72/660 5s	10ms/step	-	loss:	4.4957e-04	-	mae:	
79/660 5s	10ms/step	-	loss:	4.5236e-04	-	mae:	
86/660 5s	9ms/step	-	loss:	4.5515e-04	-	mae: 0.0414	
93/660 5s	9ms/step	-	loss:	4.5737e-04	-	mae:	
0.0416100/660 5s	9ms/step	-	loss:	4.5949e-04	-	mae:	
0.0418107/660 5s	9ms/step	-	loss:	4.6136e-04	-	mae:	
0.0420114/660 4s	9ms/step	-	loss:	4.6289e-04	-	mae:	
0.0422120/660 4s	9ms/step	-	loss:	4.6438e-04	-	mae:	
0.0423127/660 4s	9ms/step	-	loss:	4.6588e-04	-	mae:	
0.0425134/660 4s	9ms/step	-	loss:	4.6689e-04	-	mae:	
0.0426141/660 4s	9ms/step	-	loss:	4.6763e-04	-	mae:	
0.0427147/660 4s	9ms/step	-	loss:	4.6809e-04	-	mae:	
0.0427153/660							

Battery SoC Estimation Project Report						
0.0427159/660	4s	9ms/step	-	loss:	4.6838e-04	- mae:
0.0428165/660	4s	9ms/step	-	loss:	4.6851e-04	- mae:
0.0428172/660	4s	9ms/step	-	loss:	4.6846e-04	- mae:
0.0428178/660	4s	9ms/step	-	loss:	4.6844e-04	- mae:
0.0428185/660	4s	9ms/step	-	loss:	4.6829e-04	- mae:
0.0427192/660	4s	9ms/step	-	loss:	4.6758e-04	- mae:
0.0427199/660	4s	9ms/step	-	loss:	4.6718e-04	- mae:
0.0427205/660	3s	9ms/step	-	loss:	4.6683e-04	- mae:
0.0426212/660	3s	9ms/step	-	loss:	4.6649e-04	- mae:
0.0426219/660	3s	9ms/step	-	loss:	4.6625e-04	- mae:
0.0426226/660	3s	9ms/step	-	loss:	4.6614e-04	- mae:
0.0426233/660	3s	9ms/step	-	loss:	4.6609e-04	- mae:
0.0426240/660	3s	9ms/step	-	loss:	4.6610e-04	- mae:
0.0426247/660	3s	9ms/step	-	loss:	4.6611e-04	- mae:
0.0426254/660	3s	9ms/step	-	loss:	4.6607e-04	- mae:
0.0426261/660	3s	9ms/step	-	loss:	4.6603e-04	- mae:
0.0426267/660	3s	9ms/step	-	loss:	4.6604e-04	- mae:
0.0426274/660	3s	9ms/step	-	loss:	4.6606e-04	- mae:
0.0426281/660	3s	9ms/step	-	loss:	4.6604e-04	- mae:
0.0426287/660	3s	9ms/step	-	loss:	4.6598e-04	- mae:
0.0426292/660	3s	9ms/step	-	loss:	4.6593e-04	- mae:
0.0426299/660	3s	9ms/step	-	loss:	4.6580e-04	- mae:
0.0426306/660	3s	9ms/step	-	loss:	4.6568e-04	- mae:
0.0426313/660	2s	9ms/step	-	loss:	4.6555e-04	- mae:
0.0426320/660	2s	9ms/step	-	loss:	4.6540e-04	- mae:
0.0426327/660	2s	9ms/step	-	loss:	4.6525e-04	- mae:
0.0425334/660	2s	9ms/step	-	loss:	4.6508e-04	- mae:
0.0425341/660	2s	9ms/step	-	loss:	4.6488e-04	- mae:
0.0425348/660	2s	8ms/step	-	loss:	4.6466e-04	- mae:
0.0425355/660	2s	8ms/step	-	loss:	4.6443e-04	- mae:
0.0425362/660	2s	8ms/step	-	loss:	4.6419e-04	- mae:
0.0424369/660	2s	8ms/step	-	loss:	4.6394e-04	- mae:
0.0424376/660						

Battery SoC Estimation Project Report

2s 0.0424383/660	8ms/step	-	loss:	4.6367e-04	-	mae:
2s 0.0424390/660	8ms/step	-	loss:	4.6341e-04	-	mae:
2s 0.0423397/660	8ms/step	-	loss:	4.6319e-04	-	mae:
2s 0.0423403/660	8ms/step	-	loss:	4.6296e-04	-	mae:
2s 0.0423410/660	8ms/step	-	loss:	4.6276e-04	-	mae:
2s 0.0423417/660	8ms/step	-	loss:	4.6253e-04	-	mae:
2s 0.0422423/660	8ms/step	-	loss:	4.6228e-04	-	mae:
1s 0.0422430/660	8ms/step	-	loss:	4.6209e-04	-	mae:
1s 0.0422437/660	8ms/step	-	loss:	4.6187e-04	-	mae:
1s 0.0422444/660	8ms/step	-	loss:	4.6168e-04	-	mae:
1s 0.0422451/660	8ms/step	-	loss:	4.6149e-04	-	mae:
1s 0.0421458/660	8ms/step	-	loss:	4.6130e-04	-	mae:
1s 0.0421464/660	8ms/step	-	loss:	4.6114e-04	-	mae:
1s 0.0421471/660	8ms/step	-	loss:	4.6101e-04	-	mae:
1s 0.0421478/660	8ms/step	-	loss:	4.6087e-04	-	mae:
1s 0.0421485/660	8ms/step	-	loss:	4.6071e-04	-	mae:
1s 0.0421492/660	8ms/step	-	loss:	4.6053e-04	-	mae:
1s 0.0420499/660	8ms/step	-	loss:	4.6034e-04	-	mae:
1s 0.0420506/660	8ms/step	-	loss:	4.6013e-04	-	mae:
1s 0.0420512/660	8ms/step	-	loss:	4.5996e-04	-	mae:
1s 0.0420519/660	8ms/step	-	loss:	4.5981e-04	-	mae:
1s 0.0420525/660	8ms/step	-	loss:	4.5963e-04	-	mae:
1s 0.0420532/660	8ms/step	-	loss:	4.5946e-04	-	mae:
1s 0.0419539/660	8ms/step	-	loss:	4.5925e-04	-	mae:
1s 0.0419545/660	8ms/step	-	loss:	4.5903e-04	-	mae:
0s 0.0419551/660	8ms/step	-	loss:	4.5883e-04	-	mae:
0s 0.0419558/660	8ms/step	-	loss:	4.5865e-04	-	mae:
0s 0.0418565/660	8ms/step	-	loss:	4.5844e-04	-	mae:
0s 0.0418572/660	8ms/step	-	loss:	4.5822e-04	-	mae:
0s 0.0418579/660	8ms/step	-	loss:	4.5801e-04	-	mae:
0s 0.0418586/660	8ms/step	-	loss:	4.5780e-04	-	mae:
0s 0.0418593/660	8ms/step	-	loss:	4.5758e-04	-	mae:
0s 0.0417600/660	8ms/step	-	loss:	4.5736e-04	-	mae:

Battery SoC Estimation Project Report

0s 0.0417607/660	8ms/step	-	loss:	4.5714e-04	-	mae:
0s 0.0417614/660	8ms/step	-	loss:	4.5693e-04	-	mae:
0s 0.0417621/660	8ms/step	-	loss:	4.5672e-04	-	mae:
0s 0.0417627/660	8ms/step	-	loss:	4.5649e-04	-	mae:
0s 0.0416633/660	8ms/step	-	loss:	4.5631e-04	-	mae:
0s 0.0416640/660	8ms/step	-	loss:	4.5612e-04	-	mae:
0s 0.0416647/660	8ms/step	-	loss:	4.5592e-04	-	mae:
0s 0.0416654/660	8ms/step	-	loss:	4.5571e-04	-	mae:
0s 0.0416660/660	8ms/step	-	loss:	4.5549e-04	-	mae:
10s 9ms/step - loss: 4.5528e-04 - mae: 0.0415 - val_loss: 3.3067e-04 - val_mae: 0.0284						
Epoch 16/200						
1/660 0.0345	6/660	47:25	4s/step	-	loss:	3.8749e-04
7s 0.0328	12ms/step 10/660	-	loss:	3.5511e-04	-	mae: 0.0315
8s 0.0340	12ms/step 15/660	-	loss:	3.6673e-04	-	mae:
7s 0.0349	12ms/step 20/660	-	loss:	3.7869e-04	-	mae:
7s 0.0360	12ms/step 25/660	-	loss:	3.8849e-04	-	mae:
7s 0.0366	12ms/step 31/660	-	loss:	3.9924e-04	-	mae:
6s 0.0371	11ms/step 37/660	-	loss:	4.0550e-04	-	mae:
6s 0.0378	11ms/step 43/660	-	loss:	4.1059e-04	-	mae:
6s 0.0383	11ms/step 48/660	-	loss:	4.1804e-04	-	mae:
6s 0.0389	10ms/step 55/660	-	loss:	4.2282e-04	-	mae:
6s 0.0394	10ms/step 61/660	-	loss:	4.2958e-04	-	mae:
5s 0.0397	10ms/step 68/660	-	loss:	4.3427e-04	-	mae:
5s 0.0399	10ms/step 75/660	-	loss:	4.3760e-04	-	mae:
5s 0.0402	9ms/step 82/660	-	loss:	4.3969e-04	-	mae:
5s 0.0403103/660	9ms/step 89/660	-	loss:	4.4121e-04	-	mae: 0.0401
5s 0.0403110/660	9ms/step 96/660	-	loss:	4.4236e-04	-	mae:
4s 0.0404116/660	9ms/step	-	loss:	4.4336e-04	-	mae:
4s 0.0405123/660	9ms/step	-	loss:	4.4406e-04	-	mae:
4s 0.0405130/660	9ms/step	-	loss:	4.4461e-04	-	mae:
4s 0.0406136/660	9ms/step	-	loss:	4.4522e-04	-	mae:
4s 0.0406143/660	9ms/step	-	loss:	4.4613e-04	-	mae:

Battery SoC Estimation Project Report

4s	9ms/step	-	loss:	4.4713e-04	-	mae:
0.0407150/660						
4s	9ms/step	-	loss:	4.4719e-04	-	mae:
0.0407157/660						
4s	9ms/step	-	loss:	4.4718e-04	-	mae:
0.0407164/660						
4s	9ms/step	-	loss:	4.4697e-04	-	mae:
0.0406170/660						
4s	9ms/step	-	loss:	4.4684e-04	-	mae:
0.0406175/660						
4s	9ms/step	-	loss:	4.4671e-04	-	mae:
0.0406182/660						
4s	9ms/step	-	loss:	4.4637e-04	-	mae:
0.0406189/660						
4s	9ms/step	-	loss:	4.4604e-04	-	mae:
0.0406196/660						
4s	9ms/step	-	loss:	4.4580e-04	-	mae:
0.0405203/660						
3s	9ms/step	-	loss:	4.4556e-04	-	mae:
0.0405210/660						
3s	9ms/step	-	loss:	4.4537e-04	-	mae:
0.0405217/660						
3s	9ms/step	-	loss:	4.4526e-04	-	mae:
0.0405224/660						
3s	9ms/step	-	loss:	4.4526e-04	-	mae:
0.0405231/660						
3s	9ms/step	-	loss:	4.4525e-04	-	mae:
0.0405238/660						
3s	9ms/step	-	loss:	4.4523e-04	-	mae:
0.0405245/660						
3s	9ms/step	-	loss:	4.4519e-04	-	mae:
0.0405252/660						
3s	9ms/step	-	loss:	4.4509e-04	-	mae:
0.0405259/660						
3s	9ms/step	-	loss:	4.4495e-04	-	mae:
0.0405266/660						
3s	9ms/step	-	loss:	4.4487e-04	-	mae:
0.0405273/660						
3s	9ms/step	-	loss:	4.4482e-04	-	mae:
0.0405280/660						
3s	8ms/step	-	loss:	4.4480e-04	-	mae:
0.0405287/660						
3s	8ms/step	-	loss:	4.4472e-04	-	mae:
0.0405294/660						
3s	8ms/step	-	loss:	4.4464e-04	-	mae:
0.0405301/660						
3s	8ms/step	-	loss:	4.4453e-04	-	mae:
0.0405307/660						
2s	8ms/step	-	loss:	4.4444e-04	-	mae:
0.0405314/660						
2s	8ms/step	-	loss:	4.4436e-04	-	mae:
0.0405321/660						
2s	8ms/step	-	loss:	4.4430e-04	-	mae:
0.0405328/660						
2s	8ms/step	-	loss:	4.4425e-04	-	mae:
0.0405335/660						
2s	8ms/step	-	loss:	4.4417e-04	-	mae:
0.0405342/660						
2s	8ms/step	-	loss:	4.4407e-04	-	mae:
0.0404349/660						
2s	8ms/step	-	loss:	4.4395e-04	-	mae:
0.0404356/660						
2s	8ms/step	-	loss:	4.4382e-04	-	mae:
0.0404362/660						
2s	8ms/step	-	loss:	4.4369e-04	-	mae:
0.0404369/660						

Battery SoC Estimation Project Report

2s 0.0404376/660	8ms/step	-	loss:	4.4351e-04	-	mae:
2s 0.0404383/660	8ms/step	-	loss:	4.4332e-04	-	mae:
2s 0.0404390/660	8ms/step	-	loss:	4.4311e-04	-	mae:
2s 0.0403397/660	8ms/step	-	loss:	4.4290e-04	-	mae:
2s 0.0403404/660	8ms/step	-	loss:	4.4266e-04	-	mae:
2s 0.0403411/660	8ms/step	-	loss:	4.4240e-04	-	mae:
2s 0.0403418/660	8ms/step	-	loss:	4.4212e-04	-	mae:
2s 0.0402425/660	8ms/step	-	loss:	4.4182e-04	-	mae:
1s 0.0402431/660	8ms/step	-	loss:	4.4153e-04	-	mae:
1s 0.0402438/660	8ms/step	-	loss:	4.4129e-04	-	mae:
1s 0.0402444/660	8ms/step	-	loss:	4.4101e-04	-	mae:
1s 0.0402451/660	8ms/step	-	loss:	4.4078e-04	-	mae:
1s 0.0401458/660	8ms/step	-	loss:	4.4052e-04	-	mae:
1s 0.0401464/660	8ms/step	-	loss:	4.4026e-04	-	mae:
1s 0.0401471/660	8ms/step	-	loss:	4.4005e-04	-	mae:
1s 0.0401478/660	8ms/step	-	loss:	4.3981e-04	-	mae:
1s 0.0400484/660	8ms/step	-	loss:	4.3955e-04	-	mae:
1s 0.0400490/660	8ms/step	-	loss:	4.3931e-04	-	mae:
1s 0.0400496/660	8ms/step	-	loss:	4.3905e-04	-	mae:
1s 0.0400503/660	8ms/step	-	loss:	4.3880e-04	-	mae:
1s 0.0400510/660	8ms/step	-	loss:	4.3852e-04	-	mae:
1s 0.0399517/660	8ms/step	-	loss:	4.3825e-04	-	mae:
1s 0.0399523/660	8ms/step	-	loss:	4.3798e-04	-	mae:
1s 0.0399530/660	8ms/step	-	loss:	4.3774e-04	-	mae:
1s 0.0399537/660	8ms/step	-	loss:	4.3746e-04	-	mae:
0s 0.0398543/660	8ms/step	-	loss:	4.3717e-04	-	mae:
0s 0.0398550/660	8ms/step	-	loss:	4.3693e-04	-	mae:
0s 0.0398555/660	8ms/step	-	loss:	4.3666e-04	-	mae:
0s 0.0398562/660	8ms/step	-	loss:	4.3648e-04	-	mae:
0s 0.0397568/660	8ms/step	-	loss:	4.3623e-04	-	mae:
0s 0.0397575/660	8ms/step	-	loss:	4.3602e-04	-	mae:
0s 0.0397582/660	8ms/step	-	loss:	4.3577e-04	-	mae:
0s 0.0397589/660	8ms/step	-	loss:	4.3553e-04	-	mae:

Battery SoC Estimation Project Report

0s 0.0397596/660	8ms/step	-	loss:	4.3528e-04	-	mae:	
0s 0.0396603/660	8ms/step	-	loss:	4.3503e-04	-	mae:	
0s 0.0396609/660	8ms/step	-	loss:	4.3479e-04	-	mae:	
0s 0.0396615/660	8ms/step	-	loss:	4.3460e-04	-	mae:	
0s 0.0396622/660	8ms/step	-	loss:	4.3440e-04	-	mae:	
0s 0.0396629/660	8ms/step	-	loss:	4.3416e-04	-	mae:	
0s 0.0395636/660	8ms/step	-	loss:	4.3394e-04	-	mae:	
0s 0.0395643/660	8ms/step	-	loss:	4.3372e-04	-	mae:	
0s 0.0395650/660	8ms/step	-	loss:	4.3351e-04	-	mae:	
0s 0.0395657/660	8ms/step	-	loss:	4.3329e-04	-	mae:	
0s 0.0395660/660	8ms/step	-	loss:	4.3307e-04	-	mae:	
10s 9ms/step - loss: 4.3294e-04 - mae: 0.0394 - val_loss: 3.2100e-04 - val_mae: 0.0275							
Epoch 17/200							
1/660 0.0378	47:26 5/660	4s/step	-	loss:	4.1275e-04	-	mae:
9s 0.0337	14ms/step 9/660	-	loss:	3.7976e-04	-	mae: 0.0345	
9s 0.0342	15ms/step 13/660	-	loss:	3.7182e-04	-	mae:	
9s 0.0344	14ms/step 17/660	-	loss:	3.7785e-04	-	mae:	
9s 0.0347	15ms/step 21/660	-	loss:	3.7997e-04	-	mae:	
9s 0.0350	15ms/step 25/660	-	loss:	3.8289e-04	-	mae:	
8s 0.0352	14ms/step 29/660	-	loss:	3.8692e-04	-	mae:	
8s 0.0355	14ms/step 34/660	-	loss:	3.8921e-04	-	mae:	
8s 0.0361	14ms/step 40/660	-	loss:	3.9208e-04	-	mae:	
7s 0.0365	13ms/step 45/660	-	loss:	3.9788e-04	-	mae:	
7s 0.0370	13ms/step 51/660	-	loss:	4.0255e-04	-	mae:	
7s 0.0375	12ms/step 57/660	-	loss:	4.0810e-04	-	mae:	
6s 0.0380	12ms/step 64/660	-	loss:	4.1326e-04	-	mae:	
6s 0.0384	11ms/step 71/660	-	loss:	4.1834e-04	-	mae:	
6s 0.0386	11ms/step 76/660	-	loss:	4.2231e-04	-	mae:	
6s 0.0389	11ms/step 81/660	-	loss:	4.2447e-04	-	mae:	
6s 0.0391	11ms/step 87/660	-	loss:	4.2654e-04	-	mae:	
6s 0.0392101/660	11ms/step 94/660	-	loss:	4.2859e-04	-	mae:	
5s 0.0394108/660	10ms/step 10ms/step	-	loss:	4.3036e-04	-	mae:	
5s 0.0395115/660	10ms/step	-	loss:	4.3177e-04	-	mae:	
				4.3284e-04	-	mae:	

Battery SoC Estimation Project Report

5s 0.0396122/660	10ms/step	-	loss:	4.3376e-04	-	mae:
5s 0.0397129/660	10ms/step	-	loss:	4.3491e-04	-	mae:
5s 0.0398135/660	10ms/step	-	loss:	4.3575e-04	-	mae:
5s 0.0399142/660	10ms/step	-	loss:	4.3633e-04	-	mae:
5s 0.0399149/660	10ms/step	-	loss:	4.3698e-04	-	mae:
4s 0.0400156/660	10ms/step	-	loss:	4.3766e-04	-	mae:
4s 0.0401163/660	10ms/step	-	loss:	4.3842e-04	-	mae:
4s 0.0402168/660	10ms/step	-	loss:	4.3909e-04	-	mae:
4s 0.0402175/660	10ms/step	-	loss:	4.3961e-04	-	mae:
4s 181/660	9ms/step	-	loss:	4.4041e-04	-	mae: 0.0403
4s 0.0403188/660	9ms/step	-	loss:	4.4093e-04	-	mae:
4s 0.0404195/660	9ms/step	-	loss:	4.4141e-04	-	mae:
4s 0.0404202/660	9ms/step	-	loss:	4.4190e-04	-	mae:
4s 0.0405209/660	9ms/step	-	loss:	4.4239e-04	-	mae:
4s 0.0405216/660	9ms/step	-	loss:	4.4291e-04	-	mae:
4s 0.0406223/660	9ms/step	-	loss:	4.4345e-04	-	mae:
4s 0.0407230/660	9ms/step	-	loss:	4.4409e-04	-	mae:
3s 0.0407237/660	9ms/step	-	loss:	4.4472e-04	-	mae:
3s 0.0408244/660	9ms/step	-	loss:	4.4531e-04	-	mae:
3s 0.0408251/660	9ms/step	-	loss:	4.4589e-04	-	mae:
3s 0.0409258/660	9ms/step	-	loss:	4.4642e-04	-	mae:
3s 0.0409265/660	9ms/step	-	loss:	4.4688e-04	-	mae:
3s 0.0410272/660	9ms/step	-	loss:	4.4736e-04	-	mae:
3s 0.0410279/660	9ms/step	-	loss:	4.4783e-04	-	mae:
3s 0.0411286/660	9ms/step	-	loss:	4.4828e-04	-	mae:
3s 0.0411293/660	9ms/step	-	loss:	4.4868e-04	-	mae:
3s 0.0412297/660	9ms/step	-	loss:	4.4909e-04	-	mae:
3s 0.0412303/660	9ms/step	-	loss:	4.4929e-04	-	mae:
3s 0.0412310/660	9ms/step	-	loss:	4.4959e-04	-	mae:
3s 0.0412317/660	9ms/step	-	loss:	4.4992e-04	-	mae:
3s 0.0413324/660	9ms/step	-	loss:	4.5021e-04	-	mae:
2s 0.0413330/660	9ms/step	-	loss:	4.5045e-04	-	mae:
2s 0.0413337/660	9ms/step	-	loss:	4.5065e-04	-	mae:

Battery SoC Estimation Project Report						
0.0413344/660	2s	9ms/step	-	loss:	4.5082e-04	- mae:
0.0414351/660	2s	9ms/step	-	loss:	4.5095e-04	- mae:
0.0414357/660	2s	9ms/step	-	loss:	4.5104e-04	- mae:
0.0414364/660	2s	9ms/step	-	loss:	4.5109e-04	- mae:
0.0414371/660	2s	9ms/step	-	loss:	4.5111e-04	- mae:
0.0414378/660	2s	9ms/step	-	loss:	4.5111e-04	- mae:
0.0414385/660	2s	9ms/step	-	loss:	4.5107e-04	- mae:
0.0414392/660	2s	9ms/step	-	loss:	4.5094e-04	- mae:
0.0414399/660	2s	9ms/step	-	loss:	4.5086e-04	- mae:
0.0413406/660	2s	9ms/step	-	loss:	4.5075e-04	- mae:
0.0413413/660	2s	9ms/step	-	loss:	4.5061e-04	- mae:
0.0413419/660	2s	9ms/step	-	loss:	4.5047e-04	- mae:
0.0413425/660	2s	9ms/step	-	loss:	4.5034e-04	- mae:
0.0413432/660	1s	9ms/step	-	loss:	4.5017e-04	- mae:
0.0413439/660	1s	9ms/step	-	loss:	4.5000e-04	- mae:
0.0413445/660	1s	9ms/step	-	loss:	4.4985e-04	- mae:
0.0412452/660	1s	9ms/step	-	loss:	4.4966e-04	- mae:
0.0412459/660	1s	9ms/step	-	loss:	4.4948e-04	- mae:
0.0412466/660	1s	9ms/step	-	loss:	4.4931e-04	- mae:
0.0412473/660	1s	9ms/step	-	loss:	4.4913e-04	- mae:
0.0412479/660	1s	9ms/step	-	loss:	4.4896e-04	- mae:
0.0412485/660	1s	9ms/step	-	loss:	4.4878e-04	- mae:
0.0411492/660	1s	9ms/step	-	loss:	4.4856e-04	- mae:
0.0411499/660	1s	9ms/step	-	loss:	4.4834e-04	- mae:
0.0411506/660	1s	9ms/step	-	loss:	4.4813e-04	- mae:
0.0411513/660	1s	9ms/step	-	loss:	4.4792e-04	- mae:
0.0411520/660	1s	9ms/step	-	loss:	4.4768e-04	- mae:
0.0410527/660	1s	9ms/step	-	loss:	4.4744e-04	- mae:
0.0410534/660	1s	9ms/step	-	loss:	4.4718e-04	- mae:
0.0410541/660	1s	9ms/step	-	loss:	4.4691e-04	- mae:
0.0410547/660	0s	9ms/step	-	loss:	4.4669e-04	- mae:
0.0409553/660	0s	9ms/step	-	loss:	4.4648e-04	- mae:
0.0409560/660						

Battery SoC Estimation Project Report

0s	9ms/step	-	loss:	4.4624e-04	-	mae:
0.0409566/660						
0s	9ms/step	-	loss:	4.4603e-04	-	mae:
0.0409573/660						
0s	9ms/step	-	loss:	4.4578e-04	-	mae:
0.0409579/660						
0s	9ms/step	-	loss:	4.4557e-04	-	mae:
0.0408585/660						
0s	9ms/step	-	loss:	4.4535e-04	-	mae:
0.0408591/660						
0s	9ms/step	-	loss:	4.4513e-04	-	mae:
0.0408598/660						
0s	9ms/step	-	loss:	4.4487e-04	-	mae:
0.0408605/660						
0s	9ms/step	-	loss:	4.4463e-04	-	mae:
0.0407612/660						
0s	9ms/step	-	loss:	4.4439e-04	-	mae:
0.0407619/660						
0s	9ms/step	-	loss:	4.4414e-04	-	mae:
0.0407626/660						
0s	9ms/step	-	loss:	4.4389e-04	-	mae:
0.0407633/660						
0s	9ms/step	-	loss:	4.4366e-04	-	mae:
0.0407640/660						
0s	9ms/step	-	loss:	4.4344e-04	-	mae:
0.0406647/660						
0s	9ms/step	-	loss:	4.4321e-04	-	mae:
0.0406654/660						
0s	9ms/step	-	loss:	4.4297e-04	-	mae:
0.0406660/660						

11s 10ms/step - loss: 4.4273e-04 - mae: 0.0406 - val_loss: 3.1205e-04 - val_mae: 0.0273

Epoch 18/200

1/660	43:24	4s/step	-	loss:	3.8056e-04	-	mae:
0.0349	6/660						
8s	12ms/step	-	loss:	3.4112e-04	-	mae:	0.0308
	11/660						
0.0332	16/660						
7s	12ms/step	-	loss:	3.6658e-04	-	mae:	
0.0344	20/660						
7s	12ms/step	-	loss:	3.7931e-04	-	mae:	
0.0348	24/660						
7s	13ms/step	-	loss:	3.8471e-04	-	mae:	
0.0354	29/660						
7s	12ms/step	-	loss:	3.9072e-04	-	mae:	
0.0356	34/660						
7s	12ms/step	-	loss:	3.9401e-04	-	mae:	
0.0359	39/660						
7s	12ms/step	-	loss:	3.9725e-04	-	mae:	
0.0364	44/660						
7s	12ms/step	-	loss:	4.0930e-04	-	mae:	
0.0371	49/660						
7s	12ms/step	-	loss:	4.1452e-04	-	mae:	
0.0376	53/660						
7s	12ms/step	-	loss:	4.1817e-04	-	mae:	
0.0379	58/660						
7s	12ms/step	-	loss:	4.2181e-04	-	mae:	
0.0383	62/660						
7s	12ms/step	-	loss:	4.2409e-04	-	mae:	
0.0385	66/660						
7s	12ms/step	-	loss:	4.2565e-04	-	mae:	
0.0387	71/660						
7s	12ms/step	-	loss:	4.2745e-04	-	mae:	
0.0389	76/660						
7s	12ms/step	-	loss:	4.2845e-04	-	mae:	
0.0390	80/660						

Battery SoC Estimation Project Report

0.0390	7s	12ms/step	-	loss:	4.2912e-04	- mae:
	6s	85/660				
0.0392	6s	12ms/step	-	loss:	4.3014e-04	- mae:
	90/660					
0.0392	6s	12ms/step	-	loss:	4.3065e-04	- mae:
	95/660					
0.0393100/660	6s	12ms/step	-	loss:	4.3127e-04	- mae:
	6s	12ms/step	-	loss:	4.3167e-04	- mae:
0.0393105/660	6s	12ms/step	-	loss:	4.3207e-04	- mae:
0.0394110/660	6s	12ms/step	-	loss:	4.3230e-04	- mae:
0.0394115/660	6s	12ms/step	-	loss:	4.3267e-04	- mae:
0.0395120/660	6s	12ms/step	-	loss:	4.3320e-04	- mae:
0.0395125/660	6s	12ms/step	-	loss:	4.3372e-04	- mae:
0.0396130/660	6s	12ms/step	-	loss:	4.3402e-04	- mae:
0.0396135/660	6s	12ms/step	-	loss:	4.3435e-04	- mae:
0.0397139/660	6s	12ms/step	-	loss:	4.3453e-04	- mae:
0.0397144/660	6s	12ms/step	-	loss:	4.3473e-04	- mae:
0.0397148/660	6s	12ms/step	-	loss:	4.3488e-04	- mae:
0.0398153/660	6s	12ms/step	-	loss:	4.3499e-04	- mae:
0.0398158/660	5s	12ms/step	-	loss:	4.3505e-04	- mae:
0.0398162/660	5s	12ms/step	-	loss:	4.3504e-04	- mae:
0.0398166/660	5s	12ms/step	-	loss:	4.3500e-04	- mae:
0.0398171/660	5s	12ms/step	-	loss:	4.3507e-04	- mae:
0.0398176/660	5s	12ms/step	-	loss:	4.3506e-04	- mae:
0.0398181/660	5s	12ms/step	-	loss:	4.3492e-04	- mae:
0.0398186/660	5s	12ms/step	-	loss:	4.3472e-04	- mae:
0.0398191/660	5s	12ms/step	-	loss:	4.3459e-04	- mae:
0.0398195/660	5s	12ms/step	-	loss:	4.3446e-04	- mae:
0.0398199/660	5s	12ms/step	-	loss:	4.3431e-04	- mae:
0.0398203/660	5s	12ms/step	-	loss:	4.3416e-04	- mae:
0.0398207/660	5s	12ms/step	-	loss:	4.3403e-04	- mae:
0.0397213/660	5s	12ms/step	-	loss:	4.3383e-04	- mae:
0.0397219/660	5s	12ms/step	-	loss:	4.3374e-04	- mae:
0.0397226/660	5s	12ms/step	-	loss:	4.3371e-04	- mae:
0.0397233/660	4s	12ms/step	-	loss:	4.3368e-04	- mae:
0.0397239/660	4s	11ms/step	-	loss:	4.3367e-04	- mae:
0.0397245/660						

Battery SoC Estimation Project Report

4s 0.0397252/660	11ms/step	-	loss:	4.3365e-04	-	mae:
4s 0.0397259/660	11ms/step	-	loss:	4.3358e-04	-	mae:
4s 0.0397266/660	11ms/step	-	loss:	4.3345e-04	-	mae:
4s 0.0397273/660	11ms/step	-	loss:	4.3339e-04	-	mae:
4s 0.0397280/660	11ms/step	-	loss:	4.3333e-04	-	mae:
4s 0.0397287/660	11ms/step	-	loss:	4.3325e-04	-	mae:
4s 0.0397294/660	11ms/step	-	loss:	4.3308e-04	-	mae:
3s 0.0397301/660	11ms/step	-	loss:	4.3289e-04	-	mae:
3s 0.0397308/660	11ms/step	-	loss:	4.3270e-04	-	mae:
3s 0.0397315/660	11ms/step	-	loss:	4.3253e-04	-	mae:
3s 0.0396322/660	11ms/step	-	loss:	4.3235e-04	-	mae:
3s 0.0396329/660	11ms/step	-	loss:	4.3217e-04	-	mae:
3s 0.0396336/660	11ms/step	-	loss:	4.3199e-04	-	mae:
3s 0.0396343/660	10ms/step	-	loss:	4.3178e-04	-	mae:
3s 0.0396350/660	10ms/step	-	loss:	4.3156e-04	-	mae:
3s 0.0396356/660	10ms/step	-	loss:	4.3135e-04	-	mae:
3s 0.0396363/660	10ms/step	-	loss:	4.3116e-04	-	mae:
3s 0.0395369/660	10ms/step	-	loss:	4.3094e-04	-	mae:
3s 0.0395376/660	10ms/step	-	loss:	4.3075e-04	-	mae:
2s 0.0395383/660	10ms/step	-	loss:	4.3052e-04	-	mae:
2s 0.0395390/660	10ms/step	-	loss:	4.3027e-04	-	mae:
2s 0.0395397/660	10ms/step	-	loss:	4.3003e-04	-	mae:
2s 0.0394404/660	10ms/step	-	loss:	4.2976e-04	-	mae:
2s 0.0394410/660	10ms/step	-	loss:	4.2945e-04	-	mae:
2s 0.0394416/660	10ms/step	-	loss:	4.2917e-04	-	mae:
2s 0.0394423/660	10ms/step	-	loss:	4.2888e-04	-	mae:
2s 0.0393430/660	10ms/step	-	loss:	4.2856e-04	-	mae:
2s 0.0393437/660	10ms/step	-	loss:	4.2825e-04	-	mae:
2s 0.0393444/660	10ms/step	-	loss:	4.2794e-04	-	mae:
2s 0.0392450/660	10ms/step	-	loss:	4.2740e-04	-	mae:
2s 0.0392457/660	10ms/step	-	loss:	4.2713e-04	-	mae:
1s 0.0392463/660	10ms/step	-	loss:	4.2692e-04	-	mae:
0.0392470/660						

Battery SoC Estimation Project Report

0.0392477/660	1s	10ms/step	-	loss:	4.2668e-04	-	mae:
0.0391484/660	1s	10ms/step	-	loss:	4.2642e-04	-	mae:
0.0391490/660	1s	10ms/step	-	loss:	4.2615e-04	-	mae:
0.0391495/660	1s	10ms/step	-	loss:	4.2590e-04	-	mae:
0.0391501/660	1s	10ms/step	-	loss:	4.2569e-04	-	mae:
0.0390508/660	1s	10ms/step	-	loss:	4.2518e-04	-	mae:
0.0390515/660	1s	10ms/step	-	loss:	4.2492e-04	-	mae:
0.0390522/660	1s	10ms/step	-	loss:	4.2464e-04	-	mae:
0.0390528/660	1s	10ms/step	-	loss:	4.2439e-04	-	mae:
0.0389534/660	1s	10ms/step	-	loss:	4.2413e-04	-	mae:
0.0389541/660	1s	10ms/step	-	loss:	4.2384e-04	-	mae:
0.0389547/660	1s	10ms/step	-	loss:	4.2360e-04	-	mae:
0.0389554/660	1s	10ms/step	-	loss:	4.2335e-04	-	mae:
0.0389559/660	0s	10ms/step	-	loss:	4.2317e-04	-	mae:
0.0388566/660	0s	10ms/step	-	loss:	4.2292e-04	-	mae:
0.0388573/660	0s	10ms/step	-	loss:	4.2269e-04	-	mae:
0.0388580/660	0s	10ms/step	-	loss:	4.2246e-04	-	mae:
0.0388586/660	0s	10ms/step	-	loss:	4.2226e-04	-	mae:
0.0388593/660	0s	10ms/step	-	loss:	4.2203e-04	-	mae:
0.0387600/660	0s	10ms/step	-	loss:	4.2181e-04	-	mae:
0.0387606/660	0s	10ms/step	-	loss:	4.2162e-04	-	mae:
0.0387613/660	0s	10ms/step	-	loss:	4.2142e-04	-	mae:
0.0387618/660	0s	10ms/step	-	loss:	4.2127e-04	-	mae:
0.0387625/660	0s	10ms/step	-	loss:	4.2107e-04	-	mae:
0.0386632/660	0s	9ms/step	-	loss:	4.2088e-04	-	mae: 0.0386
639/660	0s	9ms/step	-	loss:	4.2070e-04	-	mae:
0.0386645/660	0s	9ms/step	-	loss:	4.2055e-04	-	mae:
0.0386652/660	0s	9ms/step	-	loss:	4.2036e-04	-	mae:
0.0386659/660	0s	9ms/step	-	loss:	4.2017e-04	-	mae:
0.0386660/660	11s	10ms/step	-	loss: 4.2012e-04	-	mae: 0.0386	-
				val_loss: 2.9588e-04	-	val_mae: 0.0256	
Epoch 19/200							
0.0314	1/660	39:05	4s/step	-	loss: 3.4809e-04	-	mae:
	6/660						
7s	12ms/step	-	loss:	3.0142e-04	-	mae: 0.0267	11/660

Battery SoC Estimation Project Report

0.0291	7s	12ms/step	-	loss:	3.2552e-04	-	mae:
	16/660						
0.0306	7s	12ms/step	-	loss:	3.4057e-04	-	mae:
	21/660						
0.0316	7s	12ms/step	-	loss:	3.5077e-04	-	mae:
	26/660						
0.0325	7s	12ms/step	-	loss:	3.5943e-04	-	mae:
	32/660						
0.0332	7s	11ms/step	-	loss:	3.6601e-04	-	mae:
	38/660						
0.0339	6s	11ms/step	-	loss:	3.7350e-04	-	mae:
	44/660						
0.0348	6s	11ms/step	-	loss:	3.8206e-04	-	mae:
	50/660						
0.0355	6s	10ms/step	-	loss:	3.8866e-04	-	mae:
	57/660						
0.0361	6s	10ms/step	-	loss:	3.9484e-04	-	mae:
	64/660						
0.0365	5s	10ms/step	-	loss:	3.9902e-04	-	mae:
	70/660						
0.0368	5s	10ms/step	-	loss:	4.0144e-04	-	mae:
	77/660						
0.0369	5s	10ms/step	-	loss:	4.0336e-04	-	mae:
	81/660						
0.0371	5s	10ms/step	-	loss:	4.0452e-04	-	mae:
	88/660						
0.0373	5s	10ms/step	-	loss:	4.0627e-04	-	mae:
	94/660						
0.0374101/660	5s	10ms/step	-	loss:	4.0744e-04	-	mae:
	107/660	9ms/step	-	loss:	4.0855e-04	-	mae: 0.0375
0.0376114/660	5s	9ms/step	-	loss:	4.0951e-04	-	mae:
	121/660						
0.0377121/660	4s	9ms/step	-	loss:	4.1033e-04	-	mae:
	128/660						
0.0378128/660	4s	9ms/step	-	loss:	4.1146e-04	-	mae:
	135/660						
0.0379135/660	4s	9ms/step	-	loss:	4.1231e-04	-	mae:
	141/660						
0.0380141/660	4s	9ms/step	-	loss:	4.1284e-04	-	mae:
	148/660						
0.0380148/660	4s	9ms/step	-	loss:	4.1312e-04	-	mae:
	155/660						
0.0381155/660	4s	9ms/step	-	loss:	4.1342e-04	-	mae:
	162/660						
0.0381162/660	4s	9ms/step	-	loss:	4.1366e-04	-	mae:
	168/660						
0.0381168/660	4s	9ms/step	-	loss:	4.1379e-04	-	mae:
	175/660						
0.0381175/660	4s	9ms/step	-	loss:	4.1402e-04	-	mae:
	182/660						
0.0382182/660	4s	9ms/step	-	loss:	4.1395e-04	-	mae:
	188/660						
0.0382188/660	4s	9ms/step	-	loss:	4.1382e-04	-	mae:
	194/660						
0.0382194/660	4s	9ms/step	-	loss:	4.1373e-04	-	mae:
	200/660						
0.0381200/660	4s	9ms/step	-	loss:	4.1363e-04	-	mae:
	206/660						
0.0381206/660	4s	9ms/step	-	loss:	4.1355e-04	-	mae:
	212/660						
0.0381212/660	3s	9ms/step	-	loss:	4.1349e-04	-	mae:
	219/660						

Battery SoC Estimation Project Report

0.0382225/660	3s	9ms/step	-	loss:	4.1353e-04	-	mae:
0.0382232/660	3s	9ms/step	-	loss:	4.1361e-04	-	mae:
0.0382239/660	3s	9ms/step	-	loss:	4.1369e-04	-	mae:
0.0382246/660	3s	9ms/step	-	loss:	4.1376e-04	-	mae:
0.0382253/660	3s	9ms/step	-	loss:	4.1384e-04	-	mae:
0.0382260/660	3s	9ms/step	-	loss:	4.1391e-04	-	mae:
0.0382264/660	3s	9ms/step	-	loss:	4.1397e-04	-	mae:
0.0382268/660	3s	9ms/step	-	loss:	4.1405e-04	-	mae:
0.0382273/660	3s	9ms/step	-	loss:	4.1413e-04	-	mae:
0.0383278/660	3s	9ms/step	-	loss:	4.1424e-04	-	mae:
0.0383282/660	3s	9ms/step	-	loss:	4.1435e-04	-	mae:
0.0383287/660	3s	9ms/step	-	loss:	4.1441e-04	-	mae:
0.0383292/660	3s	9ms/step	-	loss:	4.1447e-04	-	mae:
0.0383297/660	3s	9ms/step	-	loss:	4.1453e-04	-	mae:
0.0383302/660	3s	9ms/step	-	loss:	4.1457e-04	-	mae:
0.0383306/660	3s	9ms/step	-	loss:	4.1462e-04	-	mae:
0.0383310/660	3s	9ms/step	-	loss:	4.1467e-04	-	mae:
0.0383315/660	3s	9ms/step	-	loss:	4.1470e-04	-	mae:
0.0383319/660	3s	9ms/step	-	loss:	4.1476e-04	-	mae:
0.0383324/660	3s	9ms/step	-	loss:	4.1481e-04	-	mae:
0.0383329/660	3s	9ms/step	-	loss:	4.1485e-04	-	mae:
0.0383333/660	3s	9ms/step	-	loss:	4.1490e-04	-	mae:
0.0383338/660	3s	10ms/step	-	loss:	4.1493e-04	-	mae:
0.0384343/660	3s	10ms/step	-	loss:	4.1494e-04	-	mae:
0.0384348/660	3s	10ms/step	-	loss:	4.1494e-04	-	mae:
0.0384352/660	2s	10ms/step	-	loss:	4.1493e-04	-	mae:
0.0384357/660	2s	10ms/step	-	loss:	4.1492e-04	-	mae:
0.0384362/660	2s	10ms/step	-	loss:	4.1489e-04	-	mae:
0.0384367/660	2s	10ms/step	-	loss:	4.1485e-04	-	mae:
0.0384372/660	2s	10ms/step	-	loss:	4.1482e-04	-	mae:
0.0383377/660	2s	10ms/step	-	loss:	4.1477e-04	-	mae:
0.0383381/660	2s	10ms/step	-	loss:	4.1472e-04	-	mae:
0.0383386/660	2s	10ms/step	-	loss:	4.1467e-04	-	mae:

Battery SoC Estimation Project Report						
0.0383390/660	2s	10ms/step	-	loss:	4.1461e-04	- mae:
0.0383393/660	2s	10ms/step	-	loss:	4.1456e-04	- mae:
0.0383397/660	2s	10ms/step	-	loss:	4.1451e-04	- mae:
0.0383402/660	2s	10ms/step	-	loss:	4.1443e-04	- mae:
0.0383407/660	2s	10ms/step	-	loss:	4.1433e-04	- mae:
0.0383411/660	2s	10ms/step	-	loss:	4.1420e-04	- mae:
0.0383415/660	2s	10ms/step	-	loss:	4.1410e-04	- mae:
0.0383419/660	2s	10ms/step	-	loss:	4.1399e-04	- mae:
0.0383423/660	2s	10ms/step	-	loss:	4.1387e-04	- mae:
0.0383427/660	2s	10ms/step	-	loss:	4.1377e-04	- mae:
0.0383431/660	2s	10ms/step	-	loss:	4.1367e-04	- mae:
0.0382435/660	2s	10ms/step	-	loss:	4.1356e-04	- mae:
0.0382439/660	2s	10ms/step	-	loss:	4.1346e-04	- mae:
0.0382445/660	2s	10ms/step	-	loss:	4.1337e-04	- mae:
0.0382452/660	2s	10ms/step	-	loss:	4.1323e-04	- mae:
0.0382458/660	2s	10ms/step	-	loss:	4.1307e-04	- mae:
0.0382465/660	1s	10ms/step	-	loss:	4.1293e-04	- mae:
0.0382471/660	1s	10ms/step	-	loss:	4.1278e-04	- mae:
0.0382478/660	1s	10ms/step	-	loss:	4.1265e-04	- mae:
0.0382485/660	1s	10ms/step	-	loss:	4.1248e-04	- mae:
0.0381490/660	1s	10ms/step	-	loss:	4.1229e-04	- mae:
0.0381496/660	1s	10ms/step	-	loss:	4.1215e-04	- mae:
0.0381502/660	1s	10ms/step	-	loss:	4.1198e-04	- mae:
0.0381509/660	1s	10ms/step	-	loss:	4.1181e-04	- mae:
0.0381516/660	1s	10ms/step	-	loss:	4.1164e-04	- mae:
0.0381523/660	1s	10ms/step	-	loss:	4.1145e-04	- mae:
0.0380529/660	1s	10ms/step	-	loss:	4.1125e-04	- mae:
0.0380536/660	1s	10ms/step	-	loss:	4.1107e-04	- mae:
0.0380543/660	1s	10ms/step	-	loss:	4.1085e-04	- mae:
0.0380550/660	1s	10ms/step	-	loss:	4.1063e-04	- mae:
0.0380556/660	1s	10ms/step	-	loss:	4.1042e-04	- mae:
0.0380563/660	0s	10ms/step	-	loss:	4.1026e-04	- mae:
0.0379569/660					4.1006e-04	- mae:

Battery SoC Estimation Project Report

0s	10ms/step	-	loss:	4.0990e-04	-	mae:
0.0379575/660						
0s	10ms/step	-	loss:	4.0974e-04	-	mae:
0.0379582/660						
0s	10ms/step	-	loss:	4.0956e-04	-	mae:
0.0379589/660						
0s	10ms/step	-	loss:	4.0937e-04	-	mae:
0.0379596/660						
0s	10ms/step	-	loss:	4.0918e-04	-	mae:
0.0379603/660						
0s	10ms/step	-	loss:	4.0900e-04	-	mae:
0.0378610/660						
0s	10ms/step	-	loss:	4.0882e-04	-	mae:
0.0378615/660						
0s	10ms/step	-	loss:	4.0870e-04	-	mae:
0.0378622/660						
0s	10ms/step	-	loss:	4.0852e-04	-	mae:
0.0378629/660						
0s	10ms/step	-	loss:	4.0834e-04	-	mae:
0.0378636/660						
0s	10ms/step	-	loss:	4.0818e-04	-	mae:
0.0378643/660						
0s	10ms/step	-	loss:	4.0803e-04	-	mae:
0.0377650/660						
0s	10ms/step	-	loss:	4.0786e-04	-	mae:
0.0377657/660						
0s	10ms/step	-	loss:	4.0769e-04	-	mae:
0.0377660/660						

10s 10ms/step - loss: 4.0759e-04 - mae: 0.0377 - val_loss: 3.1383e-04 - val_mae: 0.0284

Epoch 20/200

1/660	37:46	3s/step	-	loss:	3.8162e-04	-	mae:
0.0359	6/660						
7s	12ms/step	-	loss:	3.0268e-04	-	mae:	0.0277
	11/660						
7s	12ms/step	-	loss:	3.1106e-04	-	mae:	
0.0284	16/660						
7s	12ms/step	-	loss:	3.1949e-04	-	mae:	
0.0292	21/660						
7s	12ms/step	-	loss:	3.2761e-04	-	mae:	
0.0300	26/660						
7s	12ms/step	-	loss:	3.3656e-04	-	mae:	
0.0308	32/660						
7s	11ms/step	-	loss:	3.4362e-04	-	mae:	
0.0315	38/660						
6s	11ms/step	-	loss:	3.5126e-04	-	mae:	
0.0322	44/660						
6s	11ms/step	-	loss:	3.6046e-04	-	mae:	
0.0331	50/660						
6s	10ms/step	-	loss:	3.6809e-04	-	mae:	
0.0338	57/660						
5s	10ms/step	-	loss:	3.7559e-04	-	mae:	
0.0345	64/660						
5s	10ms/step	-	loss:	3.8155e-04	-	mae:	
0.0351	71/660						
5s	10ms/step	-	loss:	3.8587e-04	-	mae:	
0.0355	77/660						
5s	10ms/step	-	loss:	3.8847e-04	-	mae:	
0.0357	83/660						
5s	10ms/step	-	loss:	3.9077e-04	-	mae:	
0.0359	90/660						
5s	9ms/step	-	loss:	3.9287e-04	-	mae:	0.0361
	95/660						
5s	9ms/step	-	loss:	3.9429e-04	-	mae:	
0.0362102/660							
5s	9ms/step	-	loss:	3.9581e-04	-	mae:	
0.0364108/660							

Battery SoC Estimation Project Report						
0.0365115/660	5s	9ms/step	-	loss:	3.9697e-04	- mae:
0.0366122/660	5s	9ms/step	-	loss:	3.9823e-04	- mae:
0.0368129/660	4s	9ms/step	-	loss:	3.9982e-04	- mae:
0.0369136/660	4s	9ms/step	-	loss:	4.0109e-04	- mae:
0.0370143/660	4s	9ms/step	-	loss:	4.0210e-04	- mae:
0.0371150/660	4s	9ms/step	-	loss:	4.0290e-04	- mae:
0.0372157/660	4s	9ms/step	-	loss:	4.0359e-04	- mae:
0.0372164/660	4s	9ms/step	-	loss:	4.0416e-04	- mae:
0.0373170/660	4s	9ms/step	-	loss:	4.0450e-04	- mae:
0.0373177/660	4s	9ms/step	-	loss:	4.0480e-04	- mae:
0.0373184/660	4s	9ms/step	-	loss:	4.0507e-04	- mae:
0.0373191/660	4s	9ms/step	-	loss:	4.0512e-04	- mae:
0.0374198/660	3s	9ms/step	-	loss:	4.0520e-04	- mae:
0.0374205/660	3s	9ms/step	-	loss:	4.0529e-04	- mae:
0.0374212/660	3s	9ms/step	-	loss:	4.0536e-04	- mae:
0.0374219/660	3s	9ms/step	-	loss:	4.0543e-04	- mae:
0.0374224/660	3s	9ms/step	-	loss:	4.0560e-04	- mae:
0.0374231/660	3s	9ms/step	-	loss:	4.0577e-04	- mae:
0.0375237/660	3s	9ms/step	-	loss:	4.0601e-04	- mae:
0.0375244/660	3s	9ms/step	-	loss:	4.0620e-04	- mae:
0.0375251/660	3s	9ms/step	-	loss:	4.0642e-04	- mae:
0.0375257/660	3s	9ms/step	-	loss:	4.0658e-04	- mae:
0.0375263/660	3s	9ms/step	-	loss:	4.0666e-04	- mae:
0.0376269/660	3s	9ms/step	-	loss:	4.0681e-04	- mae:
0.0376276/660	3s	9ms/step	-	loss:	4.0697e-04	- mae:
0.0376282/660	3s	9ms/step	-	loss:	4.0717e-04	- mae:
0.0376289/660	3s	9ms/step	-	loss:	4.0730e-04	- mae:
0.0376296/660	3s	9ms/step	-	loss:	4.0742e-04	- mae:
0.0376303/660	3s	9ms/step	-	loss:	4.0749e-04	- mae:
0.0376309/660	2s	9ms/step	-	loss:	4.0763e-04	- mae:
0.0377316/660	2s	9ms/step	-	loss:	4.0769e-04	- mae:
0.0377323/660	2s	9ms/step	-	loss:	4.0775e-04	- mae:
0.0377330/660						

Battery SoC Estimation Project Report

0.0377337/660	2s	9ms/step	-	loss:	4.0781e-04	-	mae:
0.0377344/660	2s	8ms/step	-	loss:	4.0782e-04	-	mae:
0.0377349/660	2s	8ms/step	-	loss:	4.0780e-04	-	mae:
0.0377356/660	2s	9ms/step	-	loss:	4.0777e-04	-	mae:
0.0377363/660	2s	8ms/step	-	loss:	4.0772e-04	-	mae:
0.0377369/660	2s	8ms/step	-	loss:	4.0766e-04	-	mae:
0.0377376/660	2s	9ms/step	-	loss:	4.0762e-04	-	mae:
0.0377383/660	2s	8ms/step	-	loss:	4.0757e-04	-	mae:
0.0377389/660	2s	8ms/step	-	loss:	4.0751e-04	-	mae:
0.0377395/660	2s	8ms/step	-	loss:	4.0747e-04	-	mae:
0.0377401/660	2s	9ms/step	-	loss:	4.0742e-04	-	mae:
0.0377407/660	2s	8ms/step	-	loss:	4.0734e-04	-	mae:
0.0376414/660	2s	8ms/step	-	loss:	4.0725e-04	-	mae:
0.0376421/660	2s	8ms/step	-	loss:	4.0713e-04	-	mae:
0.0376428/660	1s	8ms/step	-	loss:	4.0689e-04	-	mae:
0.0376435/660	1s	8ms/step	-	loss:	4.0676e-04	-	mae:
0.0376442/660	1s	8ms/step	-	loss:	4.0663e-04	-	mae:
0.0376449/660	1s	8ms/step	-	loss:	4.0649e-04	-	mae:
0.0376456/660	1s	8ms/step	-	loss:	4.0637e-04	-	mae:
0.0376462/660	1s	8ms/step	-	loss:	4.0627e-04	-	mae:
0.0376468/660	1s	8ms/step	-	loss:	4.0618e-04	-	mae:
0.0375473/660	1s	8ms/step	-	loss:	4.0610e-04	-	mae:
0.0375479/660	1s	8ms/step	-	loss:	4.0599e-04	-	mae:
0.0375485/660	1s	8ms/step	-	loss:	4.0588e-04	-	mae:
0.0375492/660	1s	8ms/step	-	loss:	4.0573e-04	-	mae:
0.0375499/660	1s	8ms/step	-	loss:	4.0558e-04	-	mae:
0.0375506/660	1s	8ms/step	-	loss:	4.0545e-04	-	mae:
0.0375512/660	1s	8ms/step	-	loss:	4.0534e-04	-	mae:
0.0375516/660	1s	9ms/step	-	loss:	4.0526e-04	-	mae:
0.0375520/660	1s	9ms/step	-	loss:	4.0518e-04	-	mae:
0.0375524/660	1s	9ms/step	-	loss:	4.0509e-04	-	mae:
0.0375529/660	1s	9ms/step	-	loss:	4.0497e-04	-	mae:
0.0374533/660							

Battery SoC Estimation Project Report

0.0374538/660	1s	9ms/step	-	loss:	4.0487e-04	-	mae:	
0.0374543/660	1s	9ms/step	-	loss:	4.0474e-04	-	mae:	
0.0374548/660	1s	9ms/step	-	loss:	4.0462e-04	-	mae:	
0.0374553/660	0s	9ms/step	-	loss:	4.0451e-04	-	mae:	
0.0374558/660	0s	9ms/step	-	loss:	4.0441e-04	-	mae:	
0.0374563/660	0s	9ms/step	-	loss:	4.0432e-04	-	mae:	
0.0374567/660	0s	9ms/step	-	loss:	4.0422e-04	-	mae:	
0.0374572/660	0s	9ms/step	-	loss:	4.0415e-04	-	mae:	
0.0374577/660	0s	9ms/step	-	loss:	4.0406e-04	-	mae:	
0.0374582/660	0s	9ms/step	-	loss:	4.0397e-04	-	mae:	
0.0373586/660	0s	9ms/step	-	loss:	4.0388e-04	-	mae:	
0.0373591/660	0s	9ms/step	-	loss:	4.0381e-04	-	mae:	
0.0373595/660	0s	9ms/step	-	loss:	4.0372e-04	-	mae:	
0.0373600/660	0s	9ms/step	-	loss:	4.0364e-04	-	mae:	
0.0373605/660	0s	9ms/step	-	loss:	4.0355e-04	-	mae:	
0.0373610/660	0s	9ms/step	-	loss:	4.0347e-04	-	mae:	
0.0373615/660	0s	9ms/step	-	loss:	4.0339e-04	-	mae:	
0.0373620/660	0s	9ms/step	-	loss:	4.0330e-04	-	mae:	
0.0373625/660	0s	9ms/step	-	loss:	4.0321e-04	-	mae:	
0.0373629/660	0s	9ms/step	-	loss:	4.0312e-04	-	mae:	
0.0373633/660	0s	9ms/step	-	loss:	4.0306e-04	-	mae:	
0.0373638/660	0s	9ms/step	-	loss:	4.0299e-04	-	mae:	
0.0373642/660	0s	9ms/step	-	loss:	4.0292e-04	-	mae:	
0.0373647/660	0s	9ms/step	-	loss:	4.0286e-04	-	mae:	
0.0372652/660	0s	9ms/step	-	loss:	4.0278e-04	-	mae:	
0.0372656/660	0s	9ms/step	-	loss:	4.0269e-04	-	mae:	
0.0372660/660	0s	9ms/step	-	loss:	4.0262e-04	-	mae:	
0.0372660/660	10s	10ms/step	-	loss:	4.0254e-04	-	mae: 0.0372 - val_loss: 4.0768e-04 - val_mae: 0.0385	
Epoch 21/200								
0.0435	1/660	15s	23ms/step	-	loss:	4.5570e-04	-	mae:
	8/660							
5s	8ms/step	-	loss:	3.7111e-04	-	mae:	0.0348	
	15/660							
0.0360	5s	8ms/step	-	loss:	3.8311e-04	-	mae:	
	22/660							
0.0370	5s	8ms/step	-	loss:	3.9373e-04	-	mae:	
	29/660							

Battery SoC Estimation Project Report

0.0377	5s	8ms/step	-	loss:	4.0138e-04	- mae:
		35/660				
0.0380	5s	8ms/step	-	loss:	4.0515e-04	- mae:
		41/660				
0.0385	5s	8ms/step	-	loss:	4.1080e-04	- mae:
		46/660				
0.0390	5s	8ms/step	-	loss:	4.1523e-04	- mae:
		53/660				
0.0394	5s	8ms/step	-	loss:	4.2039e-04	- mae:
		59/660				
0.0398	5s	8ms/step	-	loss:	4.2389e-04	- mae:
		66/660				
0.0401	4s	8ms/step	-	loss:	4.2718e-04	- mae:
		73/660				
0.0403	4s	8ms/step	-	loss:	4.2946e-04	- mae:
		80/660				
0.0404	4s	8ms/step	-	loss:	4.3084e-04	- mae:
		87/660				
0.0405	4s	8ms/step	-	loss:	4.3206e-04	- mae:
		94/660				
0.0406101/660	4s	8ms/step	-	loss:	4.3297e-04	- mae:
0.0406108/660	4s	8ms/step	-	loss:	4.3372e-04	- mae:
0.0407115/660	4s	8ms/step	-	loss:	4.3445e-04	- mae:
0.0408122/660	4s	8ms/step	-	loss:	4.3518e-04	- mae:
0.0409129/660	4s	8ms/step	-	loss:	4.3627e-04	- mae:
0.0409136/660	4s	8ms/step	-	loss:	4.3704e-04	- mae:
0.0410143/660	4s	8ms/step	-	loss:	4.3757e-04	- mae:
0.0410149/660	4s	8ms/step	-	loss:	4.3788e-04	- mae:
0.0410156/660	4s	8ms/step	-	loss:	4.3805e-04	- mae:
0.0410163/660	4s	8ms/step	-	loss:	4.3811e-04	- mae:
0.0410168/660	4s	8ms/step	-	loss:	4.3796e-04	- mae:
0.0410174/660	4s	8ms/step	-	loss:	4.3782e-04	- mae:
0.0410180/660	3s	8ms/step	-	loss:	4.3769e-04	- mae:
0.0409187/660	3s	8ms/step	-	loss:	4.3739e-04	- mae:
0.0409194/660	3s	8ms/step	-	loss:	4.3693e-04	- mae:
0.0408200/660	3s	8ms/step	-	loss:	4.3650e-04	- mae:
0.0408206/660	3s	8ms/step	-	loss:	4.3607e-04	- mae:
0.0407212/660	3s	8ms/step	-	loss:	4.3560e-04	- mae:
0.0407219/660	3s	8ms/step	-	loss:	4.3543e-04	- mae:
0.0407226/660	3s	8ms/step	-	loss:	4.3548e-04	- mae:
0.0407233/660	3s	8ms/step	-	loss:	4.3570e-04	- mae:
0.0408240/660	3s	8ms/step	-	loss:	4.3595e-04	- mae:
0.0408247/660	3s	8ms/step	-	loss:	4.3622e-04	- mae:

Battery SoC Estimation Project Report

3s 0.0408254/660	8ms/step	-	loss:	4.3646e-04	-	mae:
3s 0.0408261/660	8ms/step	-	loss:	4.3666e-04	-	mae:
3s 0.0408267/660	8ms/step	-	loss:	4.3684e-04	-	mae:
3s 0.0408274/660	8ms/step	-	loss:	4.3703e-04	-	mae:
3s 0.0408280/660	8ms/step	-	loss:	4.3724e-04	-	mae:
3s 0.0408286/660	8ms/step	-	loss:	4.3740e-04	-	mae:
3s 0.0408291/660	8ms/step	-	loss:	4.3749e-04	-	mae:
3s 0.0408298/660	8ms/step	-	loss:	4.3757e-04	-	mae:
3s 0.0408305/660	8ms/step	-	loss:	4.3764e-04	-	mae:
2s 0.0408311/660	8ms/step	-	loss:	4.3772e-04	-	mae:
2s 0.0408317/660	8ms/step	-	loss:	4.3778e-04	-	mae:
2s 0.0408324/660	8ms/step	-	loss:	4.3781e-04	-	mae:
2s 0.0408331/660	8ms/step	-	loss:	4.3783e-04	-	mae:
2s 0.0408338/660	8ms/step	-	loss:	4.3786e-04	-	mae:
2s 0.0408345/660	8ms/step	-	loss:	4.3785e-04	-	mae:
2s 0.0408352/660	8ms/step	-	loss:	4.3781e-04	-	mae:
2s 0.0408359/660	8ms/step	-	loss:	4.3774e-04	-	mae:
2s 0.0408365/660	8ms/step	-	loss:	4.3764e-04	-	mae:
2s 0.0408372/660	8ms/step	-	loss:	4.3753e-04	-	mae:
2s 0.0407379/660	8ms/step	-	loss:	4.3738e-04	-	mae:
2s 0.0407386/660	8ms/step	-	loss:	4.3719e-04	-	mae:
2s 0.0407393/660	8ms/step	-	loss:	4.3700e-04	-	mae:
2s 0.0407400/660	8ms/step	-	loss:	4.3679e-04	-	mae:
2s 0.0406407/660	8ms/step	-	loss:	4.3654e-04	-	mae:
2s 0.0406414/660	8ms/step	-	loss:	4.3625e-04	-	mae:
1s 0.0406419/660	8ms/step	-	loss:	4.3596e-04	-	mae:
1s 0.0405426/660	8ms/step	-	loss:	4.3573e-04	-	mae:
1s 0.0405433/660	8ms/step	-	loss:	4.3544e-04	-	mae:
1s 0.0405440/660	8ms/step	-	loss:	4.3515e-04	-	mae:
1s 0.0404447/660	8ms/step	-	loss:	4.3486e-04	-	mae:
1s 0.0404454/660	8ms/step	-	loss:	4.3457e-04	-	mae:
1s 0.0404461/660	8ms/step	-	loss:	4.3428e-04	-	mae:
1s 0.0403468/660	8ms/step	-	loss:	4.3399e-04	-	mae:

Battery SoC Estimation Project Report

1s	8ms/step	-	loss:	4.3372e-04	-	mae:
0.0403475/660						
1s	8ms/step	-	loss:	4.3344e-04	-	mae:
0.0403482/660						
1s	8ms/step	-	loss:	4.3315e-04	-	mae:
0.0402487/660						
1s	8ms/step	-	loss:	4.3294e-04	-	mae:
0.0402494/660						
1s	8ms/step	-	loss:	4.3263e-04	-	mae:
0.0402501/660						
1s	8ms/step	-	loss:	4.3232e-04	-	mae:
0.0402508/660						
1s	8ms/step	-	loss:	4.3204e-04	-	mae:
0.0401514/660						
1s	8ms/step	-	loss:	4.3179e-04	-	mae:
0.0401521/660						
1s	8ms/step	-	loss:	4.3148e-04	-	mae:
0.0401528/660						
1s	8ms/step	-	loss:	4.3117e-04	-	mae:
0.0400533/660						
1s	8ms/step	-	loss:	4.3094e-04	-	mae:
0.0400539/660						
0s	8ms/step	-	loss:	4.3067e-04	-	mae:
0.0400544/660						
0s	8ms/step	-	loss:	4.3045e-04	-	mae:
0.0400550/660						
0s	8ms/step	-	loss:	4.3020e-04	-	mae:
0.0399556/660						
0s	8ms/step	-	loss:	4.2996e-04	-	mae:
0.0399562/660						
0s	8ms/step	-	loss:	4.2971e-04	-	mae:
0.0399568/660						
0s	8ms/step	-	loss:	4.2946e-04	-	mae:
0.0398574/660						
0s	8ms/step	-	loss:	4.2921e-04	-	mae:
0.0398581/660						
0s	8ms/step	-	loss:	4.2893e-04	-	mae:
0.0398587/660						
0s	8ms/step	-	loss:	4.2868e-04	-	mae:
0.0398594/660						
0s	8ms/step	-	loss:	4.2839e-04	-	mae:
0.0397601/660						
0s	8ms/step	-	loss:	4.2810e-04	-	mae:
0.0397608/660						
0s	8ms/step	-	loss:	4.2783e-04	-	mae:
0.0397615/660						
0s	8ms/step	-	loss:	4.2756e-04	-	mae:
0.0396622/660						
0s	8ms/step	-	loss:	4.2729e-04	-	mae:
0.0396629/660						
0s	8ms/step	-	loss:	4.2702e-04	-	mae:
0.0396635/660						
0s	8ms/step	-	loss:	4.2679e-04	-	mae:
0.0396642/660						
0s	8ms/step	-	loss:	4.2654e-04	-	mae:
0.0395648/660						
0s	8ms/step	-	loss:	4.2632e-04	-	mae:
0.0395655/660						
0s	8ms/step	-	loss:	4.2605e-04	-	mae:
0.0395660/660						
6s	9ms/step	-	loss:	4.2583e-04	-	mae: 0.0395 - val_loss: 2.9694e-04 - val_mae: 0.0262
Epoch 22/200						
0.0288	1/660	47:40	4s/step	-	loss:	3.1267e-04
	5/660				-	mae:
9s	14ms/step	-	loss:	2.7742e-04	-	mae: 0.0251
	9/660					

Battery SoC Estimation Project Report

0.0261	9s	14ms/step	-	loss:	2.8704e-04	- mae:
	9s	13/660				
0.0277	9s	14ms/step	-	loss:	3.0365e-04	- mae:
	17/660					
0.0286	8s	14ms/step	-	loss:	3.1369e-04	- mae:
	21/660					
0.0295	8s	14ms/step	-	loss:	3.2257e-04	- mae:
	25/660					
0.0303	8s	14ms/step	-	loss:	3.3107e-04	- mae:
	29/660					
0.0308	8s	14ms/step	-	loss:	3.3618e-04	- mae:
	33/660					
0.0313	8s	14ms/step	-	loss:	3.4082e-04	- mae:
	38/660					
0.0319	8s	13ms/step	-	loss:	3.4737e-04	- mae:
	43/660					
0.0328	8s	13ms/step	-	loss:	3.5603e-04	- mae:
	48/660					
0.0335	7s	13ms/step	-	loss:	3.6334e-04	- mae:
	53/660					
0.0341	7s	13ms/step	-	loss:	3.7006e-04	- mae:
	57/660					
0.0346	7s	13ms/step	-	loss:	3.7434e-04	- mae:
	61/660					
0.0349	7s	13ms/step	-	loss:	3.7808e-04	- mae:
	66/660					
0.0352	7s	13ms/step	-	loss:	3.8141e-04	- mae:
	71/660					
0.0355	7s	13ms/step	-	loss:	3.8430e-04	- mae:
	76/660					
0.0357	7s	13ms/step	-	loss:	3.8627e-04	- mae:
	81/660					
0.0359	7s	13ms/step	-	loss:	3.8801e-04	- mae:
	85/660					
0.0360	7s	13ms/step	-	loss:	3.8935e-04	- mae:
	89/660					
0.0361	7s	13ms/step	-	loss:	3.9027e-04	- mae:
	93/660					
0.0362	7s	13ms/step	-	loss:	3.9120e-04	- mae:
	97/660					
0.0363101/660	7s	13ms/step	-	loss:	3.9193e-04	- mae:
0.0363105/660	7s	13ms/step	-	loss:	3.9255e-04	- mae:
0.0364109/660	7s	13ms/step	-	loss:	3.9311e-04	- mae:
0.0364113/660	7s	13ms/step	-	loss:	3.9349e-04	- mae:
0.0364118/660	6s	13ms/step	-	loss:	3.9384e-04	- mae:
0.0365124/660	6s	13ms/step	-	loss:	3.9455e-04	- mae:
0.0366130/660	6s	13ms/step	-	loss:	3.9544e-04	- mae:
0.0367136/660	6s	12ms/step	-	loss:	3.9602e-04	- mae:
0.0367142/660	6s	12ms/step	-	loss:	3.9653e-04	- mae:
0.0368148/660	6s	12ms/step	-	loss:	3.9686e-04	- mae:
0.0368155/660	5s	12ms/step	-	loss:	3.9712e-04	- mae:
0.0368162/660	5s	12ms/step	-	loss:	3.9731e-04	- mae:
0.0368168/660	5s	12ms/step	-	loss:	3.9730e-04	- mae:

Battery SoC Estimation Project Report

5s 0.0368175/660	12ms/step	-	loss:	3.9727e-04	-	mae:
5s 0.0368182/660	11ms/step	-	loss:	3.9730e-04	-	mae:
5s 0.0368188/660	11ms/step	-	loss:	3.9715e-04	-	mae:
5s 0.0368194/660	11ms/step	-	loss:	3.9697e-04	-	mae:
5s 0.0368201/660	11ms/step	-	loss:	3.9685e-04	-	mae:
5s 0.0367208/660	11ms/step	-	loss:	3.9669e-04	-	mae:
4s 0.0367215/660	11ms/step	-	loss:	3.9655e-04	-	mae:
4s 0.0367221/660	11ms/step	-	loss:	3.9641e-04	-	mae:
4s 0.0367227/660	11ms/step	-	loss:	3.9638e-04	-	mae:
4s 0.0367234/660	11ms/step	-	loss:	3.9637e-04	-	mae:
4s 0.0367240/660	11ms/step	-	loss:	3.9636e-04	-	mae:
4s 0.0367246/660	11ms/step	-	loss:	3.9637e-04	-	mae:
4s 0.0367253/660	10ms/step	-	loss:	3.9635e-04	-	mae:
4s 0.0367260/660	10ms/step	-	loss:	3.9633e-04	-	mae:
4s 0.0367267/660	10ms/step	-	loss:	3.9637e-04	-	mae:
4s 0.0367274/660	10ms/step	-	loss:	3.9639e-04	-	mae:
3s 0.0367281/660	10ms/step	-	loss:	3.9647e-04	-	mae:
3s 0.0367288/660	10ms/step	-	loss:	3.9653e-04	-	mae:
3s 0.0367295/660	10ms/step	-	loss:	3.9653e-04	-	mae:
3s 0.0367301/660	10ms/step	-	loss:	3.9652e-04	-	mae:
3s 0.0367308/660	10ms/step	-	loss:	3.9651e-04	-	mae:
3s 0.0367314/660	10ms/step	-	loss:	3.9652e-04	-	mae:
3s 0.0367320/660	10ms/step	-	loss:	3.9652e-04	-	mae:
3s 0.0367326/660	10ms/step	-	loss:	3.9653e-04	-	mae:
3s 0.0367333/660	10ms/step	-	loss:	3.9653e-04	-	mae:
3s 0.0367340/660	10ms/step	-	loss:	3.9653e-04	-	mae:
3s 0.0367346/660	10ms/step	-	loss:	3.9646e-04	-	mae:
3s 0.0367352/660	10ms/step	-	loss:	3.9640e-04	-	mae:
2s 0.0367359/660	10ms/step	-	loss:	3.9624e-04	-	mae:
2s 0.0367365/660	10ms/step	-	loss:	3.9616e-04	-	mae:
2s 0.0367371/660	10ms/step	-	loss:	3.9606e-04	-	mae:
2s 0.0367378/660	10ms/step	-	loss:	3.9593e-04	-	mae:
2s 0.0367385/660	10ms/step	-	loss:	3.9593e-04	-	mae:

Battery SoC Estimation Project Report						
2s	10ms/step	-	loss:	3.9581e-04	-	mae:
0.0366392/660						
2s	10ms/step	-	loss:	3.9568e-04	-	mae:
0.0366399/660						
2s	10ms/step	-	loss:	3.9552e-04	-	mae:
0.0366406/660						
2s	10ms/step	-	loss:	3.9534e-04	-	mae:
0.0366413/660						
2s	10ms/step	-	loss:	3.9514e-04	-	mae:
0.0366418/660						
2s	10ms/step	-	loss:	3.9498e-04	-	mae:
0.0366425/660						
2s	10ms/step	-	loss:	3.9479e-04	-	mae:
0.0365432/660						
2s	10ms/step	-	loss:	3.9461e-04	-	mae:
0.0365439/660						
2s	10ms/step	-	loss:	3.9443e-04	-	mae:
0.0365444/660						
2s	10ms/step	-	loss:	3.9431e-04	-	mae:
0.0365450/660						
1s	10ms/step	-	loss:	3.9417e-04	-	mae:
0.0365456/660						
1s	9ms/step	-	loss:	3.9403e-04	-	mae: 0.0365
463/660						
1s	9ms/step	-	loss:	3.9387e-04	-	mae:
0.0365470/660						
1s	9ms/step	-	loss:	3.9371e-04	-	mae:
0.0364477/660						
1s	9ms/step	-	loss:	3.9354e-04	-	mae:
0.0364484/660						
1s	9ms/step	-	loss:	3.9336e-04	-	mae:
0.0364490/660						
1s	9ms/step	-	loss:	3.9318e-04	-	mae:
0.0364496/660						
1s	9ms/step	-	loss:	3.9301e-04	-	mae:
0.0364503/660						
1s	9ms/step	-	loss:	3.9282e-04	-	mae:
0.0364510/660						
1s	9ms/step	-	loss:	3.9264e-04	-	mae:
0.0363517/660						
1s	9ms/step	-	loss:	3.9246e-04	-	mae:
0.0363524/660						
1s	9ms/step	-	loss:	3.9227e-04	-	mae:
0.0363531/660						
1s	9ms/step	-	loss:	3.9207e-04	-	mae:
0.0363537/660						
1s	9ms/step	-	loss:	3.9189e-04	-	mae:
0.0363544/660						
1s	9ms/step	-	loss:	3.9169e-04	-	mae:
0.0363551/660						
1s	9ms/step	-	loss:	3.9150e-04	-	mae:
0.0362557/660						
0s	9ms/step	-	loss:	3.9135e-04	-	mae:
0.0362564/660						
0s	9ms/step	-	loss:	3.9117e-04	-	mae:
0.0362570/660						
0s	9ms/step	-	loss:	3.9103e-04	-	mae:
0.0362577/660						
0s	9ms/step	-	loss:	3.9086e-04	-	mae:
0.0362584/660						
0s	9ms/step	-	loss:	3.9068e-04	-	mae:
0.0362590/660						
0s	9ms/step	-	loss:	3.9052e-04	-	mae:
0.0361597/660						
0s	9ms/step	-	loss:	3.9034e-04	-	mae:
0.0361604/660						

Battery SoC Estimation Project Report

0s 0.0361610/660	9ms/step	-	loss:	3.9017e-04	-	mae:	
0s 0.0361615/660	9ms/step	-	loss:	3.9003e-04	-	mae:	
0s 0.0361622/660	9ms/step	-	loss:	3.8991e-04	-	mae:	
0s 0.0361629/660	9ms/step	-	loss:	3.8974e-04	-	mae:	
0s 0.0361636/660	9ms/step	-	loss:	3.8958e-04	-	mae:	
0s 0.0360643/660	9ms/step	-	loss:	3.8944e-04	-	mae:	
0s 0.0360650/660	9ms/step	-	loss:	3.8930e-04	-	mae:	
0s 0.0360656/660	9ms/step	-	loss:	3.8915e-04	-	mae:	
0s 0.0360660/660	9ms/step	-	loss:	3.8902e-04	-	mae:	
11s 10ms/step - loss: 3.8891e-04 - mae: 0.0360 - val_loss: 2.8772e-04 - val_mae: 0.0260							
Epoch 23/200							
1/660 0.0253	6/660 7s	38:36	4s/step	-	loss: 2.8003e-04	-	mae:
12ms/step 11/660				loss: 2.5946e-04	-	mae: 0.0233	
12ms/step 16/660				loss: 2.7949e-04	-	mae:	
12ms/step 21/660				loss: 2.9649e-04	-	mae:	
12ms/step 26/660				loss: 3.0910e-04	-	mae:	
12ms/step 31/660				loss: 3.1948e-04	-	mae:	
11ms/step 37/660				loss: 3.2663e-04	-	mae:	
11ms/step 44/660				loss: 3.3495e-04	-	mae:	
10ms/step 51/660				loss: 3.4822e-04	-	mae:	
10ms/step 56/660				loss: 3.5944e-04	-	mae:	
10ms/step 62/660				loss: 3.6622e-04	-	mae:	
10ms/step 68/660				loss: 3.7277e-04	-	mae:	
10ms/step 74/660				loss: 3.7724e-04	-	mae:	
10ms/step 80/660				loss: 3.8083e-04	-	mae:	
10ms/step 87/660				loss: 3.8365e-04	-	mae:	
10ms/step 94/660				loss: 3.8651e-04	-	mae:	
10ms/step 0.0361100/660				loss: 3.8869e-04	-	mae:	
10ms/step 0.0362107/660				loss: 3.9010e-04	-	mae:	
9ms/step 114/660				loss: 3.9156e-04	-	mae: 0.0364	
9ms/step 0.0365120/660				loss: 3.9268e-04	-	mae:	
9ms/step 0.0366126/660				loss: 3.9385e-04	-	mae:	
9ms/step 0.0367132/660				loss: 3.9497e-04	-	mae:	
9ms/step 0.0368138/660				loss: 3.9574e-04	-	mae:	

Battery SoC Estimation Project Report

4s 0.0369143/660	9ms/step	-	loss:	3.9636e-04	-	mae:
4s 0.0369147/660	9ms/step	-	loss:	3.9674e-04	-	mae:
4s 0.0369152/660	9ms/step	-	loss:	3.9699e-04	-	mae:
4s 0.0369157/660	10ms/step	-	loss:	3.9724e-04	-	mae:
4s 0.0370161/660	10ms/step	-	loss:	3.9741e-04	-	mae:
4s 0.0370165/660	10ms/step	-	loss:	3.9747e-04	-	mae:
4s 0.0370170/660	10ms/step	-	loss:	3.9746e-04	-	mae:
4s 0.0370175/660	10ms/step	-	loss:	3.9752e-04	-	mae:
4s 0.0370179/660	10ms/step	-	loss:	3.9752e-04	-	mae:
4s 0.0370184/660	10ms/step	-	loss:	3.9744e-04	-	mae:
4s 0.0370189/660	10ms/step	-	loss:	3.9727e-04	-	mae:
4s 0.0369194/660	10ms/step	-	loss:	3.9710e-04	-	mae:
4s 0.0369199/660	10ms/step	-	loss:	3.9696e-04	-	mae:
4s 0.0369204/660	10ms/step	-	loss:	3.9682e-04	-	mae:
4s 0.0369209/660	10ms/step	-	loss:	3.9668e-04	-	mae:
4s 0.0369213/660	10ms/step	-	loss:	3.9655e-04	-	mae:
4s 0.0369218/660	10ms/step	-	loss:	3.9643e-04	-	mae:
4s 0.0369223/660	10ms/step	-	loss:	3.9638e-04	-	mae:
4s 0.0369228/660	10ms/step	-	loss:	3.9639e-04	-	mae:
4s 0.0369233/660	10ms/step	-	loss:	3.9641e-04	-	mae:
4s 0.0369237/660	10ms/step	-	loss:	3.9645e-04	-	mae:
4s 0.0369242/660	10ms/step	-	loss:	3.9649e-04	-	mae:
4s 0.0369247/660	10ms/step	-	loss:	3.9660e-04	-	mae:
4s 0.0369252/660	10ms/step	-	loss:	3.9670e-04	-	mae:
4s 0.0369256/660	10ms/step	-	loss:	3.9679e-04	-	mae:
4s 0.0369260/660	10ms/step	-	loss:	3.9684e-04	-	mae:
4s 0.0370264/660	10ms/step	-	loss:	3.9691e-04	-	mae:
4s 0.0370269/660	11ms/step	-	loss:	3.9701e-04	-	mae:
4s 0.0370273/660	11ms/step	-	loss:	3.9712e-04	-	mae:
4s 0.0370278/660	11ms/step	-	loss:	3.9721e-04	-	mae:
4s 0.0370283/660	11ms/step	-	loss:	3.9732e-04	-	mae:
4s 0.0370287/660	11ms/step	-	loss:	3.9737e-04	-	mae:
3s 0.0370292/660	11ms/step	-	loss:	3.9739e-04	-	mae:

Battery SoC Estimation Project Report

0.0370297/660	3s	11ms/step	-	loss:	3.9742e-04	-	mae:
0.0370301/660	3s	11ms/step	-	loss:	3.9743e-04	-	mae:
0.0370306/660	3s	11ms/step	-	loss:	3.9743e-04	-	mae:
0.0370310/660	3s	11ms/step	-	loss:	3.9745e-04	-	mae:
0.0370314/660	3s	11ms/step	-	loss:	3.9745e-04	-	mae:
0.0370318/660	3s	11ms/step	-	loss:	3.9747e-04	-	mae:
0.0370323/660	3s	11ms/step	-	loss:	3.9749e-04	-	mae:
0.0370330/660	3s	11ms/step	-	loss:	3.9750e-04	-	mae:
0.0370337/660	3s	11ms/step	-	loss:	3.9753e-04	-	mae:
0.0370343/660	3s	11ms/step	-	loss:	3.9752e-04	-	mae:
0.0370349/660	3s	11ms/step	-	loss:	3.9749e-04	-	mae:
0.0370355/660	3s	11ms/step	-	loss:	3.9744e-04	-	mae:
0.0370362/660	3s	11ms/step	-	loss:	3.9738e-04	-	mae:
0.0370369/660	3s	11ms/step	-	loss:	3.9728e-04	-	mae:
0.0370375/660	2s	11ms/step	-	loss:	3.9717e-04	-	mae:
0.0370380/660	2s	11ms/step	-	loss:	3.9705e-04	-	mae:
0.0370387/660	2s	10ms/step	-	loss:	3.9694e-04	-	mae:
0.0369394/660	2s	10ms/step	-	loss:	3.9661e-04	-	mae:
0.0369401/660	2s	10ms/step	-	loss:	3.9641e-04	-	mae:
0.0369407/660	2s	10ms/step	-	loss:	3.9621e-04	-	mae:
0.0369414/660	2s	10ms/step	-	loss:	3.9598e-04	-	mae:
0.0369421/660	2s	10ms/step	-	loss:	3.9573e-04	-	mae:
0.0368428/660	2s	10ms/step	-	loss:	3.9549e-04	-	mae:
0.0368435/660	2s	10ms/step	-	loss:	3.9525e-04	-	mae:
0.0368442/660	2s	10ms/step	-	loss:	3.9501e-04	-	mae:
0.0368449/660	2s	10ms/step	-	loss:	3.9478e-04	-	mae:
0.0368456/660	2s	10ms/step	-	loss:	3.9457e-04	-	mae:
0.0367463/660	1s	10ms/step	-	loss:	3.9436e-04	-	mae:
0.0367470/660	1s	10ms/step	-	loss:	3.9417e-04	-	mae:
0.0367475/660	1s	10ms/step	-	loss:	3.9402e-04	-	mae:
0.0367481/660	1s	10ms/step	-	loss:	3.9383e-04	-	mae:
0.0367487/660	1s	10ms/step	-	loss:	3.9362e-04	-	mae:
0.0367493/660							

Battery SoC Estimation Project Report

0.0366499/660	1s	10ms/step	-	loss:	3.9341e-04	-	mae:
0.0366505/660	1s	10ms/step	-	loss:	3.9320e-04	-	mae:
0.0366511/660	1s	10ms/step	-	loss:	3.9300e-04	-	mae:
0.0366517/660	1s	10ms/step	-	loss:	3.9281e-04	-	mae:
0.0366523/660	1s	10ms/step	-	loss:	3.9262e-04	-	mae:
0.0366530/660	1s	10ms/step	-	loss:	3.9241e-04	-	mae:
0.0366536/660	1s	10ms/step	-	loss:	3.9216e-04	-	mae:
0.0366542/660	1s	10ms/step	-	loss:	3.9172e-04	-	mae:
0.0366548/660	1s	10ms/step	-	loss:	3.9151e-04	-	mae:
0.0366554/660	1s	10ms/step	-	loss:	3.9131e-04	-	mae:
0.0364561/660	0s	10ms/step	-	loss:	3.9107e-04	-	mae:
0.0364568/660	0s	10ms/step	-	loss:	3.9084e-04	-	mae:
0.0364575/660	0s	10ms/step	-	loss:	3.9061e-04	-	mae:
0.0364582/660	0s	10ms/step	-	loss:	3.9038e-04	-	mae:
0.0364589/660	0s	10ms/step	-	loss:	3.9015e-04	-	mae:
0.0363595/660	0s	10ms/step	-	loss:	3.8996e-04	-	mae:
0.0363602/660	0s	10ms/step	-	loss:	3.8973e-04	-	mae:
0.0363608/660	0s	10ms/step	-	loss:	3.8955e-04	-	mae:
0.0363615/660	0s	10ms/step	-	loss:	3.8934e-04	-	mae:
0.0363622/660	0s	10ms/step	-	loss:	3.8913e-04	-	mae:
0.0362629/660	0s	10ms/step	-	loss:	3.8892e-04	-	mae:
0.0362636/660	0s	10ms/step	-	loss:	3.8873e-04	-	mae:
0.0362642/660	0s	10ms/step	-	loss:	3.8857e-04	-	mae:
0.0362649/660	0s	10ms/step	-	loss:	3.8837e-04	-	mae:
0.0362656/660	0s	10ms/step	-	loss:	3.8817e-04	-	mae:
0.0361660/660							

10s 10ms/step - loss: 3.8803e-04 - mae: 0.0361 - val_loss: 3.9938e-04 - val_mae: 0.0379

Epoch 24/200

0.0393	1/660	38:12	3s/step	-	loss:	4.1068e-04	-	mae:
	6/660							
7s	12ms/step	-	loss:	3.5676e-04	-	mae:	0.0337	
	11/660							
0.0339	16/660	7s	12ms/step	-	loss:	3.5924e-04	-	mae:
		7s	12ms/step	-	loss:	3.6337e-04	-	mae:
0.0343	21/660	7s	11ms/step	-	loss:	3.6798e-04	-	mae:
0.0347	26/660	7s	11ms/step	-	loss:	3.7228e-04	-	mae:
0.0351	32/660							

Battery SoC Estimation Project Report

0.0352	6s	11ms/step	-	loss:	3.7450e-04	-	mae:
	38/660						
0.0356	6s	11ms/step	-	loss:	3.7851e-04	-	mae:
	45/660						
0.0363	6s	10ms/step	-	loss:	3.8568e-04	-	mae:
	52/660						
0.0369	5s	10ms/step	-	loss:	3.9161e-04	-	mae:
	59/660						
0.0373	5s	10ms/step	-	loss:	3.9644e-04	-	mae:
	66/660						
	5s	9ms/step	-	loss:	3.9946e-04	-	mae: 0.0376
	72/660						
0.0378	5s	9ms/step	-	loss:	4.0141e-04	-	mae:
	77/660						
0.0379	5s	9ms/step	-	loss:	4.0247e-04	-	mae:
	83/660						
0.0380	5s	9ms/step	-	loss:	4.0363e-04	-	mae:
	89/660						
0.0380	5s	9ms/step	-	loss:	4.0428e-04	-	mae:
	95/660						
0.0380102/660	5s	9ms/step	-	loss:	4.0476e-04	-	mae:
	5s	9ms/step	-	loss:	4.0492e-04	-	mae:
0.0380108/660	5s	9ms/step	-	loss:	4.0503e-04	-	mae:
0.0380114/660	5s	9ms/step	-	loss:	4.0512e-04	-	mae:
0.0380120/660	4s	9ms/step	-	loss:	4.0545e-04	-	mae:
0.0381126/660	4s	9ms/step	-	loss:	4.0580e-04	-	mae:
0.0381132/660	4s	9ms/step	-	loss:	4.0595e-04	-	mae:
0.0381138/660	4s	9ms/step	-	loss:	4.0607e-04	-	mae:
0.0381144/660	4s	9ms/step	-	loss:	4.0612e-04	-	mae:
0.0381151/660	4s	9ms/step	-	loss:	4.0611e-04	-	mae:
0.0381157/660	4s	9ms/step	-	loss:	4.0599e-04	-	mae:
0.0381164/660	4s	9ms/step	-	loss:	4.0568e-04	-	mae:
0.0381171/660	4s	9ms/step	-	loss:	4.0544e-04	-	mae:
0.0380178/660	4s	9ms/step	-	loss:	4.0508e-04	-	mae:
0.0380185/660	4s	9ms/step	-	loss:	4.0450e-04	-	mae:
0.0379191/660	4s	9ms/step	-	loss:	4.0406e-04	-	mae:
0.0379196/660	4s	9ms/step	-	loss:	4.0370e-04	-	mae:
0.0379202/660	4s	9ms/step	-	loss:	4.0324e-04	-	mae:
0.0378209/660	3s	9ms/step	-	loss:	4.0275e-04	-	mae:
0.0378216/660	3s	9ms/step	-	loss:	4.0230e-04	-	mae:
0.0377223/660	3s	9ms/step	-	loss:	4.0199e-04	-	mae:
0.0377229/660	3s	9ms/step	-	loss:	4.0176e-04	-	mae:
0.0376236/660	3s	9ms/step	-	loss:	4.0150e-04	-	mae:
0.0376243/660							

Battery SoC Estimation Project Report

3s 0.0376250/660	9ms/step	-	loss:	4.0127e-04	-	mae:
3s 0.0376257/660	9ms/step	-	loss:	4.0101e-04	-	mae:
3s 0.0375264/660	9ms/step	-	loss:	4.0071e-04	-	mae:
3s 0.0375271/660	9ms/step	-	loss:	4.0049e-04	-	mae:
3s 0.0375278/660	9ms/step	-	loss:	4.0030e-04	-	mae:
3s 0.0375285/660	9ms/step	-	loss:	4.0013e-04	-	mae:
3s 0.0375292/660	9ms/step	-	loss:	3.9990e-04	-	mae:
3s 0.0374299/660	9ms/step	-	loss:	3.9940e-04	-	mae:
3s 0.0374306/660	9ms/step	-	loss:	3.9917e-04	-	mae:
2s 0.0374320/660	9ms/step	-	loss:	3.9895e-04	-	mae:
2s 0.0373325/660	9ms/step	-	loss:	3.9872e-04	-	mae:
2s 0.0373332/660	9ms/step	-	loss:	3.9857e-04	-	mae:
2s 0.0373339/660	9ms/step	-	loss:	3.9835e-04	-	mae:
2s 0.0373346/660	9ms/step	-	loss:	3.9812e-04	-	mae:
2s 0.0372352/660	9ms/step	-	loss:	3.9788e-04	-	mae:
2s 0.0372359/660	9ms/step	-	loss:	3.9765e-04	-	mae:
2s 0.0372366/660	9ms/step	-	loss:	3.9738e-04	-	mae:
2s 0.0372373/660	9ms/step	-	loss:	3.9712e-04	-	mae:
2s 0.0371380/660	9ms/step	-	loss:	3.9684e-04	-	mae:
2s 0.0371386/660	8ms/step	-	loss:	3.9655e-04	-	mae:
2s 0.0371391/660	9ms/step	-	loss:	3.9630e-04	-	mae:
2s 0.0371395/660	9ms/step	-	loss:	3.9608e-04	-	mae:
2s 0.0370400/660	9ms/step	-	loss:	3.9590e-04	-	mae:
2s 0.0370405/660	9ms/step	-	loss:	3.9565e-04	-	mae:
2s 0.0370410/660	9ms/step	-	loss:	3.9539e-04	-	mae:
2s 0.0370415/660	9ms/step	-	loss:	3.9513e-04	-	mae:
2s 0.0369420/660	9ms/step	-	loss:	3.9485e-04	-	mae:
2s 0.0369425/660	9ms/step	-	loss:	3.9458e-04	-	mae:
2s 0.0369429/660	9ms/step	-	loss:	3.9432e-04	-	mae:
2s 0.0369433/660	9ms/step	-	loss:	3.9411e-04	-	mae:
2s 0.0368437/660	9ms/step	-	loss:	3.9390e-04	-	mae:
1s 0.0368442/660	9ms/step	-	loss:	3.9370e-04	-	mae:

Battery SoC Estimation Project Report

0.0368447/660	1s	9ms/step	-	loss:	3.9345e-04	-	mae:
0.0368452/660	1s	9ms/step	-	loss:	3.9319e-04	-	mae:
0.0368457/660	1s	9ms/step	-	loss:	3.9295e-04	-	mae:
0.0367461/660	1s	9ms/step	-	loss:	3.9272e-04	-	mae:
0.0367465/660	1s	9ms/step	-	loss:	3.9254e-04	-	mae:
0.0367470/660	1s	9ms/step	-	loss:	3.9236e-04	-	mae:
0.0367475/660	1s	9ms/step	-	loss:	3.9215e-04	-	mae:
0.0367480/660	1s	9ms/step	-	loss:	3.9193e-04	-	mae:
0.0366485/660	1s	9ms/step	-	loss:	3.9170e-04	-	mae:
0.0366489/660	1s	9ms/step	-	loss:	3.9147e-04	-	mae:
0.0366494/660	1s	9ms/step	-	loss:	3.9128e-04	-	mae:
0.0366499/660	1s	9ms/step	-	loss:	3.9104e-04	-	mae:
0.0365504/660	1s	9ms/step	-	loss:	3.9059e-04	-	mae:
0.0365508/660	1s	9ms/step	-	loss:	3.9042e-04	-	mae:
0.0365512/660	1s	9ms/step	-	loss:	3.9024e-04	-	mae:
0.0365516/660	1s	9ms/step	-	loss:	3.9007e-04	-	mae:
0.0365520/660	1s	9ms/step	-	loss:	3.8989e-04	-	mae:
0.0365525/660	1s	10ms/step	-	loss:	3.8966e-04	-	mae:
0.0364530/660	1s	10ms/step	-	loss:	3.8943e-04	-	mae:
0.0364535/660	1s	10ms/step	-	loss:	3.8919e-04	-	mae:
0.0364539/660	1s	10ms/step	-	loss:	3.8900e-04	-	mae:
0.0364543/660	1s	10ms/step	-	loss:	3.8881e-04	-	mae:
0.0364548/660	1s	10ms/step	-	loss:	3.8859e-04	-	mae:
0.0363552/660	1s	10ms/step	-	loss:	3.8841e-04	-	mae:
0.0363556/660	1s	10ms/step	-	loss:	3.8824e-04	-	mae:
0.0363560/660	0s	10ms/step	-	loss:	3.8807e-04	-	mae:
0.0363564/660	0s	10ms/step	-	loss:	3.8790e-04	-	mae:
0.0363568/660	0s	10ms/step	-	loss:	3.8773e-04	-	mae:
0.0362573/660	0s	10ms/step	-	loss:	3.8752e-04	-	mae:
0.0362579/660	0s	10ms/step	-	loss:	3.8728e-04	-	mae:
0.0362585/660	0s	10ms/step	-	loss:	3.8703e-04	-	mae:
0.0362592/660	0s	10ms/step	-	loss:	3.8675e-04	-	mae:
0.0362599/660							

Battery SoC Estimation Project Report

0s 0.0361605/660	10ms/step	-	loss:	3.8647e-04	-	mae:	
0s 0.0361612/660	10ms/step	-	loss:	3.8624e-04	-	mae:	
0s 0.0361617/660	10ms/step	-	loss:	3.8599e-04	-	mae:	
0s 0.0361624/660	10ms/step	-	loss:	3.8581e-04	-	mae:	
0s 0.0360631/660	10ms/step	-	loss:	3.8556e-04	-	mae:	
0s 0.0360637/660	10ms/step	-	loss:	3.8532e-04	-	mae:	
0s 0.0360644/660	10ms/step	-	loss:	3.8512e-04	-	mae:	
0s 0.0360651/660	10ms/step	-	loss:	3.8490e-04	-	mae:	
0s 0.0359658/660	10ms/step	-	loss:	3.8467e-04	-	mae:	
0s 0.0359660/660	10ms/step	-	loss:	3.8445e-04	-	mae:	
11s 11ms/step - loss: 3.8435e-04 - mae: 0.0359 - val_loss: 2.7947e-04 - val_mae: 0.0257							
Epoch 25/200							
1/660 0.0286	16s 8/660	25ms/step	-	loss:	3.0641e-04	-	mae:
5s 15/660	8ms/step	-	loss:	2.8542e-04	-	mae: 0.0264	
5s 22/660	8ms/step	-	loss:	3.1024e-04	-	mae:	
5s 29/660	8ms/step	-	loss:	3.2214e-04	-	mae:	
5s 35/660	8ms/step	-	loss:	3.3145e-04	-	mae:	
5s 42/660	8ms/step	-	loss:	3.3769e-04	-	mae:	
5s 49/660	8ms/step	-	loss:	3.4743e-04	-	mae:	
4s 56/660	8ms/step	-	loss:	3.5640e-04	-	mae:	
4s 63/660	8ms/step	-	loss:	3.6395e-04	-	mae:	
4s 69/660	8ms/step	-	loss:	3.7025e-04	-	mae:	
4s 75/660	8ms/step	-	loss:	3.7425e-04	-	mae:	
4s 82/660	8ms/step	-	loss:	3.7743e-04	-	mae:	
4s 89/660	8ms/step	-	loss:	3.8060e-04	-	mae:	
4s 95/660	8ms/step	-	loss:	3.8309e-04	-	mae:	
4s 0.0361102/660	8ms/step	-	loss:	3.8470e-04	-	mae:	
4s 0.0362109/660	8ms/step	-	loss:	3.8597e-04	-	mae:	
4s 0.0363114/660	8ms/step	-	loss:	3.8689e-04	-	mae:	
4s 0.0364121/660	8ms/step	-	loss:	3.8744e-04	-	mae:	
4s 0.0365128/660	8ms/step	-	loss:	3.8839e-04	-	mae:	
4s 0.0365134/660	8ms/step	-	loss:	3.8908e-04	-	mae:	
4s 0.0366141/660	8ms/step	-	loss:	3.8943e-04	-	mae:	
4s 0.0366148/660	8ms/step	-	loss:	3.8966e-04	-	mae:	

Battery SoC Estimation Project Report						
4s	8ms/step	-	loss:	3.8978e-04	-	mae:
0.0366155/660						
4s	8ms/step	-	loss:	3.8975e-04	-	mae:
0.0366162/660						
4s	8ms/step	-	loss:	3.8955e-04	-	mae:
0.0366168/660						
4s	8ms/step	-	loss:	3.8934e-04	-	mae:
0.0365175/660						
3s	8ms/step	-	loss:	3.8922e-04	-	mae:
0.0365182/660						
3s	8ms/step	-	loss:	3.8896e-04	-	mae:
0.0365189/660						
3s	8ms/step	-	loss:	3.8869e-04	-	mae:
0.0365196/660						
3s	8ms/step	-	loss:	3.8849e-04	-	mae:
0.0365203/660						
3s	8ms/step	-	loss:	3.8831e-04	-	mae:
0.0364210/660						
3s	8ms/step	-	loss:	3.8818e-04	-	mae:
0.0364216/660						
3s	8ms/step	-	loss:	3.8815e-04	-	mae:
0.0364223/660						
3s	8ms/step	-	loss:	3.8825e-04	-	mae:
0.0364230/660						
3s	8ms/step	-	loss:	3.8840e-04	-	mae:
0.0364237/660						
3s	8ms/step	-	loss:	3.8856e-04	-	mae:
0.0365242/660						
3s	8ms/step	-	loss:	3.8869e-04	-	mae:
0.0365249/660						
3s	8ms/step	-	loss:	3.8884e-04	-	mae:
0.0365256/660						
3s	8ms/step	-	loss:	3.8893e-04	-	mae:
0.0365263/660						
3s	8ms/step	-	loss:	3.8903e-04	-	mae:
0.0365270/660						
3s	8ms/step	-	loss:	3.8915e-04	-	mae:
0.0365277/660						
3s	8ms/step	-	loss:	3.8927e-04	-	mae:
0.0365284/660						
3s	8ms/step	-	loss:	3.8933e-04	-	mae:
0.0365291/660						
2s	8ms/step	-	loss:	3.8935e-04	-	mae:
0.0365298/660						
2s	8ms/step	-	loss:	3.8935e-04	-	mae:
0.0365305/660						
2s	8ms/step	-	loss:	3.8935e-04	-	mae:
0.0365312/660						
2s	8ms/step	-	loss:	3.8934e-04	-	mae:
0.0365319/660						
2s	8ms/step	-	loss:	3.8932e-04	-	mae:
0.0365325/660						
2s	8ms/step	-	loss:	3.8929e-04	-	mae:
0.0365332/660						
2s	8ms/step	-	loss:	3.8925e-04	-	mae:
0.0365339/660						
2s	8ms/step	-	loss:	3.8917e-04	-	mae:
0.0365346/660						
2s	8ms/step	-	loss:	3.8907e-04	-	mae:
0.0365353/660						
2s	8ms/step	-	loss:	3.8895e-04	-	mae:
0.0365360/660						
2s	8ms/step	-	loss:	3.8879e-04	-	mae:
0.0365366/660						
2s	8ms/step	-	loss:	3.8866e-04	-	mae:
0.0365370/660						

Battery SoC Estimation Project Report						
0.0364377/660	2s	8ms/step	-	loss:	3.8855e-04	- mae:
0.0364384/660	2s	8ms/step	-	loss:	3.8836e-04	- mae:
0.0364391/660	2s	8ms/step	-	loss:	3.8817e-04	- mae:
0.0364398/660	2s	8ms/step	-	loss:	3.8796e-04	- mae:
0.0364405/660	2s	8ms/step	-	loss:	3.8773e-04	- mae:
0.0363412/660	2s	8ms/step	-	loss:	3.8745e-04	- mae:
0.0363419/660	1s	8ms/step	-	loss:	3.8717e-04	- mae:
0.0363426/660	1s	8ms/step	-	loss:	3.8686e-04	- mae:
0.0362432/660	1s	8ms/step	-	loss:	3.8658e-04	- mae:
0.0362439/660	1s	8ms/step	-	loss:	3.8634e-04	- mae:
0.0362445/660	1s	8ms/step	-	loss:	3.8607e-04	- mae:
0.0362452/660	1s	8ms/step	-	loss:	3.8583e-04	- mae:
0.0362459/660	1s	8ms/step	-	loss:	3.8556e-04	- mae:
0.0361466/660	1s	8ms/step	-	loss:	3.8531e-04	- mae:
0.0361473/660	1s	8ms/step	-	loss:	3.8506e-04	- mae:
0.0361479/660	1s	8ms/step	-	loss:	3.8481e-04	- mae:
0.0361485/660	1s	8ms/step	-	loss:	3.8458e-04	- mae:
0.0360491/660	1s	8ms/step	-	loss:	3.8433e-04	- mae:
0.0360496/660	1s	8ms/step	-	loss:	3.8408e-04	- mae:
0.0360502/660	1s	8ms/step	-	loss:	3.8387e-04	- mae:
0.0360509/660	1s	8ms/step	-	loss:	3.8362e-04	- mae:
0.0359515/660	1s	8ms/step	-	loss:	3.8335e-04	- mae:
0.0359521/660	1s	8ms/step	-	loss:	3.8311e-04	- mae:
0.0359527/660	1s	8ms/step	-	loss:	3.8286e-04	- mae:
0.0359534/660	1s	8ms/step	-	loss:	3.8260e-04	- mae:
0.0358541/660	0s	8ms/step	-	loss:	3.8229e-04	- mae:
0.0358548/660	0s	8ms/step	-	loss:	3.8197e-04	- mae:
0.0358555/660	0s	8ms/step	-	loss:	3.8167e-04	- mae:
0.0357561/660	0s	8ms/step	-	loss:	3.8139e-04	- mae:
0.0357567/660	0s	8ms/step	-	loss:	3.8114e-04	- mae:
0.0357573/660	0s	8ms/step	-	loss:	3.8091e-04	- mae:
0.0357580/660	0s	8ms/step	-	loss:	3.8067e-04	- mae:
0.0357587/660	0s	8ms/step	-	loss:	3.8040e-04	- mae:

Battery SoC Estimation Project Report

0s	8ms/step	-	loss:	3.8012e-04	-	mae:
0.0356594/660						
0s	8ms/step	-	loss:	3.7986e-04	-	mae:
0.0356600/660						
0s	8ms/step	-	loss:	3.7964e-04	-	mae:
0.0356607/660						
0s	8ms/step	-	loss:	3.7939e-04	-	mae:
0.0356614/660						
0s	8ms/step	-	loss:	3.7915e-04	-	mae:
0.0355619/660						
0s	8ms/step	-	loss:	3.7898e-04	-	mae:
0.0355626/660						
0s	8ms/step	-	loss:	3.7874e-04	-	mae:
0.0355632/660						
0s	8ms/step	-	loss:	3.7855e-04	-	mae:
0.0355638/660						
0s	8ms/step	-	loss:	3.7837e-04	-	mae:
0.0355645/660						
0s	8ms/step	-	loss:	3.7816e-04	-	mae:
0.0354652/660						
0s	8ms/step	-	loss:	3.7795e-04	-	mae:
0.0354659/660						
0s	8ms/step	-	loss:	3.7774e-04	-	mae:
0.0354660/660						
6s 9ms/step - loss: 3.7768e-04 - mae: 0.0354 - val_loss: 2.7375e-04 - val_mae: 0.0254						
Epoch 26/200						
	1/660	47:41	4s/step	-	loss:	2.7262e-04
0.0254	5/660				-	mae:
8s	13ms/step	-	loss:	2.5887e-04	-	mae:
	10/660					
8s	12ms/step	-	loss:	2.6230e-04	-	mae:
0.0243	15/660					
7s	12ms/step	-	loss:	2.7564e-04	-	mae:
0.0256	20/660					
7s	12ms/step	-	loss:	2.8588e-04	-	mae:
0.0266	25/660					
7s	12ms/step	-	loss:	2.9541e-04	-	mae:
0.0276	31/660					
7s	12ms/step	-	loss:	3.0217e-04	-	mae:
0.0282	37/660					
6s	11ms/step	-	loss:	3.0915e-04	-	mae:
0.0289	43/660					
6s	11ms/step	-	loss:	3.1864e-04	-	mae:
0.0298	49/660					
6s	11ms/step	-	loss:	3.2615e-04	-	mae:
0.0306	56/660					
6s	10ms/step	-	loss:	3.3384e-04	-	mae:
0.0313	62/660					
6s	10ms/step	-	loss:	3.3928e-04	-	mae:
0.0319	69/660					
5s	10ms/step	-	loss:	3.4365e-04	-	mae:
0.0323	76/660					
5s	10ms/step	-	loss:	3.4713e-04	-	mae:
0.0326	83/660					
5s	10ms/step	-	loss:	3.5013e-04	-	mae:
0.0329	90/660					
5s	9ms/step	-	loss:	3.5222e-04	-	mae:
	97/660					
5s	9ms/step	-	loss:	3.5406e-04	-	mae:
0.0333104/660						
5s	9ms/step	-	loss:	3.5569e-04	-	mae:
0.0334109/660						
5s	9ms/step	-	loss:	3.5664e-04	-	mae:
0.0335116/660						
5s	9ms/step	-	loss:	3.5799e-04	-	mae:
0.0336122/660						

Battery SoC Estimation Project Report

4s 0.0337129/660	9ms/step	-	loss:	3.5921e-04	-	mae:
4s 0.0339135/660	9ms/step	-	loss:	3.6037e-04	-	mae:
4s 0.0339142/660	9ms/step	-	loss:	3.6113e-04	-	mae:
4s 0.0340149/660	9ms/step	-	loss:	3.6180e-04	-	mae:
4s 0.0340156/660	9ms/step	-	loss:	3.6242e-04	-	mae:
4s 0.0341163/660	9ms/step	-	loss:	3.6295e-04	-	mae:
4s 0.0341169/660	9ms/step	-	loss:	3.6327e-04	-	mae:
4s 0.0341176/660	9ms/step	-	loss:	3.6355e-04	-	mae:
4s 0.0342182/660	9ms/step	-	loss:	3.6387e-04	-	mae:
4s 0.0342189/660	9ms/step	-	loss:	3.6396e-04	-	mae:
4s 0.0342196/660	9ms/step	-	loss:	3.6400e-04	-	mae:
4s 0.0342203/660	9ms/step	-	loss:	3.6409e-04	-	mae:
4s 0.0342210/660	9ms/step	-	loss:	3.6418e-04	-	mae:
3s 0.0342217/660	9ms/step	-	loss:	3.6429e-04	-	mae:
3s 0.0342224/660	9ms/step	-	loss:	3.6445e-04	-	mae:
3s 0.0342231/660	9ms/step	-	loss:	3.6474e-04	-	mae:
3s 0.0343236/660	9ms/step	-	loss:	3.6506e-04	-	mae:
3s 0.0343243/660	9ms/step	-	loss:	3.6528e-04	-	mae:
3s 0.0343250/660	9ms/step	-	loss:	3.6561e-04	-	mae:
3s 0.0343257/660	9ms/step	-	loss:	3.6589e-04	-	mae:
3s 0.0344263/660	9ms/step	-	loss:	3.6610e-04	-	mae:
3s 0.0344270/660	9ms/step	-	loss:	3.6633e-04	-	mae:
3s 0.0344276/660	9ms/step	-	loss:	3.6660e-04	-	mae:
3s 0.0344282/660	9ms/step	-	loss:	3.6684e-04	-	mae:
3s 0.0345289/660	9ms/step	-	loss:	3.6705e-04	-	mae:
3s 0.0345296/660	9ms/step	-	loss:	3.6742e-04	-	mae:
3s 0.0345303/660	9ms/step	-	loss:	3.6760e-04	-	mae:
3s 0.0345309/660	9ms/step	-	loss:	3.6774e-04	-	mae:
2s 0.0345315/660	9ms/step	-	loss:	3.6786e-04	-	mae:
2s 0.0345322/660	9ms/step	-	loss:	3.6800e-04	-	mae:
2s 0.0345329/660	9ms/step	-	loss:	3.6813e-04	-	mae:
2s 0.0346336/660	9ms/step	-	loss:	3.6823e-04	-	mae:
0.0346343/660	9ms/step	-	loss:	3.6823e-04	-	mae:

Battery SoC Estimation Project Report

2s	9ms/step	-	loss:	3.6830e-04	-	mae:
0.0346350/660						
2s	9ms/step	-	loss:	3.6835e-04	-	mae:
0.0346356/660						
2s	9ms/step	-	loss:	3.6838e-04	-	mae:
0.0346361/660						
2s	9ms/step	-	loss:	3.6840e-04	-	mae:
0.0346368/660						
2s	9ms/step	-	loss:	3.6840e-04	-	mae:
0.0346375/660						
2s	9ms/step	-	loss:	3.6837e-04	-	mae:
0.0346382/660						
2s	9ms/step	-	loss:	3.6833e-04	-	mae:
0.0346389/660						
2s	9ms/step	-	loss:	3.6830e-04	-	mae:
0.0346395/660						
2s	9ms/step	-	loss:	3.6824e-04	-	mae:
0.0346401/660						
2s	9ms/step	-	loss:	3.6816e-04	-	mae:
0.0346408/660						
2s	9ms/step	-	loss:	3.6804e-04	-	mae:
0.0346415/660						
2s	9ms/step	-	loss:	3.6790e-04	-	mae:
0.0345422/660						
2s	9ms/step	-	loss:	3.6776e-04	-	mae:
0.0345428/660						
1s	9ms/step	-	loss:	3.6766e-04	-	mae:
0.0345435/660						
1s	9ms/step	-	loss:	3.6753e-04	-	mae:
0.0345442/660						
1s	9ms/step	-	loss:	3.6742e-04	-	mae:
0.0345448/660						
1s	9ms/step	-	loss:	3.6732e-04	-	mae:
0.0345455/660						
1s	9ms/step	-	loss:	3.6721e-04	-	mae:
0.0345462/660						
1s	9ms/step	-	loss:	3.6712e-04	-	mae:
0.0345469/660						
1s	8ms/step	-	loss:	3.6704e-04	-	mae:
0.0345476/660						
1s	8ms/step	-	loss:	3.6696e-04	-	mae:
0.0345482/660						
1s	9ms/step	-	loss:	3.6687e-04	-	mae:
0.0345488/660						
1s	9ms/step	-	loss:	3.6677e-04	-	mae:
0.0344495/660						
1s	9ms/step	-	loss:	3.6665e-04	-	mae:
0.0344502/660						
1s	8ms/step	-	loss:	3.6654e-04	-	mae:
0.0344508/660						
1s	8ms/step	-	loss:	3.6645e-04	-	mae:
0.0344515/660						
1s	8ms/step	-	loss:	3.6634e-04	-	mae:
0.0344521/660						
1s	8ms/step	-	loss:	3.6624e-04	-	mae:
0.0344528/660						
1s	8ms/step	-	loss:	3.6611e-04	-	mae:
0.0344535/660						
1s	8ms/step	-	loss:	3.6597e-04	-	mae:
0.0344542/660						
1s	8ms/step	-	loss:	3.6582e-04	-	mae:
0.0344548/660						
0s	8ms/step	-	loss:	3.6570e-04	-	mae:
0.0343555/660						
0s	8ms/step	-	loss:	3.6558e-04	-	mae:
0.0343562/660						

Battery SoC Estimation Project Report

0s	8ms/step	-	loss:	3.6544e-04	-	mae:
0.0343568/660						
0s	8ms/step	-	loss:	3.6533e-04	-	mae:
0.0343575/660						
0s	8ms/step	-	loss:	3.6520e-04	-	mae:
0.0343582/660						
0s	8ms/step	-	loss:	3.6508e-04	-	mae:
0.0343589/660						
0s	8ms/step	-	loss:	3.6494e-04	-	mae:
0.0343596/660						
0s	8ms/step	-	loss:	3.6482e-04	-	mae:
0.0343602/660						
0s	8ms/step	-	loss:	3.6471e-04	-	mae:
0.0343607/660						
0s	8ms/step	-	loss:	3.6462e-04	-	mae:
0.0342614/660						
0s	8ms/step	-	loss:	3.6451e-04	-	mae:
0.0342621/660						
0s	8ms/step	-	loss:	3.6439e-04	-	mae:
0.0342628/660						
0s	8ms/step	-	loss:	3.6427e-04	-	mae:
0.0342635/660						
0s	8ms/step	-	loss:	3.6417e-04	-	mae:
0.0342642/660						
0s	8ms/step	-	loss:	3.6408e-04	-	mae:
0.0342649/660						
0s	8ms/step	-	loss:	3.6397e-04	-	mae:
0.0342656/660						
0s	8ms/step	-	loss:	3.6386e-04	-	mae:
0.0342660/660						

10s 9ms/step - loss: 3.6378e-04 - mae: 0.0342 - val_loss: 2.9662e-04 - val_mae: 0.0280

Epoch 27/200

	1/660	46:38	4s/step	-	loss:	2.5187e-04	-	mae:
0.0231	5/660							
	10s	15ms/step	-		loss:	2.3514e-04	-	mae:
0.0216	9/660							
	9s	15ms/step	-		loss:	2.5810e-04	-	mae: 0.0240
	13/660							
	9s	14ms/step	-		loss:	2.8183e-04	-	mae:
0.0264	17/660							
	9s	14ms/step	-		loss:	2.9528e-04	-	mae:
0.0278	21/660							
	9s	14ms/step	-		loss:	3.0439e-04	-	mae:
0.0287	26/660							
	8s	14ms/step	-		loss:	3.1395e-04	-	mae:
0.0296	31/660							
	8s	13ms/step	-		loss:	3.1963e-04	-	mae:
0.0301	36/660							
	8s	13ms/step	-		loss:	3.2473e-04	-	mae:
0.0306	41/660							
	7s	13ms/step	-		loss:	3.3180e-04	-	mae:
0.0313	46/660							
	7s	13ms/step	-		loss:	3.3732e-04	-	mae:
0.0318	50/660							
	7s	13ms/step	-		loss:	3.4141e-04	-	mae:
0.0322	54/660							
	7s	13ms/step	-		loss:	3.4502e-04	-	mae:
0.0326	59/660							
	7s	13ms/step	-		loss:	3.4900e-04	-	mae:
0.0329	63/660							
	7s	13ms/step	-		loss:	3.5150e-04	-	mae:
0.0332	68/660							
	7s	13ms/step	-		loss:	3.5371e-04	-	mae:
0.0334	73/660							
	7s	13ms/step	-		loss:	3.5553e-04	-	mae:
0.0335	77/660							

Battery SoC Estimation Project Report

0.0336	7s	13ms/step	-	loss:	3.5658e-04	-	mae:
		81/660					
0.0337	7s	13ms/step	-	loss:	3.5754e-04	-	mae:
		86/660					
0.0338	7s	13ms/step	-	loss:	3.5863e-04	-	mae:
		89/660					
0.0339	7s	13ms/step	-	loss:	3.5911e-04	-	mae:
		93/660					
0.0339	7s	13ms/step	-	loss:	3.5980e-04	-	mae:
		97/660					
0.0340101/660	7s	13ms/step	-	loss:	3.6032e-04	-	mae:
0.0340105/660	7s	13ms/step	-	loss:	3.6082e-04	-	mae:
0.0341110/660	7s	13ms/step	-	loss:	3.6131e-04	-	mae:
0.0341116/660	6s	13ms/step	-	loss:	3.6196e-04	-	mae:
0.0342123/660	6s	12ms/step	-	loss:	3.6300e-04	-	mae:
0.0343130/660	6s	12ms/step	-	loss:	3.6431e-04	-	mae:
0.0344137/660	6s	12ms/step	-	loss:	3.6528e-04	-	mae:
0.0345144/660	6s	12ms/step	-	loss:	3.6676e-04	-	mae:
0.0346151/660	5s	11ms/step	-	loss:	3.6734e-04	-	mae:
0.0346158/660	5s	11ms/step	-	loss:	3.6774e-04	-	mae:
0.0347165/660	5s	11ms/step	-	loss:	3.6795e-04	-	mae:
0.0347172/660	5s	11ms/step	-	loss:	3.6824e-04	-	mae:
0.0347179/660	5s	11ms/step	-	loss:	3.6841e-04	-	mae:
0.0347186/660	5s	11ms/step	-	loss:	3.6843e-04	-	mae:
0.0347193/660	5s	11ms/step	-	loss:	3.6855e-04	-	mae:
0.0348200/660	4s	11ms/step	-	loss:	3.6867e-04	-	mae:
0.0348205/660	4s	11ms/step	-	loss:	3.6879e-04	-	mae:
0.0348211/660	4s	11ms/step	-	loss:	3.6892e-04	-	mae:
0.0348218/660	4s	10ms/step	-	loss:	3.6917e-04	-	mae:
0.0348225/660	4s	10ms/step	-	loss:	3.6949e-04	-	mae:
0.0349232/660	4s	10ms/step	-	loss:	3.6982e-04	-	mae:
0.0349238/660	4s	10ms/step	-	loss:	3.7011e-04	-	mae:
0.0349245/660	4s	10ms/step	-	loss:	3.7044e-04	-	mae:
0.0350252/660	4s	10ms/step	-	loss:	3.7070e-04	-	mae:
0.0350259/660	4s	10ms/step	-	loss:	3.7091e-04	-	mae:
0.0350266/660	3s	10ms/step	-	loss:	3.7116e-04	-	mae:
0.0350273/660	3s	10ms/step	-	loss:	3.7141e-04	-	mae:
0.0351280/660							

Battery SoC Estimation Project Report

3s 0.0351287/660	10ms/step	-	loss:	3.7162e-04	-	mae:
3s 0.0351294/660	10ms/step	-	loss:	3.7174e-04	-	mae:
3s 0.0351301/660	10ms/step	-	loss:	3.7185e-04	-	mae:
3s 0.0351308/660	10ms/step	-	loss:	3.7193e-04	-	mae:
3s 0.0351314/660	10ms/step	-	loss:	3.7203e-04	-	mae:
3s 0.0351321/660	10ms/step	-	loss:	3.7211e-04	-	mae:
3s 0.0352325/660	10ms/step	-	loss:	3.7220e-04	-	mae:
3s 0.0352330/660	10ms/step	-	loss:	3.7224e-04	-	mae:
3s 0.0352337/660	10ms/step	-	loss:	3.7229e-04	-	mae:
3s 0.0352344/660	10ms/step	-	loss:	3.7233e-04	-	mae:
3s 0.0352351/660	10ms/step	-	loss:	3.7235e-04	-	mae:
2s 0.0352357/660	10ms/step	-	loss:	3.7234e-04	-	mae:
2s 0.0352364/660	10ms/step	-	loss:	3.7230e-04	-	mae:
2s 0.0352371/660	10ms/step	-	loss:	3.7225e-04	-	mae:
2s 0.0352377/660	10ms/step	-	loss:	3.7219e-04	-	mae:
2s 0.0352383/660	10ms/step	-	loss:	3.7211e-04	-	mae:
2s 0.0351390/660	10ms/step	-	loss:	3.7204e-04	-	mae:
2s 0.0351397/660	10ms/step	-	loss:	3.7194e-04	-	mae:
2s 404/660	9ms/step	-	loss:	3.7182e-04	-	mae: 0.0351
2s 0.0351411/660	9ms/step	-	loss:	3.7168e-04	-	mae:
2s 0.0351417/660	9ms/step	-	loss:	3.7152e-04	-	mae:
2s 0.0351424/660	9ms/step	-	loss:	3.7137e-04	-	mae:
2s 0.0351431/660	9ms/step	-	loss:	3.7122e-04	-	mae:
2s 0.0351438/660	9ms/step	-	loss:	3.7107e-04	-	mae:
2s 0.0350444/660	9ms/step	-	loss:	3.7092e-04	-	mae:
2s 0.0350450/660	9ms/step	-	loss:	3.7080e-04	-	mae:
1s 0.0350455/660	9ms/step	-	loss:	3.7068e-04	-	mae:
1s 0.0350462/660	9ms/step	-	loss:	3.7058e-04	-	mae:
1s 0.0350469/660	9ms/step	-	loss:	3.7045e-04	-	mae:
1s 0.0350476/660	9ms/step	-	loss:	3.7033e-04	-	mae:
1s 0.0350482/660	9ms/step	-	loss:	3.7021e-04	-	mae:
1s 0.0350489/660	9ms/step	-	loss:	3.7011e-04	-	mae:
1s 0.0350496/660	9ms/step	-	loss:	3.6997e-04	-	mae:

Battery SoC Estimation Project Report

0.0350503/660	1s	9ms/step	-	loss:	3.6986e-04	-	mae:
0.0350510/660	1s	9ms/step	-	loss:	3.6980e-04	-	mae:
0.0350517/660	1s	9ms/step	-	loss:	3.6978e-04	-	mae:
0.0350524/660	1s	9ms/step	-	loss:	3.6978e-04	-	mae:
0.0350531/660	1s	9ms/step	-	loss:	3.6977e-04	-	mae:
0.0350538/660	1s	9ms/step	-	loss:	3.6975e-04	-	mae:
0.0350545/660	1s	9ms/step	-	loss:	3.6972e-04	-	mae:
0.0349551/660	0s	9ms/step	-	loss:	3.6970e-04	-	mae:
0.0349558/660	0s	9ms/step	-	loss:	3.6970e-04	-	mae:
0.0349565/660	0s	9ms/step	-	loss:	3.6969e-04	-	mae:
0.0349572/660	0s	9ms/step	-	loss:	3.6969e-04	-	mae:
0.0349577/660	0s	9ms/step	-	loss:	3.6969e-04	-	mae:
0.0349584/660	0s	9ms/step	-	loss:	3.6967e-04	-	mae:
0.0349591/660	0s	9ms/step	-	loss:	3.6965e-04	-	mae:
0.0349598/660	0s	9ms/step	-	loss:	3.6963e-04	-	mae:
0.0349605/660	0s	9ms/step	-	loss:	3.6961e-04	-	mae:
0.0349612/660	0s	9ms/step	-	loss:	3.6960e-04	-	mae:
0.0349619/660	0s	9ms/step	-	loss:	3.6958e-04	-	mae:
0.0349626/660	0s	9ms/step	-	loss:	3.6957e-04	-	mae:
0.0349633/660	0s	9ms/step	-	loss:	3.6955e-04	-	mae:
0.0349640/660	0s	9ms/step	-	loss:	3.6955e-04	-	mae:
0.0349647/660	0s	9ms/step	-	loss:	3.6953e-04	-	mae:
0.0349654/660	0s	9ms/step	-	loss:	3.6951e-04	-	mae:
0.0349660/660	11s	10ms/step	-	loss:	3.6948e-04	-	mae: 0.0349 - val_loss: 2.6722e-04 - val_mae: 0.0245

Epoch 28/200

0.0334	1/660	39:39	4s/step	-	loss:	3.5157e-04	-	mae:
	5/660							
8s	13ms/step	-	loss:	2.6980e-04	-	mae:	0.0251	
	10/660							
0.0258	7s	12ms/step	-	loss:	2.7822e-04	-	mae:	
	14/660							
0.0267	8s	13ms/step	-	loss:	2.8741e-04	-	mae:	
	19/660							
0.0274	8s	13ms/step	-	loss:	2.9400e-04	-	mae:	
	24/660							
0.0283	7s	13ms/step	-	loss:	3.0383e-04	-	mae:	
	30/660							
0.0290	7s	12ms/step	-	loss:	3.1093e-04	-	mae:	
	36/660							
0.0297	7s	11ms/step	-	loss:	3.1757e-04	-	mae:	
	42/660							

Battery SoC Estimation Project Report

	6s	11ms/step	-	loss:	3.2682e-04	-	mae:
0.0306	48/660						
	6s	11ms/step	-	loss:	3.3444e-04	-	mae:
0.0314	55/660						
	6s	10ms/step	-	loss:	3.4263e-04	-	mae:
0.0322	62/660						
	6s	10ms/step	-	loss:	3.5146e-04	-	mae:
0.0331	68/660						
	5s	10ms/step	-	loss:	3.5873e-04	-	mae:
0.0338	74/660						
	5s	10ms/step	-	loss:	3.6553e-04	-	mae:
0.0344	81/660						
	5s	10ms/step	-	loss:	3.7281e-04	-	mae:
0.0351	88/660						
	5s	10ms/step	-	loss:	3.7998e-04	-	mae:
0.0358	95/660						
	5s	9ms/step	-	loss:	3.8646e-04	-	mae: 0.0364
101/660							
	5s	9ms/step	-	loss:	3.9182e-04	-	mae:
0.0369107/660							
	5s	9ms/step	-	loss:	3.9713e-04	-	mae:
0.0374113/660							
	5s	9ms/step	-	loss:	4.0202e-04	-	mae:
0.0378119/660							
	5s	9ms/step	-	loss:	4.0708e-04	-	mae:
0.0383126/660							
	4s	9ms/step	-	loss:	4.1268e-04	-	mae:
0.0388129/660							
	4s	9ms/step	-	loss:	4.1480e-04	-	mae:
0.0390133/660							
	5s	10ms/step	-	loss:	4.1749e-04	-	mae:
0.0393137/660							
	5s	10ms/step	-	loss:	4.2000e-04	-	mae:
0.0395142/660							
	5s	10ms/step	-	loss:	4.2286e-04	-	mae:
0.0398147/660							
	5s	10ms/step	-	loss:	4.2556e-04	-	mae:
0.0400152/660							
	5s	10ms/step	-	loss:	4.2801e-04	-	mae:
0.0402157/660							
	5s	10ms/step	-	loss:	4.3033e-04	-	mae:
0.0404162/660							
	4s	10ms/step	-	loss:	4.3246e-04	-	mae:
0.0406166/660							
	4s	10ms/step	-	loss:	4.3402e-04	-	mae:
0.0408171/660							
	4s	10ms/step	-	loss:	4.3644e-04	-	mae:
0.0410176/660							
	4s	10ms/step	-	loss:	4.4024e-04	-	mae:
0.0413181/660							
	4s	10ms/step	-	loss:	4.4482e-04	-	mae:
0.0418186/660							
	4s	10ms/step	-	loss:	4.4985e-04	-	mae:
0.0422190/660							
	4s	10ms/step	-	loss:	4.5422e-04	-	mae:
0.0427195/660							
	4s	10ms/step	-	loss:	4.6026e-04	-	mae:
0.0432200/660							
	4s	10ms/step	-	loss:	4.6671e-04	-	mae:
0.0438205/660							
	4s	10ms/step	-	loss:	4.7343e-04	-	mae:
0.0445210/660							
	4s	10ms/step	-	loss:	4.8021e-04	-	mae:
0.0451214/660							
	4s	11ms/step	-	loss:	4.8566e-04	-	mae:
0.0456219/660							

Battery SoC Estimation Project Report

4s	11ms/step	-	loss:	4.9238e-04	-	mae:
0.0463224/660						
4s	11ms/step	-	loss:	4.9895e-04	-	mae:
0.0469229/660						
4s	11ms/step	-	loss:	5.0533e-04	-	mae:
0.0475234/660						
4s	11ms/step	-	loss:	5.1142e-04	-	mae:
0.0480239/660						
4s	11ms/step	-	loss:	5.1728e-04	-	mae:
0.0485244/660						
4s	11ms/step	-	loss:	5.2286e-04	-	mae:
0.0490248/660						
4s	11ms/step	-	loss:	5.2713e-04	-	mae:
0.0494253/660						
4s	11ms/step	-	loss:	5.3221e-04	-	mae:
0.0499258/660						
4s	11ms/step	-	loss:	5.3706e-04	-	mae:
0.0503263/660						
4s	11ms/step	-	loss:	5.4175e-04	-	mae:
0.0507267/660						
4s	11ms/step	-	loss:	5.4536e-04	-	mae:
0.0511271/660						
4s	11ms/step	-	loss:	5.4884e-04	-	mae:
0.0514276/660						
4s	11ms/step	-	loss:	5.5302e-04	-	mae:
0.0517280/660						
4s	11ms/step	-	loss:	5.5623e-04	-	mae:
0.0520284/660						
4s	11ms/step	-	loss:	5.5930e-04	-	mae:
0.0523289/660						
4s	11ms/step	-	loss:	5.6295e-04	-	mae:
0.0526294/660						
4s	11ms/step	-	loss:	5.6641e-04	-	mae:
0.0529298/660						
3s	11ms/step	-	loss:	5.6905e-04	-	mae:
0.0531302/660						
3s	11ms/step	-	loss:	5.7160e-04	-	mae:
0.0533306/660						
3s	11ms/step	-	loss:	5.7407e-04	-	mae:
0.0536311/660						
3s	11ms/step	-	loss:	5.7702e-04	-	mae:
0.0538317/660						
3s	11ms/step	-	loss:	5.8041e-04	-	mae:
0.0541324/660						
3s	11ms/step	-	loss:	5.8413e-04	-	mae:
0.0544331/660						
3s	11ms/step	-	loss:	5.8766e-04	-	mae:
0.0547338/660						
3s	11ms/step	-	loss:	5.9095e-04	-	mae:
0.0550345/660						
3s	11ms/step	-	loss:	5.9406e-04	-	mae:
0.0553352/660						
3s	11ms/step	-	loss:	5.9697e-04	-	mae:
0.0555359/660						
3s	11ms/step	-	loss:	5.9969e-04	-	mae:
0.0557366/660						
3s	11ms/step	-	loss:	6.0224e-04	-	mae:
0.0559372/660						
3s	11ms/step	-	loss:	6.0432e-04	-	mae:
0.0561378/660						
2s	11ms/step	-	loss:	6.0629e-04	-	mae:
0.0563385/660						
2s	10ms/step	-	loss:	6.0846e-04	-	mae:
0.0564392/660						
2s	10ms/step	-	loss:	6.1047e-04	-	mae:
0.0566399/660						

Battery SoC Estimation Project Report

2s 0.0567405/660	10ms/step	-	loss:	6.1232e-04	-	mae:
2s 0.0569412/660	10ms/step	-	loss:	6.1377e-04	-	mae:
2s 0.0570419/660	10ms/step	-	loss:	6.1536e-04	-	mae:
2s 0.0571425/660	10ms/step	-	loss:	6.1683e-04	-	mae:
2s 0.0572430/660	10ms/step	-	loss:	6.1805e-04	-	mae:
2s 0.0573437/660	10ms/step	-	loss:	6.1900e-04	-	mae:
2s 0.0574444/660	10ms/step	-	loss:	6.2026e-04	-	mae:
2s 0.0574451/660	10ms/step	-	loss:	6.2145e-04	-	mae:
2s 0.0575458/660	10ms/step	-	loss:	6.2257e-04	-	mae:
2s 0.0576465/660	10ms/step	-	loss:	6.2361e-04	-	mae:
1s 0.0577472/660	10ms/step	-	loss:	6.2459e-04	-	mae:
1s 0.0577479/660	10ms/step	-	loss:	6.2550e-04	-	mae:
1s 0.0578486/660	10ms/step	-	loss:	6.2633e-04	-	mae:
1s 0.0578493/660	10ms/step	-	loss:	6.2708e-04	-	mae:
1s 0.0579500/660	10ms/step	-	loss:	6.2777e-04	-	mae:
1s 0.0579507/660	10ms/step	-	loss:	6.2840e-04	-	mae:
1s 0.0580514/660	10ms/step	-	loss:	6.2901e-04	-	mae:
1s 0.0580521/660	10ms/step	-	loss:	6.2957e-04	-	mae:
1s 0.0580528/660	10ms/step	-	loss:	6.3007e-04	-	mae:
1s 0.0580535/660	10ms/step	-	loss:	6.3051e-04	-	mae:
1s 0.0581542/660	10ms/step	-	loss:	6.3090e-04	-	mae:
1s 0.0581549/660	10ms/step	-	loss:	6.3126e-04	-	mae:
1s 0.0581554/660	10ms/step	-	loss:	6.3159e-04	-	mae:
1s 0.0581561/660	10ms/step	-	loss:	6.3182e-04	-	mae:
0s 0.0581568/660	10ms/step	-	loss:	6.3210e-04	-	mae:
0s 0.0581575/660	10ms/step	-	loss:	6.3234e-04	-	mae:
0s 0.0581582/660	10ms/step	-	loss:	6.3255e-04	-	mae:
0s 0.0581589/660	10ms/step	-	loss:	6.3273e-04	-	mae:
0s 0.0581596/660	10ms/step	-	loss:	6.3288e-04	-	mae:
0s 0.0581603/660	10ms/step	-	loss:	6.3300e-04	-	mae:
0s 0.0581610/660	10ms/step	-	loss:	6.3312e-04	-	mae:
0s 0.0581617/660	10ms/step	-	loss:	6.3324e-04	-	mae:
0s 0.0581624/660	10ms/step	-	loss:	6.3341e-04	-	mae:

Battery SoC Estimation Project Report

0s 0.0581630/660	10ms/step	-	loss:	6.3359e-04	-	mae:	
0s 0.0581636/660	10ms/step	-	loss:	6.3378e-04	-	mae:	
0s 0.0582643/660	10ms/step	-	loss:	6.3402e-04	-	mae:	
0s 0.0582650/660	10ms/step	-	loss:	6.3439e-04	-	mae:	
0s 0.0582657/660	10ms/step	-	loss:	6.3492e-04	-	mae:	
0s 0.0583660/660	10ms/step	-	loss:	6.3561e-04	-	mae:	
11s 10ms/step - loss: 6.3607e-04 - mae: 0.0583 - val_loss: 0.0020 - val_mae: 0.1764							
Epoch 29/200							
1/660 0.1409	36:15	3s/step	-	loss:	0.0016	-	mae:
6/660 8s	12ms/step	-	loss:	0.0019	-	mae:	0.1738
11/660 7s	12ms/step	-	loss:	0.0019	-	mae:	
16/660 7s	12ms/step	-	loss:	0.0019	-	mae:	
20/660 7s	12ms/step	-	loss:	0.0019	-	mae:	
25/660 7s	12ms/step	-	loss:	0.0019	-	mae:	
30/660 7s	12ms/step	-	loss:	0.0019	-	mae:	
36/660 7s	12ms/step	-	loss:	0.0019	-	mae:	
42/660 6s	11ms/step	-	loss:	0.0019	-	mae:	
48/660 6s	11ms/step	-	loss:	0.0019	-	mae:	
55/660 6s	10ms/step	-	loss:	0.0019	-	mae:	
62/660 6s	10ms/step	-	loss:	0.0019	-	mae:	
69/660 5s	10ms/step	-	loss:	0.0019	-	mae:	
75/660 5s	10ms/step	-	loss:	0.0018	-	mae:	
81/660 5s	10ms/step	-	loss:	0.0018	-	mae:	
87/660 5s	10ms/step	-	loss:	0.0018	-	mae:	
94/660 5s	10ms/step	-	loss:	0.0018	-	mae:	
101/660 5s	10ms/step	-	loss:	0.0018	-	mae:	
108/660 5s	9ms/step	-	loss:	0.0018	-	mae:	0.1643
1624114/660 5s	9ms/step	-	loss:	0.0018	-	mae:	
1608121/660 4s	9ms/step	-	loss:	0.0017	-	mae:	
1590128/660 4s	9ms/step	-	loss:	0.0017	-	mae:	
1571134/660 4s	9ms/step	-	loss:	0.0017	-	mae:	
1556140/660 4s	9ms/step	-	loss:	0.0017	-	mae:	
1540147/660 4s	9ms/step	-	loss:	0.0017	-	mae:	
1523153/660 4s	9ms/step	-	loss:	0.0016	-	mae:	
1508160/660							

Battery SoC Estimation Project Report

4s	9ms/step	-	loss:	0.0016	-	mae:
0.1491166/660						
4s	9ms/step	-	loss:	0.0016	-	mae:
0.1476173/660						
4s	9ms/step	-	loss:	0.0016	-	mae:
0.1460180/660						
4s	9ms/step	-	loss:	0.0016	-	mae:
0.1444186/660						
4s	9ms/step	-	loss:	0.0016	-	mae:
0.1431192/660						
4s	9ms/step	-	loss:	0.0015	-	mae:
0.1419199/660						
4s	9ms/step	-	loss:	0.0015	-	mae:
0.1404205/660						
4s	9ms/step	-	loss:	0.0015	-	mae:
0.1392212/660						
3s	9ms/step	-	loss:	0.0015	-	mae:
0.1379219/660						
3s	9ms/step	-	loss:	0.0015	-	mae:
0.1366225/660						
3s	9ms/step	-	loss:	0.0015	-	mae:
0.1356232/660						
3s	9ms/step	-	loss:	0.0015	-	mae:
0.1344239/660						
3s	9ms/step	-	loss:	0.0015	-	mae:
0.1332245/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1322251/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1313257/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1304264/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1293270/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1285275/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1278282/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1268288/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1260294/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1252301/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1243307/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1235314/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1227321/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1218328/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1210335/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1202342/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1195348/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1188355/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1181362/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1173369/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1166375/660						

Battery SoC Estimation Project Report

2s	9ms/step	-	loss:	0.0013	-	mae:
0.1160379/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1156383/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1153387/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1149391/660						
2s	9ms/step	-	loss:	0.0013	-	mae:
0.1145395/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1141399/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1138404/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1133409/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1129413/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1125417/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1122421/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1118426/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1114431/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1110436/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1106441/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1102446/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1098451/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1094456/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1090461/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1086466/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1082471/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1079475/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1076480/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1072485/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1068490/660						
1s	9ms/step	-	loss:	0.0012	-	mae:
0.1065494/660						
1s	10ms/step	-	loss:	0.0012	-	mae:
0.1062499/660						
1s	10ms/step	-	loss:	0.0012	-	mae:
0.1059504/660						
1s	10ms/step	-	loss:	0.0012	-	mae:
0.1055509/660						
1s	10ms/step	-	loss:	0.0012	-	mae:
0.1052514/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1049519/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1045524/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1042528/660						

Battery SoC Estimation Project Report

1s	10ms/step	-	loss:	0.0011	-	mae:
0.1040532/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1037536/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1035540/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1032544/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1030549/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1027553/660						
1s	10ms/step	-	loss:	0.0011	-	mae:
0.1024559/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.1021566/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.1017571/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.1014578/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.1010585/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.1006592/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.1002599/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0998606/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0995613/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0991618/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0988625/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0985632/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0981639/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0978646/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0974653/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0971660/660						
0s	10ms/step	-	loss:	0.0011	-	mae:
0.0968660/660						

10s 10ms/step - loss: 0.0011 - mae: 0.0967 - val_loss: 4.3386e-04 - val_mae: 0.0389

Epoch 30/200

1/660	38:00	3s/step	-	loss:	4.4926e-04	-	mae:
0.0405	6/660						
7s	12ms/step	-	loss:	4.5118e-04	-	mae:	0.0406
	11/660						
0.0444	16/660						
7s	12ms/step	-	loss:	4.9032e-04	-	mae:	
7s	12ms/step	-	loss:	5.0568e-04	-	mae:	
0.0459	21/660						
7s	12ms/step	-	loss:	5.1716e-04	-	mae:	
0.0471	26/660						
7s	12ms/step	-	loss:	5.2464e-04	-	mae:	
0.0478	32/660						
7s	11ms/step	-	loss:	5.3039e-04	-	mae:	
0.0484	38/660						
6s	11ms/step	-	loss:	5.3720e-04	-	mae:	
0.0491	44/660						
6s	11ms/step	-	loss:	5.4470e-04	-	mae:	
0.0499	50/660						

Battery SoC Estimation Project Report

0.0504	6s	11ms/step	-	loss:	5.5018e-04	-	mae:
	56/660						
0.0509	6s	10ms/step	-	loss:	5.5456e-04	-	mae:
	63/660						
0.0512	6s	10ms/step	-	loss:	5.5785e-04	-	mae:
	70/660						
0.0514	5s	10ms/step	-	loss:	5.5956e-04	-	mae:
	77/660						
0.0514	5s	10ms/step	-	loss:	5.5975e-04	-	mae:
	83/660						
0.0514	5s	10ms/step	-	loss:	5.5982e-04	-	mae:
	90/660						
0.0514	5s	9ms/step	-	loss:	5.5925e-04	-	mae: 0.0514
	96/660						
0.0514103/660	5s	9ms/step	-	loss:	5.5894e-04	-	mae:
0.0513110/660	5s	9ms/step	-	loss:	5.5852e-04	-	mae:
0.0513117/660	5s	9ms/step	-	loss:	5.5793e-04	-	mae:
0.0513124/660	4s	9ms/step	-	loss:	5.5745e-04	-	mae:
0.0513131/660	4s	9ms/step	-	loss:	5.5732e-04	-	mae:
0.0512138/660	4s	9ms/step	-	loss:	5.5682e-04	-	mae:
0.0512145/660	4s	9ms/step	-	loss:	5.5635e-04	-	mae:
0.0512152/660	4s	9ms/step	-	loss:	5.5587e-04	-	mae:
0.0511159/660	4s	9ms/step	-	loss:	5.5529e-04	-	mae:
0.0511166/660	4s	9ms/step	-	loss:	5.5459e-04	-	mae:
0.0510172/660	4s	9ms/step	-	loss:	5.5374e-04	-	mae:
0.0510178/660	4s	9ms/step	-	loss:	5.5306e-04	-	mae:
0.0509185/660	4s	9ms/step	-	loss:	5.5236e-04	-	mae:
0.0508192/660	4s	9ms/step	-	loss:	5.5150e-04	-	mae:
0.0508199/660	3s	9ms/step	-	loss:	5.5081e-04	-	mae:
0.0507206/660	3s	9ms/step	-	loss:	5.5013e-04	-	mae:
0.0507212/660	3s	9ms/step	-	loss:	5.4950e-04	-	mae:
0.0506219/660	3s	9ms/step	-	loss:	5.4902e-04	-	mae:
0.0506226/660	3s	9ms/step	-	loss:	5.4861e-04	-	mae:
0.0506233/660	3s	9ms/step	-	loss:	5.4829e-04	-	mae:
0.0505240/660	3s	9ms/step	-	loss:	5.4796e-04	-	mae:
0.0505247/660	3s	9ms/step	-	loss:	5.4763e-04	-	mae:
0.0505254/660	3s	9ms/step	-	loss:	5.4727e-04	-	mae:
0.0505261/660	3s	9ms/step	-	loss:	5.4688e-04	-	mae:
0.0504268/660	3s	9ms/step	-	loss:	5.4652e-04	-	mae:
0.0504274/660	3s	8ms/step	-	loss:	5.4621e-04	-	mae:

Battery SoC Estimation Project Report

3s	8ms/step	-	loss:	5.4599e-04	-	mae:	
0.0504280/660	3s	8ms/step	-	loss:	5.4579e-04	-	mae:
0.0504286/660	3s	9ms/step	-	loss:	5.4554e-04	-	mae:
0.0504293/660	3s	8ms/step	-	loss:	5.4527e-04	-	mae:
0.0503299/660	3s	9ms/step	-	loss:	5.4500e-04	-	mae:
0.0503305/660	3s	9ms/step	-	loss:	5.4476e-04	-	mae:
0.0503310/660	3s	9ms/step	-	loss:	5.4457e-04	-	mae:
0.0503315/660	2s	9ms/step	-	loss:	5.4439e-04	-	mae:
0.0503321/660	2s	9ms/step	-	loss:	5.4418e-04	-	mae:
0.0503327/660	2s	9ms/step	-	loss:	5.4398e-04	-	mae:
0.0502334/660	2s	9ms/step	-	loss:	5.4373e-04	-	mae:
0.0502340/660	2s	9ms/step	-	loss:	5.4350e-04	-	mae:
0.0502346/660	2s	9ms/step	-	loss:	5.4325e-04	-	mae:
0.0502353/660	2s	9ms/step	-	loss:	5.4295e-04	-	mae:
0.0502360/660	2s	9ms/step	-	loss:	5.4262e-04	-	mae:
0.0501367/660	2s	9ms/step	-	loss:	5.4228e-04	-	mae:
0.0501374/660	2s	9ms/step	-	loss:	5.4192e-04	-	mae:
0.0501381/660	2s	9ms/step	-	loss:	5.4155e-04	-	mae:
0.0500387/660	2s	9ms/step	-	loss:	5.4123e-04	-	mae:
0.0500393/660	2s	9ms/step	-	loss:	5.4088e-04	-	mae:
0.0500400/660	2s	9ms/step	-	loss:	5.4042e-04	-	mae:
0.0499406/660	2s	9ms/step	-	loss:	5.4001e-04	-	mae:
0.0499413/660	2s	9ms/step	-	loss:	5.3952e-04	-	mae:
0.0499418/660	2s	9ms/step	-	loss:	5.3917e-04	-	mae:
0.0498424/660	2s	9ms/step	-	loss:	5.3877e-04	-	mae:
0.0498431/660	1s	9ms/step	-	loss:	5.3832e-04	-	mae:
0.0498438/660	1s	9ms/step	-	loss:	5.3787e-04	-	mae:
0.0497445/660	1s	9ms/step	-	loss:	5.3745e-04	-	mae:
0.0497452/660	1s	9ms/step	-	loss:	5.3702e-04	-	mae:
0.0496459/660	1s	9ms/step	-	loss:	5.3661e-04	-	mae:
0.0496466/660	1s	9ms/step	-	loss:	5.3621e-04	-	mae:
0.0496473/660	1s	9ms/step	-	loss:	5.3580e-04	-	mae:
0.0495480/660	1s	9ms/step	-	loss:	5.3538e-04	-	mae:
0.0495487/660							

Battery SoC Estimation Project Report

0.0495494/660	1s	9ms/step	-	loss:	5.3494e-04	-	mae:
0.0494501/660	1s	9ms/step	-	loss:	5.3449e-04	-	mae:
0.0494508/660	1s	8ms/step	-	loss:	5.3403e-04	-	mae:
0.0493515/660	1s	8ms/step	-	loss:	5.3362e-04	-	mae:
0.0493522/660	1s	8ms/step	-	loss:	5.3320e-04	-	mae:
0.0493529/660	1s	8ms/step	-	loss:	5.3278e-04	-	mae:
0.0492536/660	1s	8ms/step	-	loss:	5.3234e-04	-	mae:
0.0492543/660	0s	8ms/step	-	loss:	5.3189e-04	-	mae:
0.0491549/660	0s	8ms/step	-	loss:	5.3143e-04	-	mae:
0.0491556/660	0s	8ms/step	-	loss:	5.3105e-04	-	mae:
0.0491562/660	0s	8ms/step	-	loss:	5.3062e-04	-	mae:
0.0490568/660	0s	8ms/step	-	loss:	5.3024e-04	-	mae:
0.0490575/660	0s	8ms/step	-	loss:	5.2988e-04	-	mae:
0.0489582/660	0s	8ms/step	-	loss:	5.2946e-04	-	mae:
0.0489589/660	0s	8ms/step	-	loss:	5.2903e-04	-	mae:
0.0489596/660	0s	8ms/step	-	loss:	5.2860e-04	-	mae:
0.0488603/660	0s	8ms/step	-	loss:	5.2818e-04	-	mae:
0.0488610/660	0s	8ms/step	-	loss:	5.2776e-04	-	mae:
0.0488617/660	0s	8ms/step	-	loss:	5.2736e-04	-	mae:
0.0487623/660	0s	8ms/step	-	loss:	5.2695e-04	-	mae:
0.0487628/660	0s	8ms/step	-	loss:	5.2661e-04	-	mae:
0.0487633/660	0s	8ms/step	-	loss:	5.2632e-04	-	mae:
0.0486638/660	0s	9ms/step	-	loss:	5.2605e-04	-	mae:
0.0486643/660	0s	9ms/step	-	loss:	5.2578e-04	-	mae:
0.0486648/660	0s	9ms/step	-	loss:	5.2552e-04	-	mae:
0.0486653/660	0s	9ms/step	-	loss:	5.2525e-04	-	mae:
0.0485657/660	0s	9ms/step	-	loss:	5.2497e-04	-	mae:
0.0485660/660	0s	9ms/step	-	loss:	5.2475e-04	-	mae:

10s 10ms/step - loss: 5.2454e-04 - mae: 0.0485 - val_loss: 3.2955e-04 - val_mae: 0.0284

Epoch 31/200

0.0366	1/660	24s	38ms/step	-	loss:	4.0434e-04	-	mae:
0.0359	6/660	7s	11ms/step	-	loss:	3.6345e-04	-	mae: 0.0326
0.0376	11/660	7s	12ms/step	-	loss:	3.9570e-04	-	mae:
0.0376	16/660	7s	12ms/step	-	loss:	4.1240e-04	-	mae:
0.0376	21/660							

Battery SoC Estimation Project Report

0.0389	7s	12ms/step	-	loss:	4.2466e-04	- mae:
	25/660					
0.0396	7s	12ms/step	-	loss:	4.3180e-04	- mae:
	29/660					
0.0400	7s	13ms/step	-	loss:	4.3608e-04	- mae:
	34/660					
0.0405	7s	13ms/step	-	loss:	4.4070e-04	- mae:
	39/660					
0.0410	7s	12ms/step	-	loss:	4.4625e-04	- mae:
	44/660					
0.0416	7s	12ms/step	-	loss:	4.5190e-04	- mae:
	48/660					
0.0420	7s	12ms/step	-	loss:	4.5565e-04	- mae:
	52/660					
0.0424	7s	12ms/step	-	loss:	4.5946e-04	- mae:
	57/660					
0.0428	7s	12ms/step	-	loss:	4.6328e-04	- mae:
	62/660					
0.0431	7s	12ms/step	-	loss:	4.6622e-04	- mae:
	66/660					
0.0432	7s	12ms/step	-	loss:	4.6778e-04	- mae:
	71/660					
0.0434	7s	12ms/step	-	loss:	4.6949e-04	- mae:
	75/660					
0.0435	7s	12ms/step	-	loss:	4.7013e-04	- mae:
	79/660					
0.0435	7s	12ms/step	-	loss:	4.7064e-04	- mae:
	85/660					
0.0436	7s	12ms/step	-	loss:	4.7166e-04	- mae:
	92/660					
0.0437	6s	12ms/step	-	loss:	4.7219e-04	- mae:
	98/660					
0.0437105/660	6s	12ms/step	-	loss:	4.7265e-04	- mae:
	105/660					
0.0438112/660	6s	11ms/step	-	loss:	4.7302e-04	- mae:
	112/660					
0.0438119/660	6s	11ms/step	-	loss:	4.7313e-04	- mae:
	119/660					
0.0439124/660	5s	11ms/step	-	loss:	4.7362e-04	- mae:
	124/660					
0.0439131/660	5s	11ms/step	-	loss:	4.7405e-04	- mae:
	131/660					
0.0440138/660	5s	11ms/step	-	loss:	4.7422e-04	- mae:
	138/660					
0.0440144/660	5s	11ms/step	-	loss:	4.7429e-04	- mae:
	144/660					
0.0440151/660	5s	11ms/step	-	loss:	4.7424e-04	- mae:
	151/660					
0.0440158/660	5s	10ms/step	-	loss:	4.7410e-04	- mae:
	158/660					
0.0440165/660	5s	10ms/step	-	loss:	4.7385e-04	- mae:
	165/660					
0.0439172/660	4s	10ms/step	-	loss:	4.7344e-04	- mae:
	172/660					
0.0439179/660	4s	10ms/step	-	loss:	4.7305e-04	- mae:
	179/660					
0.0439186/660	4s	10ms/step	-	loss:	4.7255e-04	- mae:
	186/660					
0.0438193/660	4s	10ms/step	-	loss:	4.7194e-04	- mae:
	193/660					
0.0438200/660	4s	10ms/step	-	loss:	4.7147e-04	- mae:
	200/660					
0.0438207/660	4s	10ms/step	-	loss:	4.7102e-04	- mae:
	207/660					
0.0437214/660	4s	10ms/step	-	loss:	4.7066e-04	- mae:
	214/660					

Battery SoC Estimation Project Report						
4s 0.0437220/660	10ms/step	-	loss:	4.7038e-04	-	mae:
4s 0.0437227/660	10ms/step	-	loss:	4.7027e-04	-	mae:
4s 0.0437233/660	10ms/step	-	loss:	4.7022e-04	-	mae:
4s 0.0437239/660	10ms/step	-	loss:	4.7020e-04	-	mae:
4s 0.0437245/660	10ms/step	-	loss:	4.7024e-04	-	mae:
3s 0.0437250/660	10ms/step	-	loss:	4.7029e-04	-	mae:
3s 0.0437256/660	10ms/step	-	loss:	4.7033e-04	-	mae:
3s 0.0438263/660	10ms/step	-	loss:	4.7036e-04	-	mae:
3s 269/660	9ms/step	-	loss:	4.7045e-04	-	mae: 0.0438
3s 0.0438276/660	9ms/step	-	loss:	4.7054e-04	-	mae:
3s 0.0438283/660	9ms/step	-	loss:	4.7068e-04	-	mae:
3s 0.0438290/660	9ms/step	-	loss:	4.7077e-04	-	mae:
3s 0.0438297/660	9ms/step	-	loss:	4.7079e-04	-	mae:
3s 0.0438304/660	9ms/step	-	loss:	4.7079e-04	-	mae:
3s 0.0438311/660	9ms/step	-	loss:	4.7079e-04	-	mae:
3s 0.0438318/660	9ms/step	-	loss:	4.7079e-04	-	mae:
3s 0.0439325/660	9ms/step	-	loss:	4.7079e-04	-	mae:
3s 0.0439331/660	9ms/step	-	loss:	4.7075e-04	-	mae:
3s 0.0439338/660	9ms/step	-	loss:	4.7071e-04	-	mae:
2s 0.0438344/660	9ms/step	-	loss:	4.7063e-04	-	mae:
2s 0.0438350/660	9ms/step	-	loss:	4.7056e-04	-	mae:
2s 0.0438357/660	9ms/step	-	loss:	4.7048e-04	-	mae:
2s 0.0438363/660	9ms/step	-	loss:	4.7036e-04	-	mae:
2s 0.0438370/660	9ms/step	-	loss:	4.7023e-04	-	mae:
2s 0.0438376/660	9ms/step	-	loss:	4.7008e-04	-	mae:
2s 0.0438382/660	9ms/step	-	loss:	4.6994e-04	-	mae:
2s 0.0438388/660	9ms/step	-	loss:	4.6979e-04	-	mae:
2s 0.0438395/660	9ms/step	-	loss:	4.6963e-04	-	mae:
2s 0.0438402/660	9ms/step	-	loss:	4.6942e-04	-	mae:
2s 0.0437409/660	9ms/step	-	loss:	4.6892e-04	-	mae:
2s 0.0437416/660	9ms/step	-	loss:	4.6866e-04	-	mae:
2s 0.0437423/660	9ms/step	-	loss:	4.6840e-04	-	mae:
0.0437430/660	9ms/step	-	loss:			

Battery SoC Estimation Project Report						
0.0437437/660	2s	9ms/step	-	loss:	4.6817e-04	- mae:
0.0436444/660	1s	9ms/step	-	loss:	4.6794e-04	- mae:
0.0436451/660	1s	9ms/step	-	loss:	4.6773e-04	- mae:
0.0436458/660	1s	9ms/step	-	loss:	4.6752e-04	- mae:
0.0436464/660	1s	9ms/step	-	loss:	4.6734e-04	- mae:
0.0436471/660	1s	9ms/step	-	loss:	4.6719e-04	- mae:
0.0435478/660	1s	9ms/step	-	loss:	4.6702e-04	- mae:
0.0435485/660	1s	9ms/step	-	loss:	4.6684e-04	- mae:
0.0435491/660	1s	9ms/step	-	loss:	4.6663e-04	- mae:
0.0435498/660	1s	9ms/step	-	loss:	4.6644e-04	- mae:
0.0435504/660	1s	9ms/step	-	loss:	4.6621e-04	- mae:
0.0435510/660	1s	9ms/step	-	loss:	4.6603e-04	- mae:
0.0434517/660	1s	9ms/step	-	loss:	4.6586e-04	- mae:
0.0434524/660	1s	9ms/step	-	loss:	4.6564e-04	- mae:
0.0434530/660	1s	9ms/step	-	loss:	4.6542e-04	- mae:
0.0434537/660	1s	9ms/step	-	loss:	4.6522e-04	- mae:
0.0434544/660	1s	9ms/step	-	loss:	4.6497e-04	- mae:
0.0433550/660	0s	9ms/step	-	loss:	4.6473e-04	- mae:
0.0433557/660	0s	9ms/step	-	loss:	4.6454e-04	- mae:
0.0433564/660	0s	9ms/step	-	loss:	4.6433e-04	- mae:
0.0433570/660	0s	9ms/step	-	loss:	4.6411e-04	- mae:
0.0433577/660	0s	9ms/step	-	loss:	4.6394e-04	- mae:
0.0432583/660	0s	9ms/step	-	loss:	4.6373e-04	- mae:
0.0432589/660	0s	9ms/step	-	loss:	4.6356e-04	- mae:
0.0432595/660	0s	9ms/step	-	loss:	4.6339e-04	- mae:
0.0432602/660	0s	9ms/step	-	loss:	4.6302e-04	- mae:
0.0432608/660	0s	9ms/step	-	loss:	4.6287e-04	- mae:
0.0432615/660	0s	9ms/step	-	loss:	4.6268e-04	- mae:
0.0431621/660	0s	9ms/step	-	loss:	4.6252e-04	- mae:
0.0431626/660	0s	9ms/step	-	loss:	4.6239e-04	- mae:
0.0431633/660	0s	9ms/step	-	loss:	4.6221e-04	- mae:
0.0431639/660	0s	9ms/step	-	loss:	4.6206e-04	- mae:
0.0431646/660						

Battery SoC Estimation Project Report

0s 0.0431653/660	9ms/step	-	loss:	4.6189e-04	-	mae:
0s 0.0430660/660	9ms/step	-	loss:	4.6170e-04	-	mae:
0s 0.0430660/660	9ms/step	-	loss:	4.6152e-04	-	mae:
6s 10ms/step - loss: 4.6150e-04 - mae: 0.0430 - val_loss: 3.2339e-04 - val_mae: 0.0292						
Epoch 32/200						
0.0377	1/660 6/660 7s 11/660	41:35	4s/step	-	loss:	4.0521e-04
0.0398	7s 12ms/step 16/660	-	loss:	3.8384e-04	-	mae: 0.0354
0.0418	7s 12ms/step 21/660	-	loss:	4.2773e-04	-	mae:
0.0427	7s 12ms/step 26/660	-	loss:	4.5722e-04	-	mae:
0.0432	7s 12ms/step 32/660	-	loss:	4.6222e-04	-	mae:
0.0435	7s 11ms/step 37/660	-	loss:	4.6484e-04	-	mae:
0.0437	7s 11ms/step 43/660	-	loss:	4.6746e-04	-	mae:
0.0443	6s 11ms/step 49/660	-	loss:	4.7340e-04	-	mae:
0.0446	6s 10ms/step 56/660	-	loss:	4.7723e-04	-	mae:
0.0450	6s 10ms/step 63/660	-	loss:	4.8093e-04	-	mae:
0.0452	5s 10ms/step 70/660	-	loss:	4.8309e-04	-	mae:
0.0453	5s 10ms/step 77/660	-	loss:	4.8407e-04	-	mae:
0.0453	5s 10ms/step 82/660	-	loss:	4.8404e-04	-	mae:
0.0453	5s 10ms/step 86/660	-	loss:	4.8429e-04	-	mae:
0.0453	5s 10ms/step 90/660	-	loss:	4.8439e-04	-	mae:
0.0453	5s 10ms/step 94/660	-	loss:	4.8420e-04	-	mae:
0.0453	5s 10ms/step 98/660	-	loss:	4.8421e-04	-	mae:
0.0453102/660	5s 10ms/step	-	loss:	4.8412e-04	-	mae:
0.0453106/660	5s 11ms/step	-	loss:	4.8395e-04	-	mae:
0.0453110/660	5s 11ms/step	-	loss:	4.8384e-04	-	mae:
0.0453115/660	5s 11ms/step	-	loss:	4.8358e-04	-	mae:
0.0453120/660	5s 11ms/step	-	loss:	4.8341e-04	-	mae:
0.0453124/660	5s 11ms/step	-	loss:	4.8343e-04	-	mae:
0.0453128/660	5s 11ms/step	-	loss:	4.8345e-04	-	mae:
0.0452132/660	5s 11ms/step	-	loss:	4.8325e-04	-	mae:
0.0452137/660	5s 11ms/step	-	loss:	4.8298e-04	-	mae:
0.0452142/660	5s 11ms/step	-	loss:	4.8266e-04	-	mae:
0.0452146/660	5s 11ms/step	-	loss:	4.8228e-04	-	mae:

Battery SoC Estimation Project Report

5s 0.0451151/660	11ms/step	-	loss:	4.8193e-04	-	mae:
5s 0.0451156/660	11ms/step	-	loss:	4.8145e-04	-	mae:
5s 0.0450161/660	11ms/step	-	loss:	4.8093e-04	-	mae:
5s 0.0450165/660	11ms/step	-	loss:	4.8032e-04	-	mae:
5s 0.0449170/660	11ms/step	-	loss:	4.7978e-04	-	mae:
5s 0.0449175/660	11ms/step	-	loss:	4.7925e-04	-	mae:
5s 0.0448180/660	11ms/step	-	loss:	4.7806e-04	-	mae:
5s 0.0448185/660	11ms/step	-	loss:	4.7738e-04	-	mae:
5s 0.0447189/660	11ms/step	-	loss:	4.7690e-04	-	mae:
5s 0.0447194/660	11ms/step	-	loss:	4.7632e-04	-	mae:
5s 0.0446198/660	11ms/step	-	loss:	4.7589e-04	-	mae:
5s 0.0446202/660	11ms/step	-	loss:	4.7544e-04	-	mae:
5s 0.0445206/660	11ms/step	-	loss:	4.7502e-04	-	mae:
5s 0.0445211/660	11ms/step	-	loss:	4.7450e-04	-	mae:
5s 0.0444215/660	12ms/step	-	loss:	4.7416e-04	-	mae:
5s 0.0444219/660	12ms/step	-	loss:	4.7386e-04	-	mae:
5s 0.0444223/660	12ms/step	-	loss:	4.7361e-04	-	mae:
5s 0.0444227/660	12ms/step	-	loss:	4.7338e-04	-	mae:
5s 0.0443231/660	12ms/step	-	loss:	4.7315e-04	-	mae:
4s 0.0443236/660	12ms/step	-	loss:	4.7288e-04	-	mae:
4s 0.0443240/660	12ms/step	-	loss:	4.7270e-04	-	mae:
4s 0.0443244/660	12ms/step	-	loss:	4.7252e-04	-	mae:
4s 0.0443248/660	12ms/step	-	loss:	4.7233e-04	-	mae:
4s 0.0442252/660	12ms/step	-	loss:	4.7213e-04	-	mae:
4s 0.0442256/660	12ms/step	-	loss:	4.7191e-04	-	mae:
4s 0.0442262/660	12ms/step	-	loss:	4.7164e-04	-	mae:
4s 0.0442268/660	12ms/step	-	loss:	4.7139e-04	-	mae:
4s 0.0442275/660	12ms/step	-	loss:	4.7114e-04	-	mae:
4s 0.0441282/660	12ms/step	-	loss:	4.7085e-04	-	mae:
4s 0.0441288/660	12ms/step	-	loss:	4.7055e-04	-	mae:
4s 0.0441295/660	11ms/step	-	loss:	4.7017e-04	-	mae:
4s 0.0441302/660	11ms/step	-	loss:	4.6979e-04	-	mae:
0.0440309/660						

Battery SoC Estimation Project Report

0.0440316/660	3s	11ms/step	-	loss:	4.6942e-04	-	mae:
0.0440322/660	3s	11ms/step	-	loss:	4.6905e-04	-	mae:
0.0439328/660	3s	11ms/step	-	loss:	4.6875e-04	-	mae:
0.0439335/660	3s	11ms/step	-	loss:	4.6847e-04	-	mae:
0.0439342/660	3s	11ms/step	-	loss:	4.6814e-04	-	mae:
0.0438349/660	3s	11ms/step	-	loss:	4.6781e-04	-	mae:
0.0438355/660	3s	11ms/step	-	loss:	4.6747e-04	-	mae:
0.0438361/660	3s	11ms/step	-	loss:	4.6717e-04	-	mae:
0.0438368/660	3s	11ms/step	-	loss:	4.6685e-04	-	mae:
0.0437374/660	3s	11ms/step	-	loss:	4.6648e-04	-	mae:
0.0437381/660	2s	11ms/step	-	loss:	4.6616e-04	-	mae:
0.0437387/660	2s	11ms/step	-	loss:	4.6578e-04	-	mae:
0.0436393/660	2s	11ms/step	-	loss:	4.6547e-04	-	mae:
0.0436400/660	2s	11ms/step	-	loss:	4.6515e-04	-	mae:
0.0436407/660	2s	11ms/step	-	loss:	4.6475e-04	-	mae:
0.0435413/660	2s	11ms/step	-	loss:	4.6433e-04	-	mae:
0.0435419/660	2s	11ms/step	-	loss:	4.6397e-04	-	mae:
0.0435426/660	2s	11ms/step	-	loss:	4.6359e-04	-	mae:
0.0434433/660	2s	10ms/step	-	loss:	4.6319e-04	-	mae:
0.0434439/660	2s	10ms/step	-	loss:	4.6279e-04	-	mae:
0.0433445/660	2s	10ms/step	-	loss:	4.6247e-04	-	mae:
0.0433451/660	2s	10ms/step	-	loss:	4.6214e-04	-	mae:
0.0433458/660	2s	10ms/step	-	loss:	4.6182e-04	-	mae:
0.0433464/660	2s	10ms/step	-	loss:	4.6145e-04	-	mae:
0.0432470/660	1s	10ms/step	-	loss:	4.6116e-04	-	mae:
0.0432477/660	1s	10ms/step	-	loss:	4.6086e-04	-	mae:
0.0432484/660	1s	10ms/step	-	loss:	4.6051e-04	-	mae:
0.0431491/660	1s	10ms/step	-	loss:	4.6015e-04	-	mae:
0.0431497/660	1s	10ms/step	-	loss:	4.5978e-04	-	mae:
0.0431503/660	1s	10ms/step	-	loss:	4.5947e-04	-	mae:
0.0430510/660	1s	10ms/step	-	loss:	4.5917e-04	-	mae:
0.0430517/660	1s	10ms/step	-	loss:	4.5886e-04	-	mae:
0.0430524/660	1s	10ms/step	-	loss:	4.5854e-04	-	mae:

Battery SoC Estimation Project Report

0.0430531/660	1s	10ms/step	-	loss:	4.5822e-04	-	mae:
0.0429538/660	1s	10ms/step	-	loss:	4.5790e-04	-	mae:
0.0429545/660	1s	10ms/step	-	loss:	4.5757e-04	-	mae:
0.0429552/660	1s	10ms/step	-	loss:	4.5725e-04	-	mae:
0.0428559/660	1s	10ms/step	-	loss:	4.5695e-04	-	mae:
0.0428566/660	0s	10ms/step	-	loss:	4.5666e-04	-	mae:
0.0428571/660	0s	10ms/step	-	loss:	4.5638e-04	-	mae:
0.0428577/660	0s	10ms/step	-	loss:	4.5618e-04	-	mae:
0.0427584/660	0s	10ms/step	-	loss:	4.5593e-04	-	mae:
0.0427591/660	0s	10ms/step	-	loss:	4.5564e-04	-	mae:
0.0427598/660	0s	10ms/step	-	loss:	4.5535e-04	-	mae:
0.0427605/660	0s	10ms/step	-	loss:	4.5507e-04	-	mae:
0.0426611/660	0s	10ms/step	-	loss:	4.5480e-04	-	mae:
0.0426618/660	0s	10ms/step	-	loss:	4.5457e-04	-	mae:
0.0426624/660	0s	10ms/step	-	loss:	4.5431e-04	-	mae:
0.0426631/660	0s	10ms/step	-	loss:	4.5408e-04	-	mae:
0.0425638/660	0s	10ms/step	-	loss:	4.5383e-04	-	mae:
0.0425644/660	0s	10ms/step	-	loss:	4.5359e-04	-	mae:
0.0425651/660	0s	10ms/step	-	loss:	4.5339e-04	-	mae:
0.0425658/660	0s	10ms/step	-	loss:	4.5314e-04	-	mae:
0.0424660/660	11s	11ms/step	-	loss:	4.5280e-04	-	mae: 0.0424 - val_loss: 3.9938e-04 - val_mae: 0.0375

Epoch 33/200

0.0366	1/660	34:52	3s/step	-	loss:	3.9301e-04	-	mae:
	6/660							
7s	12ms/step	-	loss:	3.8400e-04	-	mae:	0.0357	
	11/660							
0.0389	7s	12ms/step	-	loss:	4.1501e-04	-	mae:	
	16/660							
0.0398	7s	12ms/step	-	loss:	4.2392e-04	-	mae:	
	21/660							
0.0404	7s	12ms/step	-	loss:	4.2984e-04	-	mae:	
	26/660							
0.0408	7s	12ms/step	-	loss:	4.3447e-04	-	mae:	
	32/660							
0.0410	7s	11ms/step	-	loss:	4.3684e-04	-	mae:	
	38/660							
0.0413	6s	11ms/step	-	loss:	4.4051e-04	-	mae:	
	44/660							
0.0419	6s	10ms/step	-	loss:	4.4607e-04	-	mae:	
	51/660							
0.0423	6s	10ms/step	-	loss:	4.5070e-04	-	mae:	
	56/660							
0.0425	6s	10ms/step	-	loss:	4.5349e-04	-	mae:	
	63/660							

Battery SoC Estimation Project Report							
0.0427	5s	10ms/step	-	loss:	4.5574e-04	-	mae:
		70/660					
0.0428	5s	10ms/step	-	loss:	4.5661e-04	-	mae:
		77/660					
0.0428	5s	10ms/step	-	loss:	4.5667e-04	-	mae:
		84/660					
	5s	9ms/step	-	loss:	4.5685e-04	-	mae: 0.0428
		91/660					
0.0428	5s	9ms/step	-	loss:	4.5665e-04	-	mae:
		98/660					
0.0428105/660	5s	9ms/step	-	loss:	4.5662e-04	-	mae:
0.0428112/660	4s	9ms/step	-	loss:	4.5662e-04	-	mae:
0.0428118/660	4s	9ms/step	-	loss:	4.5640e-04	-	mae:
0.0428125/660	4s	9ms/step	-	loss:	4.5664e-04	-	mae:
0.0429132/660	4s	9ms/step	-	loss:	4.5709e-04	-	mae:
0.0429139/660	4s	9ms/step	-	loss:	4.5716e-04	-	mae:
0.0429145/660	4s	9ms/step	-	loss:	4.5719e-04	-	mae:
0.0429152/660	4s	9ms/step	-	loss:	4.5714e-04	-	mae:
0.0429159/660	4s	9ms/step	-	loss:	4.5700e-04	-	mae:
0.0428166/660	4s	9ms/step	-	loss:	4.5672e-04	-	mae:
0.0428173/660	4s	9ms/step	-	loss:	4.5627e-04	-	mae:
0.0428180/660	4s	9ms/step	-	loss:	4.5591e-04	-	mae:
0.0427185/660	4s	9ms/step	-	loss:	4.5535e-04	-	mae:
0.0427192/660	4s	9ms/step	-	loss:	4.5487e-04	-	mae:
0.0426199/660	4s	9ms/step	-	loss:	4.5427e-04	-	mae:
0.0426205/660	3s	9ms/step	-	loss:	4.5368e-04	-	mae:
0.0425212/660	3s	9ms/step	-	loss:	4.5322e-04	-	mae:
0.0425218/660	3s	9ms/step	-	loss:	4.5275e-04	-	mae:
0.0425225/660	3s	9ms/step	-	loss:	4.5243e-04	-	mae:
0.0424231/660	3s	9ms/step	-	loss:	4.5216e-04	-	mae:
0.0424238/660	3s	9ms/step	-	loss:	4.5191e-04	-	mae:
0.0424245/660	3s	9ms/step	-	loss:	4.5162e-04	-	mae:
0.0424252/660	3s	9ms/step	-	loss:	4.5137e-04	-	mae:
0.0424259/660	3s	9ms/step	-	loss:	4.5111e-04	-	mae:
0.0423265/660	3s	9ms/step	-	loss:	4.5085e-04	-	mae:
0.0423272/660	3s	9ms/step	-	loss:	4.5070e-04	-	mae:
0.0423279/660	3s	9ms/step	-	loss:	4.5055e-04	-	mae:
0.0423286/660	3s	9ms/step	-	loss:	4.5043e-04	-	mae:

Battery SoC Estimation Project Report

0.0423293/660	3s	9ms/step	-	loss:	4.5024e-04	-	mae:
0.0423300/660	3s	9ms/step	-	loss:	4.5005e-04	-	mae:
0.0422306/660	3s	8ms/step	-	loss:	4.4983e-04	-	mae:
0.0422311/660	3s	8ms/step	-	loss:	4.4968e-04	-	mae:
0.0422317/660	2s	9ms/step	-	loss:	4.4955e-04	-	mae:
0.0422324/660	2s	9ms/step	-	loss:	4.4941e-04	-	mae:
0.0422331/660	2s	9ms/step	-	loss:	4.4922e-04	-	mae:
0.0422335/660	2s	9ms/step	-	loss:	4.4905e-04	-	mae:
0.0422339/660	2s	9ms/step	-	loss:	4.4893e-04	-	mae:
0.0422343/660	2s	9ms/step	-	loss:	4.4882e-04	-	mae:
0.0422348/660	2s	9ms/step	-	loss:	4.4869e-04	-	mae:
0.0421352/660	2s	9ms/step	-	loss:	4.4853e-04	-	mae:
0.0421356/660	2s	9ms/step	-	loss:	4.4841e-04	-	mae:
0.0421361/660	2s	9ms/step	-	loss:	4.4827e-04	-	mae:
0.0421366/660	2s	9ms/step	-	loss:	4.4811e-04	-	mae:
0.0421370/660	2s	9ms/step	-	loss:	4.4794e-04	-	mae:
0.0421375/660	2s	9ms/step	-	loss:	4.4781e-04	-	mae:
0.0421380/660	2s	9ms/step	-	loss:	4.4764e-04	-	mae:
0.0420385/660	2s	9ms/step	-	loss:	4.4732e-04	-	mae:
0.0420390/660	2s	9ms/step	-	loss:	4.4716e-04	-	mae:
0.0420395/660	2s	9ms/step	-	loss:	4.4699e-04	-	mae:
0.0420400/660	2s	9ms/step	-	loss:	4.4679e-04	-	mae:
0.0420404/660	2s	9ms/step	-	loss:	4.4663e-04	-	mae:
0.0420408/660	2s	9ms/step	-	loss:	4.4646e-04	-	mae:
0.0419413/660	2s	9ms/step	-	loss:	4.4625e-04	-	mae:
0.0419418/660	2s	9ms/step	-	loss:	4.4602e-04	-	mae:
0.0419423/660	2s	9ms/step	-	loss:	4.4580e-04	-	mae:
0.0419428/660	2s	9ms/step	-	loss:	4.4558e-04	-	mae:
0.0419433/660	2s	9ms/step	-	loss:	4.4537e-04	-	mae:
0.0418438/660	2s	9ms/step	-	loss:	4.4516e-04	-	mae:
0.0418443/660	2s	9ms/step	-	loss:	4.4495e-04	-	mae:
0.0418448/660	2s	9ms/step	-	loss:	4.4474e-04	-	mae:
0.0418452/660							

Battery SoC Estimation Project Report

0.0418457/660	1s	9ms/step	-	loss:	4.4456e-04	-	mae:
	1s	10ms/step	-	loss:	4.4436e-04	-	mae:
0.0418462/660							
	1s	10ms/step	-	loss:	4.4415e-04	-	mae:
0.0417466/660	1s	10ms/step	-	loss:	4.4400e-04	-	mae:
	1s	10ms/step	-	loss:	4.4384e-04	-	mae:
0.0417470/660							
	1s	10ms/step	-	loss:	4.4363e-04	-	mae:
0.0417475/660	1s	10ms/step	-	loss:	4.4346e-04	-	mae:
	1s	10ms/step	-	loss:	4.4329e-04	-	mae:
0.0417479/660							
	1s	10ms/step	-	loss:	4.4311e-04	-	mae:
0.0417483/660	1s	10ms/step	-	loss:	4.4293e-04	-	mae:
	1s	10ms/step	-	loss:	4.4275e-04	-	mae:
0.0417487/660							
	1s	10ms/step	-	loss:	4.4257e-04	-	mae:
0.0416491/660	1s	10ms/step	-	loss:	4.4241e-04	-	mae:
	1s	10ms/step	-	loss:	4.4225e-04	-	mae:
0.0416495/660							
	1s	10ms/step	-	loss:	4.4209e-04	-	mae:
0.0416499/660	1s	10ms/step	-	loss:	4.4184e-04	-	mae:
	1s	10ms/step	-	loss:	4.4154e-04	-	mae:
0.0415517/660							
	1s	10ms/step	-	loss:	4.4123e-04	-	mae:
0.0415524/660	1s	10ms/step	-	loss:	4.4095e-04	-	mae:
	1s	10ms/step	-	loss:	4.4064e-04	-	mae:
0.0415531/660							
	1s	10ms/step	-	loss:	4.4035e-04	-	mae:
0.0414544/660	1s	10ms/step	-	loss:	4.4011e-04	-	mae:
	1s	10ms/step	-	loss:	4.3984e-04	-	mae:
0.0414551/660							
	1s	10ms/step	-	loss:	4.3958e-04	-	mae:
0.0414557/660	1s	10ms/step	-	loss:	4.3937e-04	-	mae:
	1s	10ms/step	-	loss:	4.3912e-04	-	mae:
0.0413564/660							
	0s	10ms/step	-	loss:	4.3890e-04	-	mae:
0.0413571/660	0s	10ms/step	-	loss:	4.3866e-04	-	mae:
	0s	10ms/step	-	loss:	4.3850e-04	-	mae:
0.0413577/660							
	0s	10ms/step	-	loss:	4.3828e-04	-	mae:
0.0413584/660	0s	10ms/step	-	loss:	4.3810e-04	-	mae:
	0s	10ms/step	-	loss:	4.3797e-04	-	mae:
0.0412590/660							
	0s	10ms/step	-	loss:	4.3780e-04	-	mae:
0.0412597/660	0s	10ms/step	-	loss:			
	0s	10ms/step	-	loss:			
0.0412602/660							
	0s	10ms/step	-	loss:			
0.0412609/660	0s	10ms/step	-	loss:			
	0s	10ms/step	-	loss:			
0.0412615/660							
	0s	10ms/step	-	loss:			
0.0411619/660	0s	10ms/step	-	loss:			
	0s	10ms/step	-	loss:			
0.0411625/660							
	0s	10ms/step	-	loss:			
0.0411631/660	0s	10ms/step	-	loss:			

Battery SoC Estimation Project Report

0s 0.0411638/660	10ms/step	-	loss:	4.3763e-04	-	mae:
0s 0.0411645/660	10ms/step	-	loss:	4.3744e-04	-	mae:
0s 0.0411652/660	10ms/step	-	loss:	4.3726e-04	-	mae:
0s 0.0410659/660	10ms/step	-	loss:	4.3706e-04	-	mae:
0s 0.0410660/660	10ms/step	-	loss:	4.3687e-04	-	mae:
10s 10ms/step - loss: 4.3681e-04 - mae: 0.0410 - val_loss: 3.9467e-04 - val_mae: 0.0370						
Epoch 34/200						
1/660 0.0337	38:13	3s/step	-	loss:	3.6093e-04	-
6/660 7s	12ms/step	-	loss:	4.0969e-04	-	mae: 0.0385
11/660 7s	12ms/step	-	loss:	4.2570e-04	-	mae:
16/660 7s	12ms/step	-	loss:	4.3445e-04	-	mae:
21/660 7s	12ms/step	-	loss:	4.4110e-04	-	mae:
26/660 7s	12ms/step	-	loss:	4.4646e-04	-	mae:
32/660 7s	11ms/step	-	loss:	4.4931e-04	-	mae:
39/660 6s	11ms/step	-	loss:	4.5412e-04	-	mae:
45/660 6s	10ms/step	-	loss:	4.5914e-04	-	mae:
51/660 6s	10ms/step	-	loss:	4.6315e-04	-	mae:
58/660 5s	10ms/step	-	loss:	4.6650e-04	-	mae:
65/660 5s	10ms/step	-	loss:	4.6770e-04	-	mae:
71/660 5s	10ms/step	-	loss:	4.6803e-04	-	mae:
77/660 5s	10ms/step	-	loss:	4.6756e-04	-	mae:
84/660 5s	10ms/step	-	loss:	4.6717e-04	-	mae:
91/660 5s	9ms/step	-	loss:	4.6633e-04	-	mae: 0.0438
98/660 5s	9ms/step	-	loss:	4.6570e-04	-	mae:
0.0438105/660 5s	9ms/step	-	loss:	4.6500e-04	-	mae:
0.0437111/660 5s	9ms/step	-	loss:	4.6421e-04	-	mae:
0.0436118/660 4s	9ms/step	-	loss:	4.6370e-04	-	mae:
0.0436125/660 4s	9ms/step	-	loss:	4.6339e-04	-	mae:
0.0435132/660 4s	9ms/step	-	loss:	4.6270e-04	-	mae:
0.0435139/660 4s	9ms/step	-	loss:	4.6197e-04	-	mae:
0.0434145/660 4s	9ms/step	-	loss:	4.6131e-04	-	mae:
0.0433151/660 4s	9ms/step	-	loss:	4.6065e-04	-	mae:
0.0433157/660 4s	9ms/step	-	loss:	4.5992e-04	-	mae:
0.0432164/660 4s	9ms/step	-	loss:	4.5899e-04	-	mae:
0.0431170/660						

Battery SoC Estimation Project Report

4s 0.0430177/660	9ms/step	-	loss:	4.5828e-04	-	mae:
4s 0.0430184/660	9ms/step	-	loss:	4.5741e-04	-	mae:
4s 0.0429191/660	9ms/step	-	loss:	4.5640e-04	-	mae:
4s 0.0428196/660	9ms/step	-	loss:	4.5546e-04	-	mae:
4s 0.0427203/660	9ms/step	-	loss:	4.5484e-04	-	mae:
4s 0.0426210/660	9ms/step	-	loss:	4.5398e-04	-	mae:
3s 0.0425217/660	9ms/step	-	loss:	4.5318e-04	-	mae:
3s 0.0425224/660	9ms/step	-	loss:	4.5247e-04	-	mae:
3s 0.0424231/660	9ms/step	-	loss:	4.5189e-04	-	mae:
3s 0.0424238/660	9ms/step	-	loss:	4.5133e-04	-	mae:
3s 0.0423245/660	9ms/step	-	loss:	4.5080e-04	-	mae:
3s 0.0423252/660	9ms/step	-	loss:	4.5030e-04	-	mae:
3s 0.0422258/660	9ms/step	-	loss:	4.4978e-04	-	mae:
3s 0.0422265/660	9ms/step	-	loss:	4.4931e-04	-	mae:
3s 0.0421272/660	9ms/step	-	loss:	4.4885e-04	-	mae:
3s 0.0421279/660	9ms/step	-	loss:	4.4844e-04	-	mae:
3s 0.0421286/660	9ms/step	-	loss:	4.4806e-04	-	mae:
3s 0.0420293/660	9ms/step	-	loss:	4.4763e-04	-	mae:
3s 0.0420300/660	9ms/step	-	loss:	4.4720e-04	-	mae:
3s 0.0419307/660	9ms/step	-	loss:	4.4673e-04	-	mae:
3s 0.0419314/660	9ms/step	-	loss:	4.4632e-04	-	mae:
2s 0.0419321/660	9ms/step	-	loss:	4.4590e-04	-	mae:
2s 0.0418326/660	9ms/step	-	loss:	4.4548e-04	-	mae:
2s 0.0418333/660	9ms/step	-	loss:	4.4518e-04	-	mae:
2s 0.0418340/660	9ms/step	-	loss:	4.4476e-04	-	mae:
2s 0.0417347/660	9ms/step	-	loss:	4.4435e-04	-	mae:
2s 0.0417354/660	9ms/step	-	loss:	4.4394e-04	-	mae:
2s 0.0416361/660	9ms/step	-	loss:	4.4353e-04	-	mae:
2s 0.0416368/660	9ms/step	-	loss:	4.4313e-04	-	mae:
2s 0.0416375/660	9ms/step	-	loss:	4.4276e-04	-	mae:
2s 0.0415382/660	9ms/step	-	loss:	4.4239e-04	-	mae:
2s 0.0415389/660	9ms/step	-	loss:	4.4202e-04	-	mae:
2s 0.0415396/660	8ms/step	-	loss:	4.4167e-04	-	mae:

Battery SoC Estimation Project Report

0.0414403/660	2s	8ms/step	-	loss:	4.4130e-04	-	mae:
0.0414410/660	2s	8ms/step	-	loss:	4.4090e-04	-	mae:
0.0414417/660	2s	8ms/step	-	loss:	4.4048e-04	-	mae:
0.0413424/660	1s	8ms/step	-	loss:	4.4004e-04	-	mae:
0.0413430/660	1s	8ms/step	-	loss:	4.3963e-04	-	mae:
0.0412437/660	1s	8ms/step	-	loss:	4.3927e-04	-	mae:
0.0412443/660	1s	8ms/step	-	loss:	4.3886e-04	-	mae:
0.0412449/660	1s	8ms/step	-	loss:	4.3852e-04	-	mae:
0.0411455/660	1s	8ms/step	-	loss:	4.3818e-04	-	mae:
0.0411462/660	1s	8ms/step	-	loss:	4.3785e-04	-	mae:
0.0411469/660	1s	8ms/step	-	loss:	4.3748e-04	-	mae:
0.0410476/660	1s	8ms/step	-	loss:	4.3712e-04	-	mae:
0.0410483/660	1s	8ms/step	-	loss:	4.3675e-04	-	mae:
0.0410490/660	1s	8ms/step	-	loss:	4.3637e-04	-	mae:
0.0409497/660	1s	8ms/step	-	loss:	4.3598e-04	-	mae:
0.0409504/660	1s	8ms/step	-	loss:	4.3560e-04	-	mae:
0.0409511/660	1s	8ms/step	-	loss:	4.3523e-04	-	mae:
0.0408518/660	1s	8ms/step	-	loss:	4.3488e-04	-	mae:
0.0408525/660	1s	8ms/step	-	loss:	4.3453e-04	-	mae:
0.0408532/660	1s	8ms/step	-	loss:	4.3382e-04	-	mae:
0.0407538/660	1s	8ms/step	-	loss:	4.3351e-04	-	mae:
0.0407545/660	0s	8ms/step	-	loss:	4.3316e-04	-	mae:
0.0407552/660	0s	8ms/step	-	loss:	4.3283e-04	-	mae:
0.0406559/660	0s	8ms/step	-	loss:	4.3250e-04	-	mae:
0.0406565/660	0s	8ms/step	-	loss:	4.3222e-04	-	mae:
0.0406572/660	0s	8ms/step	-	loss:	4.3191e-04	-	mae:
0.0406576/660	0s	8ms/step	-	loss:	4.3173e-04	-	mae:
0.0405580/660	0s	8ms/step	-	loss:	4.3156e-04	-	mae:
0.0405584/660	0s	8ms/step	-	loss:	4.3138e-04	-	mae:
0.0405589/660	0s	9ms/step	-	loss:	4.3115e-04	-	mae:
0.0405594/660	0s	9ms/step	-	loss:	4.3093e-04	-	mae:
0.0405598/660	0s	9ms/step	-	loss:	4.3075e-04	-	mae:
0.0404603/660							

Battery SoC Estimation Project Report

0s	9ms/step	-	loss:	4.3053e-04	-	mae:	
0.0404608/660	0s	9ms/step	-	loss:	4.3032e-04	-	mae:
0.0404613/660	0s	9ms/step	-	loss:	4.3011e-04	-	mae:
0.0404617/660	0s	9ms/step	-	loss:	4.2994e-04	-	mae:
0.0404622/660	0s	9ms/step	-	loss:	4.2973e-04	-	mae:
0.0404627/660	0s	9ms/step	-	loss:	4.2952e-04	-	mae:
0.0403632/660	0s	9ms/step	-	loss:	4.2932e-04	-	mae:
0.0403637/660	0s	9ms/step	-	loss:	4.2912e-04	-	mae:
0.0403641/660	0s	9ms/step	-	loss:	4.2897e-04	-	mae:
0.0403646/660	0s	9ms/step	-	loss:	4.2877e-04	-	mae:
0.0403650/660	0s	9ms/step	-	loss:	4.2860e-04	-	mae:
0.0402655/660	0s	9ms/step	-	loss:	4.2839e-04	-	mae:
0.0402660/660	0s	9ms/step	-	loss:	4.2819e-04	-	mae:
0.0402660/660	10s	10ms/step	-	loss:	4.2815e-04	-	mae: 0.0402 - val_loss: 3.2343e-04 - val_mae: 0.0306

Epoch 35/200

0.0309	1/660	41:16	4s/step	-	loss:	3.2672e-04	-	mae:
	6/660							
7s	12ms/step	-	loss:	3.0399e-04	-	mae:	0.0285	
	11/660							
0.0309	16/660							
7s	12ms/step	-	loss:	3.2833e-04	-	mae:		
0.0321	21/660							
7s	12ms/step	-	loss:	3.4140e-04	-	mae:		
0.0331	26/660							
7s	12ms/step	-	loss:	3.5134e-04	-	mae:		
0.0339	32/660							
7s	11ms/step	-	loss:	3.5962e-04	-	mae:		
0.0344	38/660							
6s	11ms/step	-	loss:	3.6519e-04	-	mae:		
0.0350	44/660							
6s	11ms/step	-	loss:	3.7154e-04	-	mae:		
0.0356	50/660							
6s	10ms/step	-	loss:	3.7882e-04	-	mae:		
0.0362	57/660							
6s	10ms/step	-	loss:	3.8463e-04	-	mae:		
0.0367	63/660							
5s	10ms/step	-	loss:	3.9027e-04	-	mae:		
0.0370	70/660							
5s	10ms/step	-	loss:	3.9384e-04	-	mae:		
0.0373	76/660							
5s	10ms/step	-	loss:	3.9660e-04	-	mae:		
0.0374	82/660							
5s	10ms/step	-	loss:	3.9819e-04	-	mae:		
0.0375	88/660							
5s	10ms/step	-	loss:	3.9952e-04	-	mae:		
0.0376	94/660							
5s	10ms/step	-	loss:	4.0051e-04	-	mae:		
0.0377100/660	5s	10ms/step	-	loss:	4.0123e-04	-	mae:	
0.0377107/660	5s	10ms/step	-	loss:	4.0180e-04	-	mae:	
0.0378114/660	5s	10ms/step	-	loss:	4.0253e-04	-	mae:	

Battery SoC Estimation Project Report						
			loss:	4.0310e-04	-	mae:
120/660	5s	9ms/step	-	loss:	4.0401e-04	-
0.0379126/660	5s	9ms/step	-	loss:	4.0492e-04	-
0.0380133/660	5s	9ms/step	-	loss:	4.0556e-04	-
0.0381139/660	4s	9ms/step	-	loss:	4.0598e-04	-
0.0381146/660	4s	9ms/step	-	loss:	4.0642e-04	-
0.0382152/660	4s	9ms/step	-	loss:	4.0680e-04	-
0.0382158/660	4s	9ms/step	-	loss:	4.0718e-04	-
0.0382165/660	4s	9ms/step	-	loss:	4.0769e-04	-
0.0383172/660	4s	9ms/step	-	loss:	4.0850e-04	-
0.0384179/660	4s	9ms/step	-	loss:	4.0936e-04	-
0.0384186/660	4s	9ms/step	-	loss:	4.1013e-04	-
0.0385192/660	4s	9ms/step	-	loss:	4.1091e-04	-
0.0386198/660	4s	9ms/step	-	loss:	4.1167e-04	-
0.0386203/660	4s	9ms/step	-	loss:	4.1230e-04	-
0.0387209/660	4s	9ms/step	-	loss:	4.1309e-04	-
0.0388216/660	4s	9ms/step	-	loss:	4.1402e-04	-
0.0389223/660	3s	9ms/step	-	loss:	4.1502e-04	-
0.0389229/660	3s	9ms/step	-	loss:	4.1585e-04	-
0.0390235/660	3s	9ms/step	-	loss:	4.1663e-04	-
0.0391241/660	3s	9ms/step	-	loss:	4.1743e-04	-
0.0392248/660	3s	9ms/step	-	loss:	4.1830e-04	-
0.0392254/660	3s	9ms/step	-	loss:	4.1900e-04	-
0.0393261/660	3s	9ms/step	-	loss:	4.1979e-04	-
0.0394268/660	3s	9ms/step	-	loss:	4.2062e-04	-
0.0394274/660	3s	9ms/step	-	loss:	4.2131e-04	-
0.0395280/660	3s	9ms/step	-	loss:	4.2195e-04	-
0.0396287/660	3s	9ms/step	-	loss:	4.2260e-04	-
0.0396293/660	3s	9ms/step	-	loss:	4.2310e-04	-
0.0397299/660	3s	9ms/step	-	loss:	4.2355e-04	-
0.0397306/660	3s	9ms/step	-	loss:	4.2408e-04	-
0.0397313/660	3s	9ms/step	-	loss:	4.2458e-04	-
0.0398320/660	2s	9ms/step	-	loss:	4.2505e-04	-
0.0398325/660						mae:

Battery SoC Estimation Project Report						
0.0398331/660	2s	9ms/step	-	loss:	4.2537e-04	- mae:
0.0399338/660	2s	9ms/step	-	loss:	4.2573e-04	- mae:
0.0399345/660	2s	9ms/step	-	loss:	4.2609e-04	- mae:
0.0399352/660	2s	9ms/step	-	loss:	4.2640e-04	- mae:
0.0400359/660	2s	9ms/step	-	loss:	4.2667e-04	- mae:
0.0400366/660	2s	9ms/step	-	loss:	4.2688e-04	- mae:
0.0400373/660	2s	9ms/step	-	loss:	4.2706e-04	- mae:
0.0400380/660	2s	9ms/step	-	loss:	4.2720e-04	- mae:
0.0400387/660	2s	9ms/step	-	loss:	4.2731e-04	- mae:
0.0400394/660	2s	9ms/step	-	loss:	4.2741e-04	- mae:
0.0400401/660	2s	9ms/step	-	loss:	4.2748e-04	- mae:
0.0400408/660	2s	9ms/step	-	loss:	4.2750e-04	- mae:
0.0400415/660	2s	9ms/step	-	loss:	4.2744e-04	- mae:
0.0400422/660	2s	9ms/step	-	loss:	4.2739e-04	- mae:
0.0400436/660	1s	9ms/step	-	loss:	4.2736e-04	- mae:
0.0400443/660	1s	9ms/step	-	loss:	4.2733e-04	- mae:
0.0400449/660	1s	9ms/step	-	loss:	4.2729e-04	- mae:
0.0400454/660	1s	9ms/step	-	loss:	4.2726e-04	- mae:
0.0400461/660	1s	9ms/step	-	loss:	4.2723e-04	- mae:
0.0400468/660	1s	9ms/step	-	loss:	4.2719e-04	- mae:
0.0400475/660	1s	9ms/step	-	loss:	4.2716e-04	- mae:
0.0400482/660	1s	9ms/step	-	loss:	4.2710e-04	- mae:
0.0400489/660	1s	9ms/step	-	loss:	4.2703e-04	- mae:
0.0400496/660	1s	9ms/step	-	loss:	4.2694e-04	- mae:
0.0399503/660	1s	9ms/step	-	loss:	4.2684e-04	- mae:
0.0399510/660	1s	9ms/step	-	loss:	4.2674e-04	- mae:
0.0399517/660	1s	9ms/step	-	loss:	4.2666e-04	- mae:
0.0399524/660	1s	9ms/step	-	loss:	4.2656e-04	- mae:
0.0399531/660	1s	9ms/step	-	loss:	4.2645e-04	- mae:
0.0399537/660	1s	9ms/step	-	loss:	4.2633e-04	- mae:
0.0399544/660	0s	9ms/step	-	loss:	4.2621e-04	- mae:
0.0399551/660						

Battery SoC Estimation Project Report

0s	9ms/step	-	loss:	4.2595e-04	-	mae:
0.0399558/660						
0s	9ms/step	-	loss:	4.2582e-04	-	mae:
0.0398565/660						
0s	9ms/step	-	loss:	4.2569e-04	-	mae:
0.0398571/660						
0s	9ms/step	-	loss:	4.2557e-04	-	mae:
0.0398577/660						
0s	9ms/step	-	loss:	4.2545e-04	-	mae:
0.0398582/660						
0s	9ms/step	-	loss:	4.2535e-04	-	mae:
0.0398589/660						
0s	9ms/step	-	loss:	4.2519e-04	-	mae:
0.0398595/660						
0s	9ms/step	-	loss:	4.2505e-04	-	mae:
0.0398601/660						
0s	9ms/step	-	loss:	4.2492e-04	-	mae:
0.0398607/660						
0s	9ms/step	-	loss:	4.2479e-04	-	mae:
0.0397614/660						
0s	9ms/step	-	loss:	4.2465e-04	-	mae:
0.0397621/660						
0s	9ms/step	-	loss:	4.2451e-04	-	mae:
0.0397628/660						
0s	9ms/step	-	loss:	4.2436e-04	-	mae:
0.0397634/660						
0s	9ms/step	-	loss:	4.2424e-04	-	mae:
0.0397640/660						
0s	9ms/step	-	loss:	4.2413e-04	-	mae:
0.0397647/660						
0s	9ms/step	-	loss:	4.2399e-04	-	mae:
0.0397654/660						
0s	8ms/step	-	loss:	4.2384e-04	-	mae:
0.0397660/660						
0s	9ms/step	-	loss:	4.2372e-04	-	mae:
0.0396660/660						

10s 10ms/step - loss: 4.2369e-04 - mae: 0.0396 - val_loss: 3.2420e-04 - val_mae: 0.0304

Epoch 36/200

	1/660	43:29	4s/step	-	loss:	2.9894e-04	-	mae:
0.0276	6/660							
	7s	12ms/step	-	loss:	2.8373e-04	-	mae:	0.0261
	11/660							
	7s	12ms/step	-	loss:	3.1024e-04	-	mae:	
0.0288	16/660							
	7s	12ms/step	-	loss:	3.2485e-04	-	mae:	
0.0303	21/660							
	7s	12ms/step	-	loss:	3.3622e-04	-	mae:	
0.0314	26/660							
	7s	12ms/step	-	loss:	3.4517e-04	-	mae:	
0.0323	32/660							
	7s	11ms/step	-	loss:	3.5266e-04	-	mae:	
0.0330	39/660							
	6s	11ms/step	-	loss:	3.6289e-04	-	mae:	
0.0340	45/660							
	6s	10ms/step	-	loss:	3.7210e-04	-	mae:	
0.0349	52/660							
	6s	10ms/step	-	loss:	3.8167e-04	-	mae:	
0.0358	59/660							
	5s	10ms/step	-	loss:	3.8945e-04	-	mae:	
0.0366	66/660							
	5s	10ms/step	-	loss:	3.9452e-04	-	mae:	
0.0371	73/660							
	5s	9ms/step	-	loss:	3.9812e-04	-	mae:	0.0374
	80/660							
0.0376	9ms/step	-	loss:	4.0044e-04	-	mae:		
	87/660							

Battery SoC Estimation Project Report

0.0379	5s 94/660	9ms/step	-	loss:	4.0253e-04	- mae:
	5s	9ms/step	-	loss:	4.0404e-04	- mae:
0.0380100/660						
0.0381106/660	5s	9ms/step	-	loss:	4.0503e-04	- mae:
0.0382112/660	5s	9ms/step	-	loss:	4.0589e-04	- mae:
0.0382119/660	4s	9ms/step	-	loss:	4.0645e-04	- mae:
0.0384126/660	4s	9ms/step	-	loss:	4.0744e-04	- mae:
0.0384132/660	4s	9ms/step	-	loss:	4.0834e-04	- mae:
0.0385138/660	4s	9ms/step	-	loss:	4.0875e-04	- mae:
0.0385145/660	4s	9ms/step	-	loss:	4.0912e-04	- mae:
0.0386151/660	4s	9ms/step	-	loss:	4.0943e-04	- mae:
0.0386156/660	4s	9ms/step	-	loss:	4.0965e-04	- mae:
0.0386162/660	4s	9ms/step	-	loss:	4.0986e-04	- mae:
0.0386169/660	4s	9ms/step	-	loss:	4.0996e-04	- mae:
0.0386176/660	4s	9ms/step	-	loss:	4.1005e-04	- mae:
0.0386183/660	4s	9ms/step	-	loss:	4.0998e-04	- mae:
0.0386190/660	4s	9ms/step	-	loss:	4.0994e-04	- mae:
0.0386197/660	4s	9ms/step	-	loss:	4.0998e-04	- mae:
0.0386204/660	3s	9ms/step	-	loss:	4.1005e-04	- mae:
0.0387211/660	3s	9ms/step	-	loss:	4.1015e-04	- mae:
0.0387217/660	3s	9ms/step	-	loss:	4.1028e-04	- mae:
0.0387223/660	3s	9ms/step	-	loss:	4.1047e-04	- mae:
0.0387229/660	3s	9ms/step	-	loss:	4.1069e-04	- mae:
0.0387236/660	3s	9ms/step	-	loss:	4.1091e-04	- mae:
0.0388243/660	3s	9ms/step	-	loss:	4.1116e-04	- mae:
0.0388250/660	3s	9ms/step	-	loss:	4.1139e-04	- mae:
0.0388257/660	3s	9ms/step	-	loss:	4.1157e-04	- mae:
0.0388264/660	3s	9ms/step	-	loss:	4.1182e-04	- mae:
0.0389271/660	3s	9ms/step	-	loss:	4.1210e-04	- mae:
0.0389277/660	3s	9ms/step	-	loss:	4.1235e-04	- mae:
0.0389284/660	3s	9ms/step	-	loss:	4.1257e-04	- mae:
0.0389291/660	3s	9ms/step	-	loss:	4.1277e-04	- mae:
0.0390298/660	3s	9ms/step	-	loss:	4.1293e-04	- mae:
0.0390305/660						

Battery SoC Estimation Project Report

0.0390312/660	3s	9ms/step	-	loss:	4.1310e-04	-	mae:
0.0390319/660	2s	9ms/step	-	loss:	4.1329e-04	-	mae:
0.0390326/660	2s	9ms/step	-	loss:	4.1346e-04	-	mae:
0.0391333/660	2s	9ms/step	-	loss:	4.1361e-04	-	mae:
0.0391340/660	2s	8ms/step	-	loss:	4.1381e-04	-	mae:
0.0391345/660	2s	9ms/step	-	loss:	4.1385e-04	-	mae:
0.0391351/660	2s	9ms/step	-	loss:	4.1387e-04	-	mae:
0.0391358/660	2s	9ms/step	-	loss:	4.1387e-04	-	mae:
0.0391365/660	2s	9ms/step	-	loss:	4.1385e-04	-	mae:
0.0391372/660	2s	8ms/step	-	loss:	4.1381e-04	-	mae:
0.0391378/660	2s	8ms/step	-	loss:	4.1377e-04	-	mae:
0.0391385/660	2s	8ms/step	-	loss:	4.1371e-04	-	mae:
0.0391392/660	2s	8ms/step	-	loss:	4.1362e-04	-	mae:
0.0391399/660	2s	8ms/step	-	loss:	4.1349e-04	-	mae:
0.0391406/660	2s	8ms/step	-	loss:	4.1332e-04	-	mae:
0.0391412/660	2s	8ms/step	-	loss:	4.1316e-04	-	mae:
0.0391419/660	2s	8ms/step	-	loss:	4.1295e-04	-	mae:
0.0390426/660	1s	8ms/step	-	loss:	4.1275e-04	-	mae:
0.0390433/660	1s	8ms/step	-	loss:	4.1255e-04	-	mae:
0.0390439/660	1s	8ms/step	-	loss:	4.1238e-04	-	mae:
0.0390446/660	1s	8ms/step	-	loss:	4.1219e-04	-	mae:
0.0390453/660	1s	8ms/step	-	loss:	4.1200e-04	-	mae:
0.0390460/660	1s	8ms/step	-	loss:	4.1182e-04	-	mae:
0.0389466/660	1s	8ms/step	-	loss:	4.1168e-04	-	mae:
0.0389471/660	1s	8ms/step	-	loss:	4.1156e-04	-	mae:
0.0389478/660	1s	8ms/step	-	loss:	4.1139e-04	-	mae:
0.0389485/660	1s	8ms/step	-	loss:	4.1119e-04	-	mae:
0.0389492/660	1s	8ms/step	-	loss:	4.1099e-04	-	mae:
0.0389499/660	1s	8ms/step	-	loss:	4.1080e-04	-	mae:
0.0389505/660	1s	8ms/step	-	loss:	4.1065e-04	-	mae:
0.0388512/660	1s	8ms/step	-	loss:	4.1047e-04	-	mae:
0.0388519/660	1s	8ms/step	-	loss:	4.1028e-04	-	mae:
0.0388526/660							

Battery SoC Estimation Project Report

0.0388533/660	1s	8ms/step	-	loss:	4.1008e-04	-	mae:
0.0388540/660	1s	8ms/step	-	loss:	4.0986e-04	-	mae:
0.0388547/660	0s	8ms/step	-	loss:	4.0965e-04	-	mae:
0.0387554/660	0s	8ms/step	-	loss:	4.0945e-04	-	mae:
0.0387560/660	0s	8ms/step	-	loss:	4.0927e-04	-	mae:
0.0387566/660	0s	8ms/step	-	loss:	4.0912e-04	-	mae:
0.0387573/660	0s	8ms/step	-	loss:	4.0896e-04	-	mae:
0.0387580/660	0s	8ms/step	-	loss:	4.0879e-04	-	mae:
0.0387586/660	0s	8ms/step	-	loss:	4.0862e-04	-	mae:
0.0386592/660	0s	8ms/step	-	loss:	4.0847e-04	-	mae:
0.0386596/660	0s	8ms/step	-	loss:	4.0832e-04	-	mae:
0.0386602/660	0s	8ms/step	-	loss:	4.0822e-04	-	mae:
0.0386609/660	0s	8ms/step	-	loss:	4.0793e-04	-	mae:
0.0386616/660	0s	8ms/step	-	loss:	4.0778e-04	-	mae:
0.0386622/660	0s	8ms/step	-	loss:	4.0764e-04	-	mae:
0.0386629/660	0s	8ms/step	-	loss:	4.0748e-04	-	mae:
0.0386636/660	0s	8ms/step	-	loss:	4.0734e-04	-	mae:
0.0385643/660	0s	8ms/step	-	loss:	4.0720e-04	-	mae:
0.0385650/660	0s	8ms/step	-	loss:	4.0705e-04	-	mae:
0.0385654/660	0s	8ms/step	-	loss:	4.0696e-04	-	mae:
0.0385660/660	0s	8ms/step	-	loss:	4.0683e-04	-	mae:
0.0385660/660	10s	9ms/step	-	loss:	4.0681e-04	-	mae: 0.0385 - val_loss: 3.5309e-04 - val_mae: 0.0332

Epoch 37/200

0.0265	1/660	43:54	4s/step	-	loss:	2.8174e-04	-	mae:
	5/660							
8s	13ms/step	-	loss:	2.5570e-04	-	mae:	0.0236	
	10/660							
0.0264	7s	12ms/step	-	loss:	2.8409e-04	-	mae:	
	15/660							
0.0282	7s	12ms/step	-	loss:	3.0250e-04	-	mae:	
	20/660							
0.0294	7s	12ms/step	-	loss:	3.1503e-04	-	mae:	
	25/660							
0.0305	7s	12ms/step	-	loss:	3.2619e-04	-	mae:	
	30/660							
0.0311	7s	11ms/step	-	loss:	3.3262e-04	-	mae:	
	37/660							
0.0320	6s	11ms/step	-	loss:	3.4203e-04	-	mae:	
	44/660							
0.0334	6s	10ms/step	-	loss:	3.5658e-04	-	mae:	
	50/660							
0.0347	6s	10ms/step	-	loss:	3.6979e-04	-	mae:	
	57/660							

Battery SoC Estimation Project Report							
0.0361	5s	10ms/step	-	loss:	3.8438e-04	-	mae:
	64/660						
0.0373	5s	10ms/step	-	loss:	3.9617e-04	-	mae:
	70/660						
0.0381	5s	10ms/step	-	loss:	4.0394e-04	-	mae:
	76/660						
0.0386	5s	10ms/step	-	loss:	4.0991e-04	-	mae:
	83/660						
	5s	9ms/step	-	loss:	4.1582e-04	-	mae: 0.0392
	90/660						
0.0397	5s	9ms/step	-	loss:	4.2027e-04	-	mae:
	97/660						
0.0401102/660	5s	9ms/step	-	loss:	4.2444e-04	-	mae:
0.0403108/660	5s	9ms/step	-	loss:	4.2693e-04	-	mae:
0.0405115/660	5s	9ms/step	-	loss:	4.2940e-04	-	mae:
0.0408122/660	4s	9ms/step	-	loss:	4.3178e-04	-	mae:
0.0410129/660	4s	9ms/step	-	loss:	4.3410e-04	-	mae:
0.0412135/660	4s	9ms/step	-	loss:	4.3587e-04	-	mae:
0.0413142/660	4s	9ms/step	-	loss:	4.3701e-04	-	mae:
0.0414149/660	4s	9ms/step	-	loss:	4.3794e-04	-	mae:
0.0414156/660	4s	9ms/step	-	loss:	4.3866e-04	-	mae:
0.0415163/660	4s	9ms/step	-	loss:	4.3915e-04	-	mae:
0.0415169/660	4s	9ms/step	-	loss:	4.3934e-04	-	mae:
0.0415176/660	4s	9ms/step	-	loss:	4.3947e-04	-	mae:
0.0415183/660	4s	9ms/step	-	loss:	4.3959e-04	-	mae:
0.0415190/660	4s	9ms/step	-	loss:	4.3945e-04	-	mae:
0.0415197/660	4s	9ms/step	-	loss:	4.3925e-04	-	mae:
0.0414204/660	3s	9ms/step	-	loss:	4.3906e-04	-	mae:
0.0414210/660	3s	9ms/step	-	loss:	4.3881e-04	-	mae:
0.0414217/660	3s	9ms/step	-	loss:	4.3860e-04	-	mae:
0.0414224/660	3s	9ms/step	-	loss:	4.3840e-04	-	mae:
0.0414228/660	3s	9ms/step	-	loss:	4.3830e-04	-	mae:
0.0414232/660	3s	9ms/step	-	loss:	4.3825e-04	-	mae:
0.0414236/660	3s	9ms/step	-	loss:	4.3819e-04	-	mae:
0.0413240/660	3s	9ms/step	-	loss:	4.3811e-04	-	mae:
0.0413244/660	3s	9ms/step	-	loss:	4.3805e-04	-	mae:
0.0413248/660	3s	9ms/step	-	loss:	4.3796e-04	-	mae:
0.0413253/660	3s	9ms/step	-	loss:	4.3786e-04	-	mae:
0.0413258/660	3s	9ms/step	-	loss:	4.3770e-04	-	mae:

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0.0413263/660	3s	9ms/step	-	loss:	4.3753e-04	-	mae:
0.0413268/660	3s	9ms/step	-	loss:	4.3743e-04	-	mae:
0.0413272/660	3s	9ms/step	-	loss:	4.3731e-04	-	mae:
0.0413277/660	3s	9ms/step	-	loss:	4.3723e-04	-	mae:
0.0412282/660	3s	9ms/step	-	loss:	4.3713e-04	-	mae:
0.0412287/660	3s	9ms/step	-	loss:	4.3699e-04	-	mae:
0.0412292/660	3s	9ms/step	-	loss:	4.3683e-04	-	mae:
0.0412297/660	3s	9ms/step	-	loss:	4.3667e-04	-	mae:
0.0412302/660	3s	10ms/step	-	loss:	4.3631e-04	-	mae:
0.0412306/660	3s	10ms/step	-	loss:	4.3618e-04	-	mae:
0.0411311/660	3s	10ms/step	-	loss:	4.3600e-04	-	mae:
0.0411315/660	3s	10ms/step	-	loss:	4.3586e-04	-	mae:
0.0411319/660	3s	10ms/step	-	loss:	4.3572e-04	-	mae:
0.0411324/660	3s	10ms/step	-	loss:	4.3553e-04	-	mae:
0.0411329/660	3s	10ms/step	-	loss:	4.3536e-04	-	mae:
0.0411334/660	3s	10ms/step	-	loss:	4.3516e-04	-	mae:
0.0410339/660	3s	10ms/step	-	loss:	4.3495e-04	-	mae:
0.0410344/660	3s	10ms/step	-	loss:	4.3473e-04	-	mae:
0.0410348/660	3s	10ms/step	-	loss:	4.3456e-04	-	mae:
0.0410352/660	3s	10ms/step	-	loss:	4.3437e-04	-	mae:
0.0410356/660	3s	10ms/step	-	loss:	4.3418e-04	-	mae:
0.0410360/660	3s	10ms/step	-	loss:	4.3398e-04	-	mae:
0.0409365/660	2s	10ms/step	-	loss:	4.3372e-04	-	mae:
0.0409369/660	2s	10ms/step	-	loss:	4.3351e-04	-	mae:
0.0409374/660	2s	10ms/step	-	loss:	4.3323e-04	-	mae:
0.0409378/660	2s	10ms/step	-	loss:	4.3300e-04	-	mae:
0.0408383/660	2s	10ms/step	-	loss:	4.3272e-04	-	mae:
0.0408388/660	2s	10ms/step	-	loss:	4.3243e-04	-	mae:
0.0408392/660	2s	10ms/step	-	loss:	4.3219e-04	-	mae:
0.0408396/660	2s	10ms/step	-	loss:	4.3194e-04	-	mae:
0.0407400/660	2s	10ms/step	-	loss:	4.3168e-04	-	mae:
0.0407404/660	2s	10ms/step	-	loss:	4.3141e-04	-	mae:
0.0407408/660							

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2s 0.0407415/660	10ms/step	-	loss:	4.3113e-04	-	mae:
2s 0.0406422/660	10ms/step	-	loss:	4.3064e-04	-	mae:
2s 0.0406429/660	10ms/step	-	loss:	4.3016e-04	-	mae:
2s 0.0405436/660	10ms/step	-	loss:	4.2970e-04	-	mae:
2s 0.0405443/660	10ms/step	-	loss:	4.2925e-04	-	mae:
2s 0.0404450/660	10ms/step	-	loss:	4.2881e-04	-	mae:
2s 0.0404457/660	10ms/step	-	loss:	4.2838e-04	-	mae:
2s 0.0404463/660	10ms/step	-	loss:	4.2796e-04	-	mae:
1s 0.0403470/660	10ms/step	-	loss:	4.2762e-04	-	mae:
1s 0.0403477/660	10ms/step	-	loss:	4.2723e-04	-	mae:
1s 0.0403483/660	10ms/step	-	loss:	4.2684e-04	-	mae:
1s 0.0402490/660	10ms/step	-	loss:	4.2649e-04	-	mae:
1s 0.0402497/660	10ms/step	-	loss:	4.2608e-04	-	mae:
1s 0.0401503/660	10ms/step	-	loss:	4.2567e-04	-	mae:
1s 0.0401509/660	10ms/step	-	loss:	4.2533e-04	-	mae:
1s 0.0401516/660	10ms/step	-	loss:	4.2500e-04	-	mae:
1s 0.0400522/660	10ms/step	-	loss:	4.2461e-04	-	mae:
1s 0.0400529/660	10ms/step	-	loss:	4.2427e-04	-	mae:
1s 0.0400536/660	10ms/step	-	loss:	4.2387e-04	-	mae:
1s 0.0399543/660	10ms/step	-	loss:	4.2345e-04	-	mae:
1s 0.0399550/660	10ms/step	-	loss:	4.2304e-04	-	mae:
1s 0.0399557/660	10ms/step	-	loss:	4.2265e-04	-	mae:
1s 0.0398564/660	10ms/step	-	loss:	4.2227e-04	-	mae:
0s 0.0398571/660	10ms/step	-	loss:	4.2189e-04	-	mae:
0s 0.0397578/660	10ms/step	-	loss:	4.2152e-04	-	mae:
0s 0.0397584/660	10ms/step	-	loss:	4.2116e-04	-	mae:
0s 0.0397591/660	10ms/step	-	loss:	4.2084e-04	-	mae:
0s 0.0397598/660	10ms/step	-	loss:	4.2048e-04	-	mae:
0s 0.0396605/660	10ms/step	-	loss:	4.2013e-04	-	mae:
0s 0.0396612/660	10ms/step	-	loss:	4.1979e-04	-	mae:
0s 0.0396619/660	10ms/step	-	loss:	4.1947e-04	-	mae:
0s 0.0395625/660	10ms/step	-	loss:	4.1913e-04	-	mae:
0s 0.0395632/660	10ms/step	-	loss:	4.1885e-04	-	mae:

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0s 0.0395639/660	10ms/step	-	loss:	4.1853e-04	-	mae:	
0s 0.0394645/660	10ms/step	-	loss:	4.1822e-04	-	mae:	
0s 0.0394650/660	10ms/step	-	loss:	4.1797e-04	-	mae:	
0s 0.0394657/660	10ms/step	-	loss:	4.1774e-04	-	mae:	
0s 0.0394660/660	10ms/step	-	loss:	4.1744e-04	-	mae:	
11s 10ms/step - loss: 4.1726e-04 - mae: 0.0393 - val_loss: 3.1078e-04 - val_mae: 0.0295							
Epoch 38/200							
0.0308	1/660 4/660	38:48	4s/step	-	loss:	3.2328e-04	
0.0270	11s 8/660	18ms/step	-	loss:	2.8761e-04	-	mae:
0.0266	10s 12/660	17ms/step	-	loss:	2.8392e-04	-	mae:
0.0282	10s 16/660	16ms/step	-	loss:	3.0050e-04	-	mae:
0.0290	10s 20/660	16ms/step	-	loss:	3.0957e-04	-	mae:
0.0298	10s 24/660	16ms/step	-	loss:	3.1717e-04	-	mae:
0.0307	9s 28/660	16ms/step	-	loss:	3.2688e-04	-	mae:
0.0320	9s 32/660	16ms/step	-	loss:	3.3341e-04	-	mae: 0.0314
0.0327	9s 37/660	15ms/step	-	loss:	3.3984e-04	-	mae:
0.0338	8s 43/660	15ms/step	-	loss:	3.4770e-04	-	mae:
0.0346	8s 49/660	14ms/step	-	loss:	3.5869e-04	-	mae:
0.0353	7s 55/660	13ms/step	-	loss:	3.6699e-04	-	mae:
0.0359	7s 61/660	13ms/step	-	loss:	3.7431e-04	-	mae:
0.0364	7s 67/660	12ms/step	-	loss:	3.8040e-04	-	mae:
0.0367	6s 73/660	12ms/step	-	loss:	3.8474e-04	-	mae:
0.0370	6s 80/660	12ms/step	-	loss:	3.8817e-04	-	mae:
0.0372	6s 87/660	11ms/step	-	loss:	3.9090e-04	-	mae:
0.0373100/660	6s 93/660	11ms/step	-	loss:	3.9312e-04	-	mae:
0.0374106/660	6s 99/660	11ms/step	-	loss:	3.9443e-04	-	mae:
0.0375113/660	5s 105/660	11ms/step	-	loss:	3.9555e-04	-	mae:
0.0375119/660	5s 111/660	11ms/step	-	loss:	3.9630e-04	-	mae:
0.0376125/660	5s 117/660	10ms/step	-	loss:	3.9686e-04	-	mae:
0.0377131/660	5s 123/660	10ms/step	-	loss:	3.9763e-04	-	mae:
0.0377138/660	5s 129/660	10ms/step	-	loss:	3.9842e-04	-	mae:
0.0378144/660	5s 135/660	10ms/step	-	loss:	3.9889e-04	-	mae:
0.0378150/660	5s 141/660	10ms/step	-	loss:	3.9931e-04	-	mae:

Battery SoC Estimation Project Report						
5s 0.0378156/660	10ms/step	-	loss:	3.9967e-04	-	mae:
5s 0.0378162/660	10ms/step	-	loss:	3.9974e-04	-	mae:
4s 0.0378169/660	10ms/step	-	loss:	3.9973e-04	-	mae:
4s 0.0378176/660	10ms/step	-	loss:	3.9976e-04	-	mae:
4s 0.0378183/660	10ms/step	-	loss:	3.9979e-04	-	mae:
4s 0.0378190/660	10ms/step	-	loss:	3.9962e-04	-	mae:
4s 0.0378197/660	10ms/step	-	loss:	3.9947e-04	-	mae:
4s 0.0378203/660	10ms/step	-	loss:	3.9935e-04	-	mae:
4s 0.0377210/660	10ms/step	-	loss:	3.9921e-04	-	mae:
4s 0.0377217/660	10ms/step	-	loss:	3.9906e-04	-	mae:
4s 0.0377223/660	10ms/step	-	loss:	3.9896e-04	-	mae:
4s 0.0377229/660	10ms/step	-	loss:	3.9898e-04	-	mae:
4s 236/660	9ms/step	-	loss:	3.9901e-04	-	mae: 0.0377
4s 0.0377243/660	9ms/step	-	loss:	3.9903e-04	-	mae:
3s 0.0377249/660	9ms/step	-	loss:	3.9906e-04	-	mae:
3s 0.0377256/660	9ms/step	-	loss:	3.9906e-04	-	mae:
3s 0.0377263/660	9ms/step	-	loss:	3.9899e-04	-	mae:
3s 0.0377270/660	9ms/step	-	loss:	3.9898e-04	-	mae:
3s 0.0377276/660	9ms/step	-	loss:	3.9899e-04	-	mae:
3s 0.0377283/660	9ms/step	-	loss:	3.9902e-04	-	mae:
3s 0.0377290/660	9ms/step	-	loss:	3.9901e-04	-	mae:
3s 0.0377297/660	9ms/step	-	loss:	3.9898e-04	-	mae:
3s 0.0377304/660	9ms/step	-	loss:	3.9893e-04	-	mae:
3s 0.0377310/660	9ms/step	-	loss:	3.9890e-04	-	mae:
3s 0.0377317/660	9ms/step	-	loss:	3.9891e-04	-	mae:
3s 0.0377324/660	9ms/step	-	loss:	3.9894e-04	-	mae:
3s 0.0377331/660	9ms/step	-	loss:	3.9895e-04	-	mae:
2s 0.0377338/660	9ms/step	-	loss:	3.9897e-04	-	mae:
2s 0.0377345/660	9ms/step	-	loss:	3.9897e-04	-	mae:
2s 0.0377350/660	9ms/step	-	loss:	3.9896e-04	-	mae:
2s 0.0377356/660	9ms/step	-	loss:	3.9895e-04	-	mae:
2s 0.0377363/660	9ms/step	-	loss:	3.9893e-04	-	mae:
2s 0.0377370/660	9ms/step	-	loss:	3.9889e-04	-	mae:

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0.0377376/660	2s	9ms/step	-	loss:	3.9886e-04	- mae:
0.0377383/660	2s	9ms/step	-	loss:	3.9882e-04	- mae:
0.0377390/660	2s	9ms/step	-	loss:	3.9879e-04	- mae:
0.0377396/660	2s	9ms/step	-	loss:	3.9875e-04	- mae:
0.0377403/660	2s	9ms/step	-	loss:	3.9870e-04	- mae:
0.0377410/660	2s	9ms/step	-	loss:	3.9862e-04	- mae:
0.0377417/660	2s	9ms/step	-	loss:	3.9854e-04	- mae:
0.0376424/660	2s	9ms/step	-	loss:	3.9846e-04	- mae:
0.0376431/660	2s	9ms/step	-	loss:	3.9841e-04	- mae:
0.0376438/660	1s	9ms/step	-	loss:	3.9835e-04	- mae:
0.0376445/660	1s	9ms/step	-	loss:	3.9830e-04	- mae:
0.0376452/660	1s	9ms/step	-	loss:	3.9821e-04	- mae:
0.0376459/660	1s	9ms/step	-	loss:	3.9817e-04	- mae:
0.0376466/660	1s	9ms/step	-	loss:	3.9814e-04	- mae:
0.0376473/660	1s	9ms/step	-	loss:	3.9810e-04	- mae:
0.0376478/660	1s	9ms/step	-	loss:	3.9806e-04	- mae:
0.0376485/660	1s	9ms/step	-	loss:	3.9799e-04	- mae:
0.0376492/660	1s	9ms/step	-	loss:	3.9791e-04	- mae:
0.0376498/660	1s	9ms/step	-	loss:	3.9784e-04	- mae:
0.0376505/660	1s	9ms/step	-	loss:	3.9777e-04	- mae:
0.0376511/660	1s	9ms/step	-	loss:	3.9772e-04	- mae:
0.0375518/660	1s	9ms/step	-	loss:	3.9763e-04	- mae:
0.0375525/660	1s	9ms/step	-	loss:	3.9753e-04	- mae:
0.0375532/660	1s	9ms/step	-	loss:	3.9742e-04	- mae:
0.0375538/660	1s	9ms/step	-	loss:	3.9731e-04	- mae:
0.0375544/660	1s	9ms/step	-	loss:	3.9720e-04	- mae:
0.0375551/660	0s	9ms/step	-	loss:	3.9708e-04	- mae:
0.0375558/660	0s	9ms/step	-	loss:	3.9696e-04	- mae:
0.0375564/660	0s	9ms/step	-	loss:	3.9685e-04	- mae:
0.0375571/660	0s	9ms/step	-	loss:	3.9672e-04	- mae:
0.0374577/660	0s	9ms/step	-	loss:	3.9661e-04	- mae:
0.0374584/660	0s	9ms/step	-	loss:	3.9647e-04	- mae:
0.0374591/660						

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0s 0.0374597/660	9ms/step	-	loss:	3.9632e-04	-	mae:		
0s 0.0374602/660	9ms/step	-	loss:	3.9620e-04	-	mae:		
0s 0.0374609/660	9ms/step	-	loss:	3.9611e-04	-	mae:		
0s 0.0374615/660	9ms/step	-	loss:	3.9598e-04	-	mae:		
0s 0.0374621/660	9ms/step	-	loss:	3.9587e-04	-	mae:		
0s 0.0373627/660	9ms/step	-	loss:	3.9575e-04	-	mae:		
0s 0.0373633/660	9ms/step	-	loss:	3.9564e-04	-	mae:		
0s 0.0373639/660	9ms/step	-	loss:	3.9554e-04	-	mae:		
0s 0.0373646/660	9ms/step	-	loss:	3.9544e-04	-	mae:		
0s 0.0373653/660	9ms/step	-	loss:	3.9533e-04	-	mae:		
0s 0.0373660/660	9ms/step	-	loss:	3.9520e-04	-	mae:		
0s 0.0373660/660	9ms/step	-	loss:	3.9508e-04	-	mae:		
10s 9ms/step - loss: 3.9506e-04 - mae: 0.0373 - val_loss: 3.8728e-04 - val_mae: 0.0371								
Epoch 39/200								
0.0329	1/660	16s	25ms/step	-	loss:	3.4362e-04	-	mae:
	7/660							
5s	9ms/step	-	loss:	2.9106e-04	-	mae:	0.0273	
	13/660							
5s	9ms/step	-	loss:	3.0777e-04	-	mae:		
0.0289	20/660							
5s	9ms/step	-	loss:	3.2216e-04	-	mae:		
0.0302	27/660							
5s	9ms/step	-	loss:	3.3633e-04	-	mae:		
0.0316	33/660							
5s	9ms/step	-	loss:	3.4874e-04	-	mae:		
0.0328	40/660							
5s	8ms/step	-	loss:	3.6318e-04	-	mae:		
0.0342	47/660							
5s	8ms/step	-	loss:	3.7548e-04	-	mae:		
0.0354	54/660							
5s	8ms/step	-	loss:	3.8633e-04	-	mae:		
0.0364	61/660							
4s	8ms/step	-	loss:	3.9451e-04	-	mae:		
0.0372	68/660							
4s	8ms/step	-	loss:	3.9992e-04	-	mae:		
0.0377	75/660							
4s	8ms/step	-	loss:	4.0397e-04	-	mae:		
0.0381	82/660							
4s	8ms/step	-	loss:	4.0693e-04	-	mae:		
0.0384	89/660							
4s	8ms/step	-	loss:	4.0902e-04	-	mae:		
0.0386	96/660							
4s	8ms/step	-	loss:	4.1066e-04	-	mae:		
0.0388103/660								
4s	8ms/step	-	loss:	4.1190e-04	-	mae:		
0.0389110/660								
4s	8ms/step	-	loss:	4.1272e-04	-	mae:		
0.0390117/660								
4s	8ms/step	-	loss:	4.1350e-04	-	mae:		
0.0391124/660								
4s	8ms/step	-	loss:	4.1433e-04	-	mae:		
0.0392131/660								
4s	8ms/step	-	loss:	4.1470e-04	-	mae:		
0.0392136/660								

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4s	8ms/step	-	loss:	4.1486e-04	-	mae:
0.0392143/660						
4s	8ms/step	-	loss:	4.1489e-04	-	mae:
0.0392150/660						
4s	8ms/step	-	loss:	4.1483e-04	-	mae:
0.0392157/660						
4s	8ms/step	-	loss:	4.1471e-04	-	mae:
0.0392164/660						
4s	8ms/step	-	loss:	4.1441e-04	-	mae:
0.0392170/660						
4s	8ms/step	-	loss:	4.1420e-04	-	mae:
0.0392177/660						
3s	8ms/step	-	loss:	4.1391e-04	-	mae:
0.0391184/660						
3s	8ms/step	-	loss:	4.1339e-04	-	mae:
0.0391191/660						
3s	8ms/step	-	loss:	4.1289e-04	-	mae:
0.0390198/660						
3s	8ms/step	-	loss:	4.1241e-04	-	mae:
0.0390205/660						
3s	8ms/step	-	loss:	4.1193e-04	-	mae:
0.0389212/660						
3s	8ms/step	-	loss:	4.1146e-04	-	mae:
0.0389219/660						
3s	8ms/step	-	loss:	4.1110e-04	-	mae:
0.0389226/660						
3s	8ms/step	-	loss:	4.1082e-04	-	mae:
0.0388233/660						
3s	8ms/step	-	loss:	4.1055e-04	-	mae:
0.0388240/660						
3s	8ms/step	-	loss:	4.1030e-04	-	mae:
0.0388247/660						
3s	8ms/step	-	loss:	4.1003e-04	-	mae:
0.0388254/660						
3s	8ms/step	-	loss:	4.0973e-04	-	mae:
0.0387260/660						
3s	8ms/step	-	loss:	4.0949e-04	-	mae:
0.0387266/660						
3s	8ms/step	-	loss:	4.0930e-04	-	mae:
0.0387273/660						
3s	8ms/step	-	loss:	4.0910e-04	-	mae:
0.0387280/660						
3s	8ms/step	-	loss:	4.0890e-04	-	mae:
0.0387287/660						
3s	8ms/step	-	loss:	4.0863e-04	-	mae:
0.0386293/660						
3s	8ms/step	-	loss:	4.0841e-04	-	mae:
0.0386300/660						
2s	8ms/step	-	loss:	4.0812e-04	-	mae:
0.0386307/660						
2s	8ms/step	-	loss:	4.0783e-04	-	mae:
0.0386314/660						
2s	8ms/step	-	loss:	4.0756e-04	-	mae:
0.0385320/660						
2s	8ms/step	-	loss:	4.0735e-04	-	mae:
0.0385327/660						
2s	8ms/step	-	loss:	4.0712e-04	-	mae:
0.0385334/660						
2s	8ms/step	-	loss:	4.0688e-04	-	mae:
0.0385341/660						
2s	8ms/step	-	loss:	4.0664e-04	-	mae:
0.0385348/660						
2s	8ms/step	-	loss:	4.0638e-04	-	mae:
0.0384354/660						
2s	8ms/step	-	loss:	4.0615e-04	-	mae:
0.0384361/660						

Battery SoC Estimation Project Report						
0.0384368/660	2s	8ms/step	-	loss:	4.0586e-04	- mae:
0.0383375/660	2s	8ms/step	-	loss:	4.0557e-04	- mae:
0.0383380/660	2s	8ms/step	-	loss:	4.0526e-04	- mae:
0.0383385/660	2s	8ms/step	-	loss:	4.0503e-04	- mae:
0.0383391/660	2s	8ms/step	-	loss:	4.0482e-04	- mae:
0.0383398/660	2s	8ms/step	-	loss:	4.0454e-04	- mae:
0.0382405/660	2s	8ms/step	-	loss:	4.0418e-04	- mae:
0.0382411/660	2s	8ms/step	-	loss:	4.0380e-04	- mae:
0.0381418/660	1s	8ms/step	-	loss:	4.0347e-04	- mae:
0.0381425/660	1s	8ms/step	-	loss:	4.0306e-04	- mae:
0.0381432/660	1s	8ms/step	-	loss:	4.0268e-04	- mae:
0.0380439/660	1s	8ms/step	-	loss:	4.0233e-04	- mae:
0.0380446/660	1s	8ms/step	-	loss:	4.0199e-04	- mae:
0.0380452/660	1s	8ms/step	-	loss:	4.0165e-04	- mae:
0.0379459/660	1s	8ms/step	-	loss:	4.0137e-04	- mae:
0.0379466/660	1s	8ms/step	-	loss:	4.0105e-04	- mae:
0.0379473/660	1s	8ms/step	-	loss:	4.0074e-04	- mae:
0.0379479/660	1s	8ms/step	-	loss:	4.0043e-04	- mae:
0.0378486/660	1s	8ms/step	-	loss:	4.0016e-04	- mae:
0.0378493/660	1s	8ms/step	-	loss:	3.9982e-04	- mae:
0.0378500/660	1s	8ms/step	-	loss:	3.9947e-04	- mae:
0.0377507/660	1s	8ms/step	-	loss:	3.9912e-04	- mae:
0.0377512/660	1s	8ms/step	-	loss:	3.9881e-04	- mae:
0.0377519/660	1s	8ms/step	-	loss:	3.9858e-04	- mae:
0.0377524/660	1s	8ms/step	-	loss:	3.9826e-04	- mae:
0.0376529/660	1s	8ms/step	-	loss:	3.9803e-04	- mae:
0.0376533/660	1s	8ms/step	-	loss:	3.9779e-04	- mae:
0.0376538/660	1s	8ms/step	-	loss:	3.9760e-04	- mae:
0.0376543/660	0s	8ms/step	-	loss:	3.9736e-04	- mae:
0.0375548/660	0s	8ms/step	-	loss:	3.9689e-04	- mae:
0.0375553/660	0s	8ms/step	-	loss:	3.9667e-04	- mae:
0.0375557/660	0s	8ms/step	-	loss:	3.9649e-04	- mae:
0.0375562/660						

Battery SoC Estimation Project Report

0s 0.0375567/660	8ms/step	-	loss:	3.9627e-04	-	mae:
0s 0.0374572/660	9ms/step	-	loss:	3.9606e-04	-	mae:
0s 0.0374577/660	9ms/step	-	loss:	3.9584e-04	-	mae:
0s 0.0374582/660	9ms/step	-	loss:	3.9563e-04	-	mae:
0s 0.0374587/660	9ms/step	-	loss:	3.9541e-04	-	mae:
0s 0.0374592/660	9ms/step	-	loss:	3.9519e-04	-	mae:
0s 0.0373596/660	9ms/step	-	loss:	3.9498e-04	-	mae:
0s 0.0373599/660	9ms/step	-	loss:	3.9481e-04	-	mae:
0s 0.0373603/660	9ms/step	-	loss:	3.9468e-04	-	mae:
0s 0.0373608/660	9ms/step	-	loss:	3.9452e-04	-	mae:
0s 0.0373612/660	9ms/step	-	loss:	3.9432e-04	-	mae:
0s 0.0373617/660	9ms/step	-	loss:	3.9416e-04	-	mae:
0s 0.0373622/660	9ms/step	-	loss:	3.9396e-04	-	mae:
0s 0.0372627/660	9ms/step	-	loss:	3.9377e-04	-	mae:
0s 0.0372632/660	9ms/step	-	loss:	3.9357e-04	-	mae:
0s 0.0372637/660	9ms/step	-	loss:	3.9338e-04	-	mae:
0s 0.0372641/660	9ms/step	-	loss:	3.9320e-04	-	mae:
0s 0.0372645/660	9ms/step	-	loss:	3.9306e-04	-	mae:
0s 0.0372649/660	9ms/step	-	loss:	3.9292e-04	-	mae:
0s 0.0371653/660	9ms/step	-	loss:	3.9278e-04	-	mae:
0s 0.0371658/660	9ms/step	-	loss:	3.9263e-04	-	mae:
0s 0.0371660/660	9ms/step	-	loss:	3.9246e-04	-	mae:

7s 10ms/step - loss: 3.9236e-04 - mae: 0.0371 - val_loss: 3.5568e-04 - val_mae: 0.0328

Epoch 40/200

1/660	39:09	4s/step	-	loss:	2.7407e-04	-	mae:
0.0251	6/660						
7s	12ms/step	-	loss:	3.1820e-04	-	mae:	0.0295
11/660							
0.0316	15/660						
7s	12ms/step	-	loss:	3.3994e-04	-	mae:	
0.0328	20/660						
8s	12ms/step	-	loss:	3.5192e-04	-	mae:	
0.0338	26/660						
7s	12ms/step	-	loss:	3.6229e-04	-	mae:	
0.0349	31/660						
7s	11ms/step	-	loss:	3.7367e-04	-	mae:	
0.0353	37/660						
6s	11ms/step	-	loss:	3.8208e-04	-	mae:	
0.0357	44/660						
6s	10ms/step	-	loss:	3.8940e-04	-	mae:	
0.0364	51/660						
6s	10ms/step	-	loss:	3.9485e-04	-	mae:	
0.0369	58/660						

Battery SoC Estimation Project Report							
0.0374	5s	10ms/step	-	loss:	3.9974e-04	-	mae:
	64/660						
0.0376	5s	10ms/step	-	loss:	4.0262e-04	-	mae:
	71/660						
	5s	9ms/step	-	loss:	4.0493e-04	-	mae: 0.0379
	78/660						
0.0380	5s	9ms/step	-	loss:	4.0605e-04	-	mae:
	85/660						
0.0381	5s	9ms/step	-	loss:	4.0709e-04	-	mae:
	91/660						
0.0382	5s	9ms/step	-	loss:	4.0744e-04	-	mae:
	98/660						
0.0382105/660	5s	9ms/step	-	loss:	4.0765e-04	-	mae:
0.0382112/660	4s	9ms/step	-	loss:	4.0754e-04	-	mae:
0.0382119/660	4s	9ms/step	-	loss:	4.0718e-04	-	mae:
0.0382126/660	4s	9ms/step	-	loss:	4.0714e-04	-	mae:
0.0382132/660	4s	9ms/step	-	loss:	4.0706e-04	-	mae:
0.0382138/660	4s	9ms/step	-	loss:	4.0671e-04	-	mae:
0.0382143/660	4s	9ms/step	-	loss:	4.0636e-04	-	mae:
0.0381149/660	4s	9ms/step	-	loss:	4.0600e-04	-	mae:
0.0381155/660	4s	9ms/step	-	loss:	4.0554e-04	-	mae:
0.0381161/660	4s	9ms/step	-	loss:	4.0504e-04	-	mae:
0.0380167/660	4s	9ms/step	-	loss:	4.0445e-04	-	mae:
0.0380173/660	4s	9ms/step	-	loss:	4.0382e-04	-	mae:
0.0379179/660	4s	9ms/step	-	loss:	4.0334e-04	-	mae:
0.0379185/660	4s	9ms/step	-	loss:	4.0273e-04	-	mae:
0.0378191/660	4s	9ms/step	-	loss:	4.0201e-04	-	mae:
0.0378197/660	4s	9ms/step	-	loss:	4.0140e-04	-	mae:
0.0377203/660	4s	9ms/step	-	loss:	4.0084e-04	-	mae:
0.0377210/660	3s	9ms/step	-	loss:	4.0033e-04	-	mae:
0.0376217/660	3s	9ms/step	-	loss:	3.9979e-04	-	mae:
0.0376223/660	3s	9ms/step	-	loss:	3.9933e-04	-	mae:
0.0376230/660	3s	9ms/step	-	loss:	3.9906e-04	-	mae:
0.0375237/660	3s	9ms/step	-	loss:	3.9877e-04	-	mae:
0.0375244/660	3s	9ms/step	-	loss:	3.9847e-04	-	mae:
0.0375251/660	3s	9ms/step	-	loss:	3.9819e-04	-	mae:
0.0375257/660	3s	9ms/step	-	loss:	3.9791e-04	-	mae:
0.0375262/660	3s	9ms/step	-	loss:	3.9763e-04	-	mae:
0.0374269/660	3s	9ms/step	-	loss:	3.9746e-04	-	mae:

Battery SoC Estimation Project Report

0.0374276/660	3s	9ms/step	-	loss:	3.9727e-04	-	mae:
0.0374283/660	3s	9ms/step	-	loss:	3.9712e-04	-	mae:
0.0374290/660	3s	9ms/step	-	loss:	3.9693e-04	-	mae:
0.0374296/660	3s	9ms/step	-	loss:	3.9671e-04	-	mae:
0.0374303/660	3s	9ms/step	-	loss:	3.9649e-04	-	mae:
0.0373310/660	3s	9ms/step	-	loss:	3.9626e-04	-	mae:
0.0373317/660	2s	9ms/step	-	loss:	3.9604e-04	-	mae:
0.0373324/660	2s	9ms/step	-	loss:	3.9583e-04	-	mae:
0.0373331/660	2s	9ms/step	-	loss:	3.9560e-04	-	mae:
0.0373338/660	2s	9ms/step	-	loss:	3.9539e-04	-	mae:
0.0372345/660	2s	9ms/step	-	loss:	3.9514e-04	-	mae:
0.0372352/660	2s	9ms/step	-	loss:	3.9488e-04	-	mae:
0.0372359/660	2s	8ms/step	-	loss:	3.9461e-04	-	mae:
0.0372366/660	2s	8ms/step	-	loss:	3.9433e-04	-	mae:
0.0371372/660	2s	8ms/step	-	loss:	3.9406e-04	-	mae:
0.0371379/660	2s	8ms/step	-	loss:	3.9382e-04	-	mae:
0.0371386/660	2s	8ms/step	-	loss:	3.9354e-04	-	mae:
0.0371391/660	2s	8ms/step	-	loss:	3.9327e-04	-	mae:
0.0370398/660	2s	8ms/step	-	loss:	3.9306e-04	-	mae:
0.0370405/660	2s	8ms/step	-	loss:	3.9277e-04	-	mae:
0.0370412/660	2s	8ms/step	-	loss:	3.9244e-04	-	mae:
0.0370419/660	2s	8ms/step	-	loss:	3.9210e-04	-	mae:
0.0369426/660	1s	8ms/step	-	loss:	3.9175e-04	-	mae:
0.0369432/660	1s	8ms/step	-	loss:	3.9143e-04	-	mae:
0.0369439/660	1s	8ms/step	-	loss:	3.9117e-04	-	mae:
0.0368446/660	1s	8ms/step	-	loss:	3.9087e-04	-	mae:
0.0368453/660	1s	8ms/step	-	loss:	3.9058e-04	-	mae:
0.0368460/660	1s	8ms/step	-	loss:	3.9031e-04	-	mae:
0.0368467/660	1s	8ms/step	-	loss:	3.9004e-04	-	mae:
0.0368473/660	1s	8ms/step	-	loss:	3.8978e-04	-	mae:
0.0367479/660	1s	8ms/step	-	loss:	3.8956e-04	-	mae:
0.0367485/660	1s	8ms/step	-	loss:	3.8933e-04	-	mae:
0.0367491/660							

Battery SoC Estimation Project Report

0.0367498/660	1s	8ms/step	-	loss:	3.8883e-04	-	mae:
0.0366505/660	1s	8ms/step	-	loss:	3.8853e-04	-	mae:
0.0366512/660	1s	8ms/step	-	loss:	3.8825e-04	-	mae:
0.0366517/660	1s	8ms/step	-	loss:	3.8797e-04	-	mae:
0.0366524/660	1s	8ms/step	-	loss:	3.8776e-04	-	mae:
0.0366530/660	1s	8ms/step	-	loss:	3.8746e-04	-	mae:
0.0366537/660	1s	8ms/step	-	loss:	3.8719e-04	-	mae:
0.0366544/660	0s	8ms/step	-	loss:	3.8687e-04	-	mae:
0.0366550/660	0s	8ms/step	-	loss:	3.8655e-04	-	mae:
0.0364557/660	0s	8ms/step	-	loss:	3.8629e-04	-	mae:
0.0364563/660	0s	8ms/step	-	loss:	3.8599e-04	-	mae:
0.0364570/660	0s	8ms/step	-	loss:	3.8573e-04	-	mae:
0.0364577/660	0s	8ms/step	-	loss:	3.8544e-04	-	mae:
0.0363584/660	0s	8ms/step	-	loss:	3.8515e-04	-	mae:
0.0363591/660	0s	8ms/step	-	loss:	3.8486e-04	-	mae:
0.0363598/660	0s	8ms/step	-	loss:	3.8459e-04	-	mae:
0.0363604/660	0s	8ms/step	-	loss:	3.8432e-04	-	mae:
0.0363611/660	0s	8ms/step	-	loss:	3.8411e-04	-	mae:
0.0362618/660	0s	8ms/step	-	loss:	3.8387e-04	-	mae:
0.0362625/660	0s	8ms/step	-	loss:	3.8364e-04	-	mae:
0.0362632/660	0s	8ms/step	-	loss:	3.8341e-04	-	mae:
0.0362639/660	0s	8ms/step	-	loss:	3.8320e-04	-	mae:
0.0362645/660	0s	8ms/step	-	loss:	3.8300e-04	-	mae:
0.0361652/660	0s	8ms/step	-	loss:	3.8283e-04	-	mae:
0.0361660/660	0s	8ms/step	-	loss:	3.8262e-04	-	mae:
0.0361659/660	0s	8ms/step	-	loss:	3.8241e-04	-	mae:
0.0361660/660	10s	9ms/step	-	loss:	3.8236e-04	-	mae: 0.0361 - val_loss: 3.4242e-04 - val_mae: 0.0333

Epoch 41/200

0.0197	1/660	44:25	4s/step	-	loss:	2.1126e-04	-	mae:
	6/660							
7s	12ms/step	-	loss:	2.4539e-04	-	mae:	0.0229	
	10/660							
0.0244	8s	13ms/step	-	loss:	2.5997e-04	-	mae:	
	15/660							
0.0260	8s	13ms/step	-	loss:	2.7679e-04	-	mae:	
	21/660							
0.0277	7s	12ms/step	-	loss:	2.9441e-04	-	mae:	
	26/660							
0.0288	7s	12ms/step	-	loss:	3.0597e-04	-	mae:	
	32/660							

Battery SoC Estimation Project Report

0.0298	7s	11ms/step	-	loss:	3.1555e-04	-	mae:
	6s	38/660	-	loss:	3.2504e-04	-	mae:
0.0307	6s	11ms/step	-	loss:	3.3546e-04	-	mae:
	5s	44/660	-	loss:	3.4548e-04	-	mae:
0.0317	6s	10ms/step	-	loss:	3.5391e-04	-	mae:
	5s	51/660	-	loss:	3.6009e-04	-	mae:
0.0327	6s	10ms/step	-	loss:	3.6467e-04	-	mae:
	5s	58/660	-	loss:	3.6745e-04	-	mae:
0.0336	6s	10ms/step	-	loss:	3.7027e-04	-	mae: 0.0352
	5s	65/660	-	loss:	3.7220e-04	-	mae:
0.0342	5s	10ms/step	-	loss:	3.7381e-04	-	mae:
	5s	72/660	-	loss:	3.7515e-04	-	mae:
0.0346	5s	10ms/step	-	loss:	3.7617e-04	-	mae:
	5s	78/660	-	loss:	3.7749e-04	-	mae:
0.0349	5s	10ms/step	-	loss:	3.7860e-04	-	mae:
	5s	85/660	-	loss:	3.7924e-04	-	mae:
0.0354	5s	9ms/step	-	loss:	3.7967e-04	-	mae:
	5s	92/660	-	loss:	3.8000e-04	-	mae:
0.0356106/660	5s	9ms/step	-	loss:	3.8022e-04	-	mae:
	5s	99/660	-	loss:	3.8044e-04	-	mae:
0.0357113/660	4s	9ms/step	-	loss:	3.8053e-04	-	mae:
	4s	10ms/step	-	loss:	3.8072e-04	-	mae:
0.0358120/660	4s	9ms/step	-	loss:	3.8070e-04	-	mae:
	4s	10ms/step	-	loss:	3.8055e-04	-	mae:
0.0359127/660	4s	9ms/step	-	loss:	3.8046e-04	-	mae:
	4s	10ms/step	-	loss:	3.8023e-04	-	mae:
0.0360134/660	4s	9ms/step	-	loss:	3.8033e-04	-	mae:
	4s	10ms/step	-	loss:	3.8015e-04	-	mae:
0.0361141/660	4s	9ms/step	-	loss:	3.8023e-04	-	mae:
	4s	10ms/step	-	loss:	3.8034e-04	-	mae:
0.0362147/660	4s	9ms/step	-	loss:	3.8048e-04	-	mae:
	4s	10ms/step	-	loss:	3.8064e-04	-	mae:
0.0362152/660	4s	9ms/step	-	loss:	3.8077e-04	-	mae:
	4s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0362159/660	4s	9ms/step	-	loss:	3.8077e-04	-	mae:
	4s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0362166/660	4s	9ms/step	-	loss:	3.8077e-04	-	mae:
	4s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363173/660	4s	9ms/step	-	loss:	3.8077e-04	-	mae:
	4s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363180/660	4s	9ms/step	-	loss:	3.8077e-04	-	mae:
	4s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363187/660	4s	9ms/step	-	loss:	3.8077e-04	-	mae:
	4s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363194/660	4s	9ms/step	-	loss:	3.8077e-04	-	mae:
	4s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363201/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0362208/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0362215/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0362222/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0362228/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0362235/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363242/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363249/660	3s	9ms/step	-	loss:	3.8077e-04	-	mae:
	3s	10ms/step	-	loss:	3.8077e-04	-	mae:
0.0363256/660							

Battery SoC Estimation Project Report						
0.0363262/660	3s	9ms/step	-	loss:	3.8083e-04	- mae:
0.0363269/660	3s	9ms/step	-	loss:	3.8091e-04	- mae:
0.0363274/660	3s	9ms/step	-	loss:	3.8103e-04	- mae:
0.0363281/660	3s	9ms/step	-	loss:	3.8112e-04	- mae:
0.0363287/660	3s	9ms/step	-	loss:	3.8120e-04	- mae:
0.0363294/660	3s	9ms/step	-	loss:	3.8122e-04	- mae:
0.0363301/660	3s	9ms/step	-	loss:	3.8124e-04	- mae:
0.0363308/660	2s	9ms/step	-	loss:	3.8124e-04	- mae:
0.0363315/660	2s	8ms/step	-	loss:	3.8125e-04	- mae:
0.0363322/660	2s	8ms/step	-	loss:	3.8125e-04	- mae:
0.0363329/660	2s	8ms/step	-	loss:	3.8125e-04	- mae:
0.0363335/660	2s	8ms/step	-	loss:	3.8121e-04	- mae:
0.0363341/660	2s	8ms/step	-	loss:	3.8117e-04	- mae:
0.0363347/660	2s	8ms/step	-	loss:	3.8111e-04	- mae:
0.0363353/660	2s	8ms/step	-	loss:	3.8105e-04	- mae:
0.0363360/660	2s	8ms/step	-	loss:	3.8096e-04	- mae:
0.0363366/660	2s	8ms/step	-	loss:	3.8087e-04	- mae:
0.0363372/660	2s	8ms/step	-	loss:	3.8078e-04	- mae:
0.0362378/660	2s	8ms/step	-	loss:	3.8067e-04	- mae:
0.0362384/660	2s	8ms/step	-	loss:	3.8056e-04	- mae:
0.0362391/660	2s	8ms/step	-	loss:	3.8043e-04	- mae:
0.0362396/660	2s	9ms/step	-	loss:	3.8032e-04	- mae:
0.0362402/660	2s	9ms/step	-	loss:	3.8017e-04	- mae:
0.0362408/660	2s	9ms/step	-	loss:	3.8000e-04	- mae:
0.0362415/660	2s	9ms/step	-	loss:	3.7978e-04	- mae:
0.0361422/660	2s	9ms/step	-	loss:	3.7956e-04	- mae:
0.0361428/660	1s	9ms/step	-	loss:	3.7939e-04	- mae:
0.0361435/660	1s	9ms/step	-	loss:	3.7919e-04	- mae:
0.0361442/660	1s	9ms/step	-	loss:	3.7900e-04	- mae:
0.0361449/660	1s	8ms/step	-	loss:	3.7880e-04	- mae:
0.0360455/660	1s	9ms/step	-	loss:	3.7864e-04	- mae:
0.0360461/660	1s	9ms/step	-	loss:	3.7848e-04	- mae:
0.0360468/660						

Battery SoC Estimation Project Report

0.0360475/660	1s	8ms/step	-	loss:	3.7830e-04	-	mae:	
0.0360481/660	1s	8ms/step	-	loss:	3.7810e-04	-	mae:	
0.0360488/660	1s	8ms/step	-	loss:	3.7792e-04	-	mae:	
0.0359495/660	1s	8ms/step	-	loss:	3.7770e-04	-	mae:	
0.0359502/660	1s	8ms/step	-	loss:	3.7747e-04	-	mae:	
0.0359508/660	1s	8ms/step	-	loss:	3.7724e-04	-	mae:	
0.0359514/660	1s	8ms/step	-	loss:	3.7707e-04	-	mae:	
0.0358519/660	1s	9ms/step	-	loss:	3.7671e-04	-	mae:	
0.0358525/660	1s	9ms/step	-	loss:	3.7651e-04	-	mae:	
0.0358532/660	1s	8ms/step	-	loss:	3.7627e-04	-	mae:	
0.0358538/660	1s	8ms/step	-	loss:	3.7607e-04	-	mae:	
0.0358545/660	0s	8ms/step	-	loss:	3.7583e-04	-	mae:	
0.0357551/660	0s	8ms/step	-	loss:	3.7563e-04	-	mae:	
0.0357558/660	0s	8ms/step	-	loss:	3.7541e-04	-	mae:	
0.0357565/660	0s	8ms/step	-	loss:	3.7518e-04	-	mae:	
0.0357571/660	0s	8ms/step	-	loss:	3.7498e-04	-	mae:	
0.0357577/660	0s	8ms/step	-	loss:	3.7478e-04	-	mae:	
0.0356584/660	0s	8ms/step	-	loss:	3.7456e-04	-	mae:	
0.0356591/660	0s	8ms/step	-	loss:	3.7434e-04	-	mae:	
0.0356598/660	0s	8ms/step	-	loss:	3.7413e-04	-	mae:	
0.0356605/660	0s	8ms/step	-	loss:	3.7392e-04	-	mae:	
0.0356612/660	0s	8ms/step	-	loss:	3.7372e-04	-	mae:	
0.0355619/660	0s	8ms/step	-	loss:	3.7352e-04	-	mae:	
0.0355626/660	0s	8ms/step	-	loss:	3.7332e-04	-	mae:	
0.0355633/660	0s	8ms/step	-	loss:	3.7314e-04	-	mae:	
0.0355640/660	0s	8ms/step	-	loss:	3.7297e-04	-	mae:	
0.0355645/660	0s	8ms/step	-	loss:	3.7284e-04	-	mae:	
0.0355652/660	0s	8ms/step	-	loss:	3.7266e-04	-	mae:	
0.0354659/660	0s	8ms/step	-	loss:	3.7256e-04	-	mae:	
0.0354660/660								
10s 9ms/step - loss: 3.7256e-04 - mae: 0.0354 - val_loss: 0.0027 - val_mae: 0.2638								
Epoch 42/200								
0.2410	1/660	46:21	4s/step	-	loss:	0.0025	-	mae:
	5/660							
8s	13ms/step	-	loss:	0.0023	-	mae:	0.2171	10/660

Battery SoC Estimation Project Report

	8s	12ms/step	-	loss:	0.0023	-	mae:
0.2173	7s	12ms/step	-	loss:	0.0023	-	mae:
0.2192	7s	21/660					
0.2167	7s	12ms/step	-	loss:	0.0023	-	mae:
0.2143	7s	25/660					
0.2113	7s	12ms/step	-	loss:	0.0023	-	mae:
0.2077	6s	30/660					
0.2027	6s	11ms/step	-	loss:	0.0022	-	mae:
0.1970	6s	43/660					
0.1922	5s	10ms/step	-	loss:	0.0021	-	mae:
0.1876	5s	56/660					
0.1841	5s	10ms/step	-	loss:	0.0020	-	mae:
0.1801	5s	63/660					
0.1763	5s	10ms/step	-	loss:	0.0020	-	mae:
	5s	90/660					
	5s	9ms/step	-	loss:	0.0019	-	mae:
	5s	96/660					
0.1694103/660	5s	9ms/step	-	loss:	0.0018	-	mae:
0.1660110/660	5s	9ms/step	-	loss:	0.0018	-	mae:
0.1627117/660	5s	9ms/step	-	loss:	0.0017	-	mae:
0.1596124/660	4s	9ms/step	-	loss:	0.0017	-	mae:
0.1567131/660	4s	9ms/step	-	loss:	0.0017	-	mae:
0.1538138/660	4s	9ms/step	-	loss:	0.0017	-	mae:
0.1511145/660	4s	9ms/step	-	loss:	0.0016	-	mae:
0.1486152/660	4s	9ms/step	-	loss:	0.0016	-	mae:
0.1461158/660	4s	9ms/step	-	loss:	0.0016	-	mae:
0.1441164/660	4s	9ms/step	-	loss:	0.0016	-	mae:
0.1422171/660	4s	9ms/step	-	loss:	0.0015	-	mae:
0.1400178/660	4s	9ms/step	-	loss:	0.0015	-	mae:
0.1379185/660	4s	9ms/step	-	loss:	0.0015	-	mae:
0.1359191/660	4s	9ms/step	-	loss:	0.0015	-	mae:
0.1342198/660	4s	9ms/step	-	loss:	0.0015	-	mae:
0.1324205/660	3s	9ms/step	-	loss:	0.0014	-	mae:
0.1306212/660	3s	9ms/step	-	loss:	0.0014	-	mae:
0.1289219/660	3s	9ms/step	-	loss:	0.0014	-	mae:
0.1273226/660							

Battery SoC Estimation Project Report

3s	9ms/step	-	loss:	0.0014	-	mae:
0.1258233/660						
3s	9ms/step	-	loss:	0.0014	-	mae:
0.1243240/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1229247/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1216254/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1202261/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1190267/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1179274/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1167280/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1157286/660						
3s	9ms/step	-	loss:	0.0013	-	mae:
0.1148293/660						
3s	9ms/step	-	loss:	0.0012	-	mae:
0.1137300/660						
3s	9ms/step	-	loss:	0.0012	-	mae:
0.1126306/660						
3s	9ms/step	-	loss:	0.0012	-	mae:
0.1117312/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1109318/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1100325/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1091332/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1082338/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1074345/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1065352/660						
2s	9ms/step	-	loss:	0.0012	-	mae:
0.1057358/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1050364/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1043371/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1035377/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1028383/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1021390/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1014397/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1007403/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.1001410/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.0994416/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.0988422/660						
2s	9ms/step	-	loss:	0.0011	-	mae:
0.0982428/660						
1s	9ms/step	-	loss:	0.0011	-	mae:
0.0976434/660						
1s	9ms/step	-	loss:	0.0011	-	mae:
0.0971441/660						

Battery SoC Estimation Project Report

1s 0.0965448/660	9ms/step	-	loss:	0.0011	-	mae:
1s 0.0958454/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0953461/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0947467/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0943474/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0937481/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0931488/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0926494/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0921500/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0917506/660	9ms/step	-	loss:	0.0010	-	mae:
1s 0.0913512/660	9ms/step	-	loss:	9.9926e-04	-	mae:
1s 0.0908519/660	9ms/step	-	loss:	9.9457e-04	-	mae:
1s 0.0903524/660	9ms/step	-	loss:	9.8919e-04	-	mae:
1s 0.0900530/660	9ms/step	-	loss:	9.8540e-04	-	mae:
1s 0.0896536/660	9ms/step	-	loss:	9.8091e-04	-	mae:
1s 0.0892542/660	9ms/step	-	loss:	9.7648e-04	-	mae:
1s 0.0888549/660	9ms/step	-	loss:	9.7212e-04	-	mae:
0s 0.0883556/660	9ms/step	-	loss:	9.6712e-04	-	mae:
0s 0.0878562/660	9ms/step	-	loss:	9.6222e-04	-	mae:
0s 0.0875569/660	9ms/step	-	loss:	9.5808e-04	-	mae:
0s 0.0870575/660	9ms/step	-	loss:	9.5334e-04	-	mae:
0s 0.0867582/660	9ms/step	-	loss:	9.4933e-04	-	mae:
0s 0.0862588/660	9ms/step	-	loss:	9.4475e-04	-	mae:
0s 0.0859595/660	9ms/step	-	loss:	9.4088e-04	-	mae:
0s 0.0855601/660	9ms/step	-	loss:	9.3646e-04	-	mae:
0s 0.0851607/660	9ms/step	-	loss:	9.3275e-04	-	mae:
0s 0.0848613/660	9ms/step	-	loss:	9.2911e-04	-	mae:
0s 0.0845619/660	9ms/step	-	loss:	9.2553e-04	-	mae:
0s 0.0841625/660	9ms/step	-	loss:	9.2199e-04	-	mae:
0s 0.0838632/660	9ms/step	-	loss:	9.1850e-04	-	mae:
0s 0.0835639/660	9ms/step	-	loss:	9.1450e-04	-	mae:
0s 0.0831645/660	8ms/step	-	loss:	9.1059e-04	-	mae:
0s 0.0828651/660	9ms/step	-	loss:	9.0728e-04	-	mae:

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0s 0.0825658/660	9ms/step	-	loss:	9.0400e-04	-	mae:	
0s 0.0822660/660	9ms/step	-	loss:	9.0024e-04	-	mae:	
10s 9ms/step - loss: 8.9864e-04 - mae: 0.0820 - val_loss: 3.2316e-04 - val_mae: 0.0301							
Epoch 43/200							
1/660 0.0234	17s 7/660	26ms/step	-	loss:	2.5920e-04	-	mae:
5s 14/660	9ms/step	-	loss:	3.0458e-04	-	mae:	0.0279
5s 20/660	8ms/step	-	loss:	3.2218e-04	-	mae:	
5s 26/660	8ms/step	-	loss:	3.3247e-04	-	mae:	
5s 33/660	9ms/step	-	loss:	3.4384e-04	-	mae:	
5s 39/660	8ms/step	-	loss:	3.5329e-04	-	mae:	
5s 46/660	8ms/step	-	loss:	3.6176e-04	-	mae:	
5s 53/660	8ms/step	-	loss:	3.7074e-04	-	mae:	
5s 58/660	8ms/step	-	loss:	3.7801e-04	-	mae:	
5s 64/660	9ms/step	-	loss:	3.8213e-04	-	mae:	
5s 70/660	9ms/step	-	loss:	3.8578e-04	-	mae:	
5s 76/660	9ms/step	-	loss:	3.8844e-04	-	mae:	
5s 83/660	9ms/step	-	loss:	3.9025e-04	-	mae:	
4s 90/660	9ms/step	-	loss:	3.9209e-04	-	mae:	
4s 97/660	9ms/step	-	loss:	3.9320e-04	-	mae:	
4s 0.0369104/660	9ms/step	-	loss:	3.9407e-04	-	mae:	
4s 0.0369111/660	8ms/step	-	loss:	3.9456e-04	-	mae:	
4s 0.0370118/660	8ms/step	-	loss:	3.9481e-04	-	mae:	
4s 0.0370124/660	8ms/step	-	loss:	3.9530e-04	-	mae:	
4s 0.0371131/660	8ms/step	-	loss:	3.9582e-04	-	mae:	
4s 0.0371137/660	8ms/step	-	loss:	3.9603e-04	-	mae:	
4s 0.0371144/660	8ms/step	-	loss:	3.9611e-04	-	mae:	
4s 0.0371151/660	8ms/step	-	loss:	3.9602e-04	-	mae:	
4s 0.0371157/660	8ms/step	-	loss:	3.9589e-04	-	mae:	
4s 0.0371163/660	8ms/step	-	loss:	3.9570e-04	-	mae:	
4s 0.0370170/660	8ms/step	-	loss:	3.9538e-04	-	mae:	
4s 0.0370177/660	8ms/step	-	loss:	3.9507e-04	-	mae:	
4s 0.0370182/660	8ms/step	-	loss:	3.9475e-04	-	mae:	
4s 0.0370188/660	8ms/step	-	loss:	3.9441e-04	-	mae:	
4s 0.0369194/660	8ms/step	-	loss:	3.9398e-04	-	mae:	

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3s 0.0369200/660	8ms/step	-	loss:	3.9363e-04	-	mae:
3s 0.0368206/660	8ms/step	-	loss:	3.9327e-04	-	mae:
3s 0.0368212/660	9ms/step	-	loss:	3.9293e-04	-	mae:
3s 0.0368217/660	9ms/step	-	loss:	3.9257e-04	-	mae:
3s 0.0368223/660	9ms/step	-	loss:	3.9233e-04	-	mae:
3s 0.0367230/660	9ms/step	-	loss:	3.9212e-04	-	mae:
3s 0.0367236/660	9ms/step	-	loss:	3.9190e-04	-	mae:
3s 0.0367242/660	9ms/step	-	loss:	3.9153e-04	-	mae:
3s 0.0367249/660	9ms/step	-	loss:	3.9131e-04	-	mae:
3s 0.0367255/660	9ms/step	-	loss:	3.9111e-04	-	mae:
3s 0.0366261/660	9ms/step	-	loss:	3.9094e-04	-	mae:
3s 0.0366267/660	9ms/step	-	loss:	3.9082e-04	-	mae:
3s 0.0366273/660	9ms/step	-	loss:	3.9072e-04	-	mae:
3s 0.0366279/660	9ms/step	-	loss:	3.9063e-04	-	mae:
3s 0.0366285/660	9ms/step	-	loss:	3.9049e-04	-	mae:
3s 0.0366292/660	9ms/step	-	loss:	3.9032e-04	-	mae:
3s 0.0366297/660	9ms/step	-	loss:	3.9018e-04	-	mae:
3s 0.0365303/660	9ms/step	-	loss:	3.9003e-04	-	mae:
3s 0.0365308/660	9ms/step	-	loss:	3.8992e-04	-	mae:
3s 0.0365313/660	9ms/step	-	loss:	3.8986e-04	-	mae:
3s 0.0365318/660	9ms/step	-	loss:	3.9054e-04	-	mae:
2s 0.0366323/660	9ms/step	-	loss:	3.9201e-04	-	mae:
2s 0.0367328/660	9ms/step	-	loss:	3.9397e-04	-	mae:
2s 0.0369332/660	9ms/step	-	loss:	3.9586e-04	-	mae:
2s 0.0371336/660	9ms/step	-	loss:	3.9801e-04	-	mae:
2s 0.0373340/660	9ms/step	-	loss:	4.0033e-04	-	mae:
2s 0.0375345/660	9ms/step	-	loss:	4.0348e-04	-	mae:
2s 0.0378350/660	9ms/step	-	loss:	4.0689e-04	-	mae:
2s 0.0381355/660	9ms/step	-	loss:	4.1044e-04	-	mae:
2s 0.0384360/660	9ms/step	-	loss:	4.1407e-04	-	mae:
2s 0.0388365/660	9ms/step	-	loss:	4.1777e-04	-	mae:
2s 0.0391370/660	9ms/step	-	loss:	4.2157e-04	-	mae:
2s 0.0395375/660	9ms/step	-	loss:	4.2157e-04	-	mae:

Battery SoC Estimation Project Report

2s 0.0398380/660	9ms/step	-	loss:	4.2542e-04	-	mae:
2s 0.0402384/660	9ms/step	-	loss:	4.2931e-04	-	mae:
2s 0.0404388/660	9ms/step	-	loss:	4.3242e-04	-	mae:
2s 0.0407393/660	9ms/step	-	loss:	4.3553e-04	-	mae:
2s 0.0411398/660	9ms/step	-	loss:	4.3937e-04	-	mae:
2s 0.0414403/660	9ms/step	-	loss:	4.4314e-04	-	mae:
2s 0.0417408/660	9ms/step	-	loss:	4.4682e-04	-	mae:
2s 0.0420413/660	9ms/step	-	loss:	4.5041e-04	-	mae:
2s 0.0424418/660	9ms/step	-	loss:	4.5396e-04	-	mae:
2s 0.0427423/660	9ms/step	-	loss:	4.5743e-04	-	mae:
2s 0.0430428/660	10ms/step	-	loss:	4.6085e-04	-	mae:
2s 0.0433432/660	10ms/step	-	loss:	4.6423e-04	-	mae:
2s 0.0435436/660	10ms/step	-	loss:	4.6689e-04	-	mae:
2s 0.0437440/660	10ms/step	-	loss:	4.6951e-04	-	mae:
2s 0.0440444/660	10ms/step	-	loss:	4.7211e-04	-	mae:
2s 0.0442448/660	10ms/step	-	loss:	4.7466e-04	-	mae:
2s 0.0444452/660	10ms/step	-	loss:	4.7717e-04	-	mae:
2s 0.0446456/660	10ms/step	-	loss:	4.7964e-04	-	mae:
1s 0.0448460/660	10ms/step	-	loss:	4.8209e-04	-	mae:
1s 0.0450464/660	10ms/step	-	loss:	4.8449e-04	-	mae:
1s 0.0452467/660	10ms/step	-	loss:	4.8687e-04	-	mae:
1s 0.0454471/660	10ms/step	-	loss:	4.8862e-04	-	mae:
1s 0.0456475/660	10ms/step	-	loss:	4.9093e-04	-	mae:
1s 0.0458479/660	10ms/step	-	loss:	4.9319e-04	-	mae:
1s 0.0460483/660	10ms/step	-	loss:	4.9540e-04	-	mae:
1s 0.0462487/660	10ms/step	-	loss:	4.9756e-04	-	mae:
1s 0.0464491/660	10ms/step	-	loss:	4.9967e-04	-	mae:
1s 0.0465497/660	10ms/step	-	loss:	5.0174e-04	-	mae:
1s 0.0468503/660	10ms/step	-	loss:	5.0476e-04	-	mae:
1s 0.0471509/660	10ms/step	-	loss:	5.0771e-04	-	mae:
1s 0.0473515/660	10ms/step	-	loss:	5.1060e-04	-	mae:
1s 0.0475522/660	10ms/step	-	loss:	5.1340e-04	-	mae:
1s 0.0478529/660	10ms/step	-	loss:	5.1655e-04	-	mae:

Battery SoC Estimation Project Report

0.0481535/660	1s	10ms/step	-	loss:	5.1957e-04	-	mae:	
0.0483541/660	1s	10ms/step	-	loss:	5.2206e-04	-	mae:	
0.0485548/660	1s	10ms/step	-	loss:	5.2448e-04	-	mae:	
0.0487555/660	1s	10ms/step	-	loss:	5.2721e-04	-	mae:	
0.0489561/660	1s	10ms/step	-	loss:	5.2985e-04	-	mae:	
0.0491568/660	0s	10ms/step	-	loss:	5.3203e-04	-	mae:	
0.0493574/660	0s	10ms/step	-	loss:	5.3450e-04	-	mae:	
0.0495579/660	0s	10ms/step	-	loss:	5.3653e-04	-	mae:	
0.0496585/660	0s	10ms/step	-	loss:	5.3818e-04	-	mae:	
0.0498592/660	0s	10ms/step	-	loss:	5.4009e-04	-	mae:	
0.0500598/660	0s	10ms/step	-	loss:	5.4225e-04	-	mae:	
0.0501605/660	0s	10ms/step	-	loss:	5.4404e-04	-	mae:	
0.0503611/660	0s	10ms/step	-	loss:	5.4606e-04	-	mae:	
0.0504618/660	0s	10ms/step	-	loss:	5.4774e-04	-	mae:	
0.0506625/660	0s	10ms/step	-	loss:	5.4963e-04	-	mae:	
0.0507631/660	0s	10ms/step	-	loss:	5.5146e-04	-	mae:	
0.0509637/660	0s	10ms/step	-	loss:	5.5298e-04	-	mae:	
0.0510643/660	0s	10ms/step	-	loss:	5.5446e-04	-	mae:	
0.0511649/660	0s	10ms/step	-	loss:	5.5591e-04	-	mae:	
0.0512656/660	0s	10ms/step	-	loss:	5.5730e-04	-	mae:	
0.0513660/660	0s	10ms/step	-	loss:	5.5887e-04	-	mae:	
7s 10ms/step - loss: 5.5996e-04 - mae: 0.0514 - val_loss: 4.5306e-04 - val_mae: 0.0396								
Epoch 44/200								
0.0430	1/660	37:24	3s/step	-	loss:	4.8467e-04	-	mae:
	5/660							
8s	13ms/step	-	loss:	4.7867e-04	-	mae:	0.0423	
	10/660							
0.0449	8s	12ms/step	-	loss:	5.0476e-04	-	mae:	
	15/660							
0.0457	7s	12ms/step	-	loss:	5.1225e-04	-	mae:	
	20/660							
0.0460	7s	12ms/step	-	loss:	5.1526e-04	-	mae:	
	25/660							
0.0463	7s	12ms/step	-	loss:	5.1804e-04	-	mae:	
	30/660							
0.0463	7s	12ms/step	-	loss:	5.1797e-04	-	mae:	
	36/660							
0.0465	6s	11ms/step	-	loss:	5.1935e-04	-	mae:	
	42/660							
0.0470	6s	11ms/step	-	loss:	5.2393e-04	-	mae:	
	49/660							
0.0473	6s	10ms/step	-	loss:	5.2765e-04	-	mae:	
	55/660							
0.0476	6s	10ms/step	-	loss:	5.3033e-04	-	mae:	
	60/660							

Battery SoC Estimation Project Report

0.0478	6s	10ms/step	-	loss:	5.3221e-04	-	mae:
	67/660						
0.0479	5s	10ms/step	-	loss:	5.3327e-04	-	mae:
	73/660						
0.0480	5s	10ms/step	-	loss:	5.3356e-04	-	mae:
	79/660						
0.0479	5s	10ms/step	-	loss:	5.3318e-04	-	mae:
	85/660						
0.0479	5s	10ms/step	-	loss:	5.3300e-04	-	mae:
	90/660						
0.0479	5s	10ms/step	-	loss:	5.3242e-04	-	mae:
	96/660						
0.0479103/660	5s	10ms/step	-	loss:	5.3194e-04	-	mae:
0.0478110/660	5s	10ms/step	-	loss:	5.3128e-04	-	mae:
0.0477117/660	5s	10ms/step	-	loss:	5.3035e-04	-	mae:
123/660	5s	9ms/step	-	loss:	5.2953e-04	-	mae: 0.0477
0.0477130/660	5s	9ms/step	-	loss:	5.2904e-04	-	mae:
0.0476137/660	4s	9ms/step	-	loss:	5.2817e-04	-	mae:
0.0475144/660	4s	9ms/step	-	loss:	5.2722e-04	-	mae:
0.0474151/660	4s	9ms/step	-	loss:	5.2614e-04	-	mae:
0.0473158/660	4s	9ms/step	-	loss:	5.2498e-04	-	mae:
0.0472165/660	4s	9ms/step	-	loss:	5.2376e-04	-	mae:
0.0471172/660	4s	9ms/step	-	loss:	5.2249e-04	-	mae:
0.0470179/660	4s	9ms/step	-	loss:	5.2137e-04	-	mae:
0.0469184/660	4s	9ms/step	-	loss:	5.2017e-04	-	mae:
0.0468191/660	4s	9ms/step	-	loss:	5.1924e-04	-	mae:
0.0467198/660	4s	9ms/step	-	loss:	5.1802e-04	-	mae:
0.0466205/660	4s	9ms/step	-	loss:	5.1689e-04	-	mae:
0.0465212/660	3s	9ms/step	-	loss:	5.1578e-04	-	mae:
0.0464219/660	3s	9ms/step	-	loss:	5.1474e-04	-	mae:
0.0463225/660	3s	9ms/step	-	loss:	5.1381e-04	-	mae:
0.0463232/660	3s	9ms/step	-	loss:	5.1313e-04	-	mae:
0.0462239/660	3s	9ms/step	-	loss:	5.1239e-04	-	mae:
0.0462246/660	3s	9ms/step	-	loss:	5.1169e-04	-	mae:
0.0461253/660	3s	9ms/step	-	loss:	5.1103e-04	-	mae:
0.0461259/660	3s	9ms/step	-	loss:	5.1033e-04	-	mae:
0.0460265/660	3s	9ms/step	-	loss:	5.0971e-04	-	mae:
0.0460272/660	3s	9ms/step	-	loss:	5.0916e-04	-	mae:
0.0459278/660	3s	9ms/step	-	loss:	5.0856e-04	-	mae:

Battery SoC Estimation Project Report						
3s	9ms/step	-	loss:	5.0806e-04	-	mae:
0.0459285/660						
3s	9ms/step	-	loss:	5.0742e-04	-	mae:
0.0458291/660						
3s	9ms/step	-	loss:	5.0686e-04	-	mae:
0.0458297/660						
3s	9ms/step	-	loss:	5.0628e-04	-	mae:
0.0457303/660						
3s	9ms/step	-	loss:	5.0573e-04	-	mae:
0.0457308/660						
3s	9ms/step	-	loss:	5.0527e-04	-	mae:
0.0457314/660						
3s	9ms/step	-	loss:	5.0475e-04	-	mae:
0.0456321/660						
2s	9ms/step	-	loss:	5.0415e-04	-	mae:
0.0456327/660						
2s	9ms/step	-	loss:	5.0364e-04	-	mae:
0.0455334/660						
2s	9ms/step	-	loss:	5.0303e-04	-	mae:
0.0455341/660						
2s	9ms/step	-	loss:	5.0240e-04	-	mae:
0.0454348/660						
2s	9ms/step	-	loss:	5.0176e-04	-	mae:
0.0454355/660						
2s	9ms/step	-	loss:	5.0112e-04	-	mae:
0.0453362/660						
2s	9ms/step	-	loss:	5.0045e-04	-	mae:
0.0453368/660						
2s	9ms/step	-	loss:	4.9989e-04	-	mae:
0.0452375/660						
2s	9ms/step	-	loss:	4.9922e-04	-	mae:
0.0452382/660						
2s	9ms/step	-	loss:	4.9854e-04	-	mae:
0.0451389/660						
2s	9ms/step	-	loss:	4.9786e-04	-	mae:
0.0450396/660						
2s	9ms/step	-	loss:	4.9717e-04	-	mae:
0.0450403/660						
2s	9ms/step	-	loss:	4.9645e-04	-	mae:
0.0449410/660						
2s	9ms/step	-	loss:	4.9572e-04	-	mae:
0.0449416/660						
2s	9ms/step	-	loss:	4.9511e-04	-	mae:
0.0448423/660						
2s	9ms/step	-	loss:	4.9445e-04	-	mae:
0.0448429/660						
1s	9ms/step	-	loss:	4.9393e-04	-	mae:
0.0447435/660						
1s	9ms/step	-	loss:	4.9344e-04	-	mae:
0.0447442/660						
1s	9ms/step	-	loss:	4.9290e-04	-	mae:
0.0446449/660						
1s	9ms/step	-	loss:	4.9239e-04	-	mae:
0.0446456/660						
1s	9ms/step	-	loss:	4.9190e-04	-	mae:
0.0445463/660						
1s	9ms/step	-	loss:	4.9144e-04	-	mae:
0.0445470/660						
1s	9ms/step	-	loss:	4.9098e-04	-	mae:
0.0445476/660						
1s	9ms/step	-	loss:	4.9059e-04	-	mae:
0.0444483/660						
1s	9ms/step	-	loss:	4.9012e-04	-	mae:
0.0444490/660						
1s	9ms/step	-	loss:	4.8964e-04	-	mae:
0.0443495/660						

Battery SoC Estimation Project Report

0.0443499/660	1s	9ms/step	-	loss:	4.8929e-04	-	mae:
0.0443504/660	1s	9ms/step	-	loss:	4.8901e-04	-	mae:
0.0443510/660	1s	9ms/step	-	loss:	4.8868e-04	-	mae:
0.0442516/660	1s	9ms/step	-	loss:	4.8829e-04	-	mae:
0.0442523/660	1s	9ms/step	-	loss:	4.8789e-04	-	mae:
0.0442530/660	1s	9ms/step	-	loss:	4.8742e-04	-	mae:
0.0441537/660	1s	9ms/step	-	loss:	4.8694e-04	-	mae:
0.0441544/660	0s	9ms/step	-	loss:	4.8598e-04	-	mae:
0.0440550/660	0s	9ms/step	-	loss:	4.8557e-04	-	mae:
0.0440555/660	0s	9ms/step	-	loss:	4.8525e-04	-	mae:
0.0440559/660	0s	9ms/step	-	loss:	4.8498e-04	-	mae:
0.0440564/660	0s	9ms/step	-	loss:	4.8466e-04	-	mae:
0.0439569/660	0s	9ms/step	-	loss:	4.8434e-04	-	mae:
0.0439573/660	0s	9ms/step	-	loss:	4.8408e-04	-	mae:
0.0439578/660	0s	9ms/step	-	loss:	4.8377e-04	-	mae:
0.0438583/660	0s	9ms/step	-	loss:	4.8347e-04	-	mae:
0.0438588/660	0s	9ms/step	-	loss:	4.8317e-04	-	mae:
0.0438593/660	0s	9ms/step	-	loss:	4.8289e-04	-	mae:
0.0438597/660	0s	9ms/step	-	loss:	4.8269e-04	-	mae:
0.0438602/660	0s	9ms/step	-	loss:	4.8244e-04	-	mae:
0.0437606/660	0s	9ms/step	-	loss:	4.8227e-04	-	mae:
0.0437611/660	0s	9ms/step	-	loss:	4.8207e-04	-	mae:
0.0437616/660	0s	9ms/step	-	loss:	4.8188e-04	-	mae:
0.0437620/660	0s	9ms/step	-	loss:	4.8174e-04	-	mae:
0.0437625/660	0s	9ms/step	-	loss:	4.8156e-04	-	mae:
0.0437630/660	0s	9ms/step	-	loss:	4.8141e-04	-	mae:
0.0436635/660	0s	9ms/step	-	loss:	4.8126e-04	-	mae:
0.0436639/660	0s	9ms/step	-	loss:	4.8115e-04	-	mae:
0.0436643/660	0s	9ms/step	-	loss:	4.8104e-04	-	mae:
0.0436648/660	0s	9ms/step	-	loss:	4.8090e-04	-	mae:
0.0436653/660	0s	9ms/step	-	loss:	4.8076e-04	-	mae:
0.0436658/660	0s	9ms/step	-	loss:	4.8062e-04	-	mae:
0.0436660/660							

Battery SoC Estimation Project Report

10s 10ms/step - loss: 4.8053e-04 - mae: 0.0436 - val_loss: 3.3911e-04 - val_mae: 0.0287

Epoch 45/200

	1/660	29s	45ms/step	-	loss:	2.8390e-04	-	mae:
0.0229	5/660							
9s	14ms/step	-	loss:	3.2287e-04	-	mae:	0.0270	
	9/660							
9s	15ms/step	-	loss:	3.6061e-04	-	mae:		
0.0309	13/660							
9s	15ms/step	-	loss:	3.8050e-04	-	mae:		
0.0329	17/660							
9s	15ms/step	-	loss:	3.8953e-04	-	mae:		
0.0339	23/660							
8s	13ms/step	-	loss:	4.0160e-04	-	mae:		
0.0352	29/660							
7s	12ms/step	-	loss:	4.1057e-04	-	mae:		
0.0361	35/660							
7s	12ms/step	-	loss:	4.1740e-04	-	mae:		
0.0369	42/660							
6s	11ms/step	-	loss:	4.2650e-04	-	mae:		
0.0378	49/660							
6s	11ms/step	-	loss:	4.3395e-04	-	mae:		
0.0386	55/660							
6s	10ms/step	-	loss:	4.3938e-04	-	mae:		
0.0392	62/660							
6s	10ms/step	-	loss:	4.4412e-04	-	mae:		
0.0397	68/660							
5s	10ms/step	-	loss:	4.4625e-04	-	mae:		
0.0400	74/660							
5s	10ms/step	-	loss:	4.4760e-04	-	mae:		
0.0401	81/660							
5s	10ms/step	-	loss:	4.4855e-04	-	mae:		
0.0403	88/660							
5s	10ms/step	-	loss:	4.4905e-04	-	mae:		
0.0404	95/660							
5s	10ms/step	-	loss:	4.4919e-04	-	mae:		
0.0404102/660								
109/660	5s	9ms/step	-	loss:	4.4907e-04	-	mae:	0.0404
	5s	9ms/step	-	loss:	4.4887e-04	-	mae:	
0.0405116/660	5s	9ms/step	-	loss:	4.4882e-04	-	mae:	
0.0405123/660	4s	9ms/step	-	loss:	4.4912e-04	-	mae:	
0.0405130/660	4s	9ms/step	-	loss:	4.4917e-04	-	mae:	
0.0406135/660	4s	9ms/step	-	loss:	4.4911e-04	-	mae:	
0.0406141/660	4s	9ms/step	-	loss:	4.4888e-04	-	mae:	
0.0406147/660	4s	9ms/step	-	loss:	4.4862e-04	-	mae:	
0.0406153/660	4s	9ms/step	-	loss:	4.4826e-04	-	mae:	
0.0406159/660	4s	9ms/step	-	loss:	4.4781e-04	-	mae:	
0.0406166/660	4s	9ms/step	-	loss:	4.4717e-04	-	mae:	
0.0405172/660	4s	9ms/step	-	loss:	4.4673e-04	-	mae:	
0.0405179/660	4s	9ms/step	-	loss:	4.4607e-04	-	mae:	
0.0405185/660	4s	9ms/step	-	loss:	4.4538e-04	-	mae:	
0.0404191/660	4s	9ms/step	-	loss:	4.4477e-04	-	mae:	
0.0404197/660								

Battery SoC Estimation Project Report						
0.0404203/660	4s	9ms/step	-	loss:	4.4416e-04	- mae:
0.0403209/660	4s	9ms/step	-	loss:	4.4356e-04	- mae:
0.0403216/660	4s	9ms/step	-	loss:	4.4299e-04	- mae:
0.0402222/660	3s	9ms/step	-	loss:	4.4239e-04	- mae:
0.0402229/660	3s	9ms/step	-	loss:	4.4198e-04	- mae:
0.0402235/660	3s	9ms/step	-	loss:	4.4154e-04	- mae:
0.0402242/660	3s	9ms/step	-	loss:	4.4074e-04	- mae:
0.0401248/660	3s	9ms/step	-	loss:	4.4036e-04	- mae:
0.0401254/660	3s	9ms/step	-	loss:	4.3995e-04	- mae:
0.0401261/660	3s	9ms/step	-	loss:	4.3948e-04	- mae:
0.0401267/660	3s	9ms/step	-	loss:	4.3914e-04	- mae:
0.0401274/660	3s	9ms/step	-	loss:	4.3877e-04	- mae:
0.0400281/660	3s	9ms/step	-	loss:	4.3841e-04	- mae:
0.0400288/660	3s	9ms/step	-	loss:	4.3802e-04	- mae:
0.0400294/660	3s	9ms/step	-	loss:	4.3768e-04	- mae:
0.0400301/660	3s	9ms/step	-	loss:	4.3727e-04	- mae:
0.0399308/660	3s	9ms/step	-	loss:	4.3688e-04	- mae:
0.0399315/660	3s	9ms/step	-	loss:	4.3650e-04	- mae:
0.0399322/660	2s	9ms/step	-	loss:	4.3616e-04	- mae:
0.0399329/660	2s	9ms/step	-	loss:	4.3583e-04	- mae:
0.0399336/660	2s	9ms/step	-	loss:	4.3550e-04	- mae:
0.0398343/660	2s	9ms/step	-	loss:	4.3517e-04	- mae:
0.0398350/660	2s	9ms/step	-	loss:	4.3484e-04	- mae:
0.0398357/660	2s	9ms/step	-	loss:	4.3452e-04	- mae:
0.0398364/660	2s	9ms/step	-	loss:	4.3419e-04	- mae:
0.0397371/660	2s	9ms/step	-	loss:	4.3385e-04	- mae:
0.0397378/660	2s	9ms/step	-	loss:	4.3351e-04	- mae:
0.0397382/660	2s	9ms/step	-	loss:	4.3331e-04	- mae:
0.0397389/660	2s	9ms/step	-	loss:	4.3297e-04	- mae:
0.0397396/660	2s	9ms/step	-	loss:	4.3261e-04	- mae:
0.0396403/660	2s	9ms/step	-	loss:	4.3222e-04	- mae:
0.0396410/660	2s	9ms/step	-	loss:	4.3182e-04	- mae:
0.0396416/660						

Battery SoC Estimation Project Report

0.0395423/660	2s	9ms/step	-	loss:	4.3147e-04	-	mae:
0.0395429/660	2s	9ms/step	-	loss:	4.3106e-04	-	mae:
0.0395435/660	1s	9ms/step	-	loss:	4.3072e-04	-	mae:
0.0395442/660	1s	9ms/step	-	loss:	4.3039e-04	-	mae:
0.0394449/660	1s	9ms/step	-	loss:	4.3011e-04	-	mae:
0.0394456/660	1s	9ms/step	-	loss:	4.2998e-04	-	mae:
0.0394463/660	1s	9ms/step	-	loss:	4.2999e-04	-	mae:
0.0394469/660	1s	9ms/step	-	loss:	4.3000e-04	-	mae:
0.0395476/660	1s	9ms/step	-	loss:	4.3001e-04	-	mae:
0.0395483/660	1s	9ms/step	-	loss:	4.3001e-04	-	mae:
0.0395490/660	1s	9ms/step	-	loss:	4.2997e-04	-	mae:
0.0395497/660	1s	9ms/step	-	loss:	4.2993e-04	-	mae:
0.0395503/660	1s	9ms/step	-	loss:	4.2990e-04	-	mae:
0.0395508/660	1s	9ms/step	-	loss:	4.2987e-04	-	mae:
0.0395515/660	1s	9ms/step	-	loss:	4.2983e-04	-	mae:
0.0395522/660	1s	9ms/step	-	loss:	4.2976e-04	-	mae:
0.0395529/660	1s	9ms/step	-	loss:	4.2968e-04	-	mae:
0.0395536/660	1s	8ms/step	-	loss:	4.2958e-04	-	mae:
0.0395543/660	0s	8ms/step	-	loss:	4.2947e-04	-	mae:
0.0394550/660	0s	8ms/step	-	loss:	4.2938e-04	-	mae:
0.0394557/660	0s	8ms/step	-	loss:	4.2929e-04	-	mae:
0.0394564/660	0s	8ms/step	-	loss:	4.2919e-04	-	mae:
0.0394571/660	0s	8ms/step	-	loss:	4.2909e-04	-	mae:
0.0394578/660	0s	8ms/step	-	loss:	4.2898e-04	-	mae:
0.0394585/660	0s	8ms/step	-	loss:	4.2886e-04	-	mae:
0.0394592/660	0s	8ms/step	-	loss:	4.2873e-04	-	mae:
0.0394599/660	0s	8ms/step	-	loss:	4.2860e-04	-	mae:
0.0394606/660	0s	8ms/step	-	loss:	4.2847e-04	-	mae:
0.0394613/660	0s	8ms/step	-	loss:	4.2834e-04	-	mae:
0.0394620/660	0s	8ms/step	-	loss:	4.2821e-04	-	mae:
0.0394627/660	0s	8ms/step	-	loss:	4.2807e-04	-	mae:
0.0394633/660	0s	8ms/step	-	loss:	4.2796e-04	-	mae:
0.0393638/660							

Battery SoC Estimation Project Report

0s 0.0393645/660	8ms/step	-	loss:	4.2788e-04	-	mae:
0s 0.0393652/660	8ms/step	-	loss:	4.2775e-04	-	mae:
0s 0.0393659/660	8ms/step	-	loss:	4.2761e-04	-	mae:
0s 0.0393660/660	8ms/step	-	loss:	4.2746e-04	-	mae:
6s 9ms/step - loss: 4.2742e-04 - mae: 0.0393 - val_loss: 2.5457e-04 - val_mae: 0.0223						
Epoch 46/200						
1/660 0.0196	17s 7/660	27ms/step	-	loss:	2.1825e-04	-
5s 0.0245	8ms/step 14/660	-	loss:	2.3529e-04	-	mae: 0.0212
5s 0.0266	8ms/step 21/660	-	loss:	2.6895e-04	-	mae:
5s 0.0279	8ms/step 28/660	-	loss:	2.8965e-04	-	mae:
5s 0.0287	8ms/step 34/660	-	loss:	3.0323e-04	-	mae:
5s 0.0295	8ms/step 39/660	-	loss:	3.1172e-04	-	mae:
5s 0.0304	8ms/step 45/660	-	loss:	3.1966e-04	-	mae:
5s 0.0314	8ms/step 52/660	-	loss:	3.2885e-04	-	mae:
5s 0.0322	8ms/step 59/660	-	loss:	3.3844e-04	-	mae:
4s 0.0327	8ms/step 65/660	-	loss:	3.4681e-04	-	mae:
4s 0.0332	8ms/step 72/660	-	loss:	3.5194e-04	-	mae:
4s 0.0335	8ms/step 79/660	-	loss:	3.5665e-04	-	mae:
4s 0.0338	8ms/step 85/660	-	loss:	3.5999e-04	-	mae:
4s 0.0340	8ms/step 91/660	-	loss:	3.6266e-04	-	mae:
4s 0.0342105/660	8ms/step 98/660	-	loss:	3.6457e-04	-	mae:
4s 0.0343112/660	8ms/step 4s	-	loss:	3.6644e-04	-	mae:
4s 0.0344118/660	8ms/step 8ms/step	-	loss:	3.6786e-04	-	mae:
4s 0.0346125/660	8ms/step 8ms/step	-	loss:	3.6886e-04	-	mae:
4s 0.0347132/660	8ms/step 8ms/step	-	loss:	3.7002e-04	-	mae:
4s 0.0348139/660	8ms/step 8ms/step	-	loss:	3.7145e-04	-	mae:
4s 0.0349146/660	8ms/step 8ms/step	-	loss:	3.7320e-04	-	mae:
4s 0.0350152/660	8ms/step 8ms/step	-	loss:	3.7382e-04	-	mae:
4s 0.0350159/660	8ms/step 8ms/step	-	loss:	3.7432e-04	-	mae:
4s 0.0351164/660	8ms/step 8ms/step	-	loss:	3.7480e-04	-	mae:
4s 0.0351170/660	8ms/step 8ms/step	-	loss:	3.7502e-04	-	mae:
4s 0.0351176/660	8ms/step 8ms/step	-	loss:	3.7536e-04	-	mae:
4s 0.0352182/660	8ms/step 8ms/step	-	loss:	3.7562e-04	-	mae:

Battery SoC Estimation Project Report						
0.0352188/660	3s	8ms/step	-	loss:	3.7570e-04	- mae:
0.0352192/660	3s	8ms/step	-	loss:	3.7574e-04	- mae:
0.0352198/660	3s	8ms/step	-	loss:	3.7582e-04	- mae:
0.0352205/660	3s	9ms/step	-	loss:	3.7593e-04	- mae:
0.0352211/660	3s	9ms/step	-	loss:	3.7607e-04	- mae:
0.0352218/660	3s	8ms/step	-	loss:	3.7645e-04	- mae:
0.0353225/660	3s	8ms/step	-	loss:	3.7679e-04	- mae:
0.0353231/660	3s	8ms/step	-	loss:	3.7707e-04	- mae:
0.0353237/660	3s	8ms/step	-	loss:	3.7732e-04	- mae:
0.0354243/660	3s	9ms/step	-	loss:	3.7758e-04	- mae:
0.0354249/660	3s	9ms/step	-	loss:	3.7782e-04	- mae:
0.0354255/660	3s	9ms/step	-	loss:	3.7801e-04	- mae:
0.0354262/660	3s	9ms/step	-	loss:	3.7826e-04	- mae:
0.0355268/660	3s	9ms/step	-	loss:	3.7850e-04	- mae:
0.0355275/660	3s	9ms/step	-	loss:	3.7878e-04	- mae:
0.0355280/660	3s	9ms/step	-	loss:	3.7896e-04	- mae:
0.0355286/660	3s	9ms/step	-	loss:	3.7911e-04	- mae:
0.0355292/660	3s	9ms/step	-	loss:	3.7925e-04	- mae:
0.0356298/660	3s	9ms/step	-	loss:	3.7936e-04	- mae:
0.0356304/660	3s	9ms/step	-	loss:	3.7948e-04	- mae:
0.0356310/660	3s	9ms/step	-	loss:	3.7959e-04	- mae:
0.0356316/660	2s	9ms/step	-	loss:	3.7972e-04	- mae:
0.0356322/660	2s	9ms/step	-	loss:	3.7982e-04	- mae:
0.0356328/660	2s	9ms/step	-	loss:	3.7992e-04	- mae:
0.0356335/660	2s	9ms/step	-	loss:	3.8000e-04	- mae:
0.0356342/660	2s	9ms/step	-	loss:	3.8005e-04	- mae:
0.0357349/660	2s	9ms/step	-	loss:	3.8008e-04	- mae:
0.0357356/660	2s	9ms/step	-	loss:	3.8010e-04	- mae:
0.0357362/660	2s	9ms/step	-	loss:	3.8010e-04	- mae:
0.0357369/660	2s	9ms/step	-	loss:	3.8008e-04	- mae:
0.0357376/660	2s	9ms/step	-	loss:	3.8003e-04	- mae:
0.0357383/660	2s	9ms/step	-	loss:	3.7998e-04	- mae:
0.0357390/660						

Battery SoC Estimation Project Report

0.0357396/660	2s	9ms/step	-	loss:	3.7992e-04	-	mae:
0.0357401/660	2s	9ms/step	-	loss:	3.7985e-04	-	mae:
0.0356407/660	2s	9ms/step	-	loss:	3.7976e-04	-	mae:
0.0356414/660	2s	9ms/step	-	loss:	3.7964e-04	-	mae:
0.0356420/660	2s	9ms/step	-	loss:	3.7949e-04	-	mae:
0.0356427/660	2s	9ms/step	-	loss:	3.7933e-04	-	mae:
0.0356433/660	1s	9ms/step	-	loss:	3.7918e-04	-	mae:
0.0356439/660	1s	9ms/step	-	loss:	3.7903e-04	-	mae:
0.0356446/660	1s	9ms/step	-	loss:	3.7889e-04	-	mae:
0.0356452/660	1s	9ms/step	-	loss:	3.7872e-04	-	mae:
0.0355459/660	1s	9ms/step	-	loss:	3.7857e-04	-	mae:
0.0355466/660	1s	9ms/step	-	loss:	3.7842e-04	-	mae:
0.0355473/660	1s	8ms/step	-	loss:	3.7813e-04	-	mae:
0.0355479/660	1s	8ms/step	-	loss:	3.7800e-04	-	mae:
0.0355486/660	1s	8ms/step	-	loss:	3.7782e-04	-	mae:
0.0355492/660	1s	8ms/step	-	loss:	3.7765e-04	-	mae:
0.0355497/660	1s	9ms/step	-	loss:	3.7751e-04	-	mae:
0.0355501/660	1s	9ms/step	-	loss:	3.7741e-04	-	mae:
0.0355506/660	1s	9ms/step	-	loss:	3.7729e-04	-	mae:
0.0354511/660	1s	9ms/step	-	loss:	3.7717e-04	-	mae:
0.0354515/660	1s	9ms/step	-	loss:	3.7706e-04	-	mae:
0.0354519/660	1s	9ms/step	-	loss:	3.7695e-04	-	mae:
0.0354524/660	1s	9ms/step	-	loss:	3.7681e-04	-	mae:
0.0354529/660	1s	9ms/step	-	loss:	3.7666e-04	-	mae:
0.0354533/660	1s	9ms/step	-	loss:	3.7653e-04	-	mae:
0.0354538/660	1s	9ms/step	-	loss:	3.7638e-04	-	mae:
0.0354543/660	1s	9ms/step	-	loss:	3.7622e-04	-	mae:
0.0353548/660	0s	9ms/step	-	loss:	3.7606e-04	-	mae:
0.0353553/660	0s	9ms/step	-	loss:	3.7592e-04	-	mae:
0.0353557/660	0s	9ms/step	-	loss:	3.7581e-04	-	mae:
0.0353562/660	0s	9ms/step	-	loss:	3.7566e-04	-	mae:
0.0353567/660	0s	9ms/step	-	loss:	3.7551e-04	-	mae:
0.0353572/660							

Battery SoC Estimation Project Report

0s	9ms/step	-	loss:	3.7536e-04	-	mae:	
0.0353576/660	Os	9ms/step	-	loss:	3.7525e-04	-	mae:
0.0353581/660	Os	9ms/step	-	loss:	3.7510e-04	-	mae:
0.0353586/660	Os	9ms/step	-	loss:	3.7495e-04	-	mae:
0.0352591/660	Os	9ms/step	-	loss:	3.7479e-04	-	mae:
0.0352596/660	Os	9ms/step	-	loss:	3.7465e-04	-	mae:
0.0352601/660	Os	9ms/step	-	loss:	3.7450e-04	-	mae:
0.0352605/660	Os	9ms/step	-	loss:	3.7438e-04	-	mae:
0.0352609/660	Os	9ms/step	-	loss:	3.7427e-04	-	mae:
0.0352613/660	Os	9ms/step	-	loss:	3.7417e-04	-	mae:
0.0352617/660	Os	9ms/step	-	loss:	3.7406e-04	-	mae:
0.0352622/660	Os	9ms/step	-	loss:	3.7392e-04	-	mae:
0.0351627/660	Os	9ms/step	-	loss:	3.7378e-04	-	mae:
0.0351631/660	Os	9ms/step	-	loss:	3.7368e-04	-	mae:
0.0351636/660	Os	9ms/step	-	loss:	3.7356e-04	-	mae:
0.0351641/660	Os	9ms/step	-	loss:	3.7344e-04	-	mae:
0.0351646/660	Os	9ms/step	-	loss:	3.7332e-04	-	mae:
0.0351650/660	Os	9ms/step	-	loss:	3.7322e-04	-	mae:
0.0351654/660	Os	9ms/step	-	loss:	3.7312e-04	-	mae:
0.0351658/660	Os	9ms/step	-	loss:	3.7303e-04	-	mae:
0.0351660/660							

7s 10ms/step - loss: 3.7296e-04 - mae: 0.0351 - val_loss: 3.3220e-04 - val_mae: 0.0317

Epoch 47/200

0.0190	1/660	37:34	3s/step	-	loss:	2.0764e-04	-	mae:
	5/660							
8s	13ms/step	-	loss:	2.2983e-04	-	mae:	0.0212	
	10/660							
8s	13ms/step	-	loss:	2.4454e-04	-	mae:		
0.0227	14/660							
8s	13ms/step	-	loss:	2.6049e-04	-	mae:		
0.0243	19/660							
7s	12ms/step	-	loss:	2.7543e-04	-	mae:		
0.0258	25/660							
7s	11ms/step	-	loss:	2.9033e-04	-	mae:		
0.0274	31/660							
6s	11ms/step	-	loss:	2.9984e-04	-	mae:		
0.0283	37/660							
6s	11ms/step	-	loss:	3.0816e-04	-	mae:		
0.0291	43/660							
6s	10ms/step	-	loss:	3.1782e-04	-	mae:		
0.0301	48/660							
6s	10ms/step	-	loss:	3.2404e-04	-	mae:		
0.0307	55/660							
6s	10ms/step	-	loss:	3.3218e-04	-	mae:		
0.0315	61/660							
5s	10ms/step	-	loss:	3.3817e-04	-	mae:		
0.0321	68/660							

Battery SoC Estimation Project Report							
0.0325	5s	10ms/step	-	loss:	3.4286e-04	-	mae:
		74/660					
0.0329	5s	10ms/step	-	loss:	3.4601e-04	-	mae:
		81/660					
0.0332	5s	10ms/step	-	loss:	3.4902e-04	-	mae:
		88/660					
	5s	9ms/step	-	loss:	3.5158e-04	-	mae: 0.0334
		95/660					
0.0336102/660	5s	9ms/step	-	loss:	3.5366e-04	-	mae:
0.0338109/660	5s	9ms/step	-	loss:	3.5526e-04	-	mae:
0.0339116/660	5s	9ms/step	-	loss:	3.5654e-04	-	mae:
0.0340123/660	4s	9ms/step	-	loss:	3.5784e-04	-	mae:
0.0342129/660	4s	9ms/step	-	loss:	3.5929e-04	-	mae:
0.0343135/660	4s	9ms/step	-	loss:	3.6024e-04	-	mae:
0.0344142/660	4s	9ms/step	-	loss:	3.6100e-04	-	mae:
0.0344148/660	4s	9ms/step	-	loss:	3.6169e-04	-	mae:
0.0345155/660	4s	9ms/step	-	loss:	3.6224e-04	-	mae:
0.0345161/660	4s	9ms/step	-	loss:	3.6279e-04	-	mae:
0.0346166/660	4s	9ms/step	-	loss:	3.6315e-04	-	mae:
0.0346170/660	4s	9ms/step	-	loss:	3.6341e-04	-	mae:
0.0346176/660	4s	9ms/step	-	loss:	3.6375e-04	-	mae:
0.0347183/660	4s	9ms/step	-	loss:	3.6419e-04	-	mae:
0.0347190/660	4s	9ms/step	-	loss:	3.6450e-04	-	mae:
0.0347197/660	4s	9ms/step	-	loss:	3.6477e-04	-	mae:
0.0348203/660	4s	9ms/step	-	loss:	3.6510e-04	-	mae:
0.0348210/660	4s	9ms/step	-	loss:	3.6536e-04	-	mae:
0.0348217/660	3s	9ms/step	-	loss:	3.6565e-04	-	mae:
0.0349223/660	3s	9ms/step	-	loss:	3.6595e-04	-	mae:
0.0349230/660	3s	9ms/step	-	loss:	3.6628e-04	-	mae:
0.0349236/660	3s	9ms/step	-	loss:	3.6666e-04	-	mae:
0.0350243/660	3s	9ms/step	-	loss:	3.6695e-04	-	mae:
0.0350250/660	3s	9ms/step	-	loss:	3.6730e-04	-	mae:
0.0350257/660	3s	9ms/step	-	loss:	3.6761e-04	-	mae:
0.0350263/660	3s	9ms/step	-	loss:	3.6785e-04	-	mae:
0.0351269/660	3s	9ms/step	-	loss:	3.6811e-04	-	mae:
0.0351275/660	3s	9ms/step	-	loss:	3.6836e-04	-	mae:
0.0351281/660	3s	9ms/step	-	loss:	3.6863e-04	-	mae:

Battery SoC Estimation Project Report

3s 0.0351288/660	9ms/step	-	loss:	3.6887e-04	-	mae:
3s 0.0352293/660	9ms/step	-	loss:	3.6910e-04	-	mae:
3s 0.0352300/660	9ms/step	-	loss:	3.6925e-04	-	mae:
3s 0.0352307/660	9ms/step	-	loss:	3.6944e-04	-	mae:
3s 0.0352314/660	9ms/step	-	loss:	3.6966e-04	-	mae:
3s 0.0352321/660	9ms/step	-	loss:	3.6988e-04	-	mae:
2s 0.0352328/660	9ms/step	-	loss:	3.7011e-04	-	mae:
2s 0.0353335/660	9ms/step	-	loss:	3.7032e-04	-	mae:
2s 0.0353342/660	9ms/step	-	loss:	3.7049e-04	-	mae:
2s 0.0353348/660	9ms/step	-	loss:	3.7064e-04	-	mae:
2s 0.0353355/660	9ms/step	-	loss:	3.7075e-04	-	mae:
2s 0.0353362/660	9ms/step	-	loss:	3.7085e-04	-	mae:
2s 0.0353369/660	9ms/step	-	loss:	3.7103e-04	-	mae:
2s 0.0353376/660	9ms/step	-	loss:	3.7108e-04	-	mae:
2s 0.0353383/660	9ms/step	-	loss:	3.7110e-04	-	mae:
2s 0.0353390/660	9ms/step	-	loss:	3.7113e-04	-	mae:
2s 0.0353396/660	9ms/step	-	loss:	3.7113e-04	-	mae:
2s 0.0353403/660	9ms/step	-	loss:	3.7109e-04	-	mae:
2s 0.0353410/660	9ms/step	-	loss:	3.7102e-04	-	mae:
2s 0.0353416/660	9ms/step	-	loss:	3.7095e-04	-	mae:
2s 0.0353422/660	9ms/step	-	loss:	3.7088e-04	-	mae:
1s 0.0353429/660	9ms/step	-	loss:	3.7081e-04	-	mae:
1s 0.0353436/660	9ms/step	-	loss:	3.7073e-04	-	mae:
1s 0.0353443/660	9ms/step	-	loss:	3.7066e-04	-	mae:
1s 0.0353450/660	9ms/step	-	loss:	3.7059e-04	-	mae:
1s 0.0353456/660	9ms/step	-	loss:	3.7053e-04	-	mae:
1s 0.0353463/660	9ms/step	-	loss:	3.7046e-04	-	mae:
1s 0.0353470/660	9ms/step	-	loss:	3.7039e-04	-	mae:
1s 0.0353477/660	9ms/step	-	loss:	3.7031e-04	-	mae:
1s 0.0352484/660	9ms/step	-	loss:	3.7020e-04	-	mae:
1s 0.0352491/660	9ms/step	-	loss:	3.7008e-04	-	mae:
1s 0.0352498/660	9ms/step	-	loss:	3.6995e-04	-	mae:
0.0352505/660	8ms/step	-	loss:	3.6995e-04	-	mae:

Battery SoC Estimation Project Report

0.0352511/660	1s	8ms/step	-	loss:	3.6984e-04	-	mae:
0.0352518/660	1s	8ms/step	-	loss:	3.6974e-04	-	mae:
0.0352525/660	1s	8ms/step	-	loss:	3.6960e-04	-	mae:
0.0352532/660	1s	8ms/step	-	loss:	3.6945e-04	-	mae:
0.0351539/660	1s	8ms/step	-	loss:	3.6929e-04	-	mae:
0.0351544/660	0s	8ms/step	-	loss:	3.6901e-04	-	mae:
0.0351551/660	0s	8ms/step	-	loss:	3.6886e-04	-	mae:
0.0351558/660	0s	8ms/step	-	loss:	3.6872e-04	-	mae:
0.0351565/660	0s	8ms/step	-	loss:	3.6857e-04	-	mae:
0.0351572/660	0s	8ms/step	-	loss:	3.6843e-04	-	mae:
0.0351579/660	0s	8ms/step	-	loss:	3.6828e-04	-	mae:
0.0350586/660	0s	8ms/step	-	loss:	3.6813e-04	-	mae:
0.0350593/660	0s	8ms/step	-	loss:	3.6797e-04	-	mae:
0.0350600/660	0s	8ms/step	-	loss:	3.6782e-04	-	mae:
0.0350606/660	0s	8ms/step	-	loss:	3.6769e-04	-	mae:
0.0350613/660	0s	8ms/step	-	loss:	3.6755e-04	-	mae:
0.0350620/660	0s	8ms/step	-	loss:	3.6740e-04	-	mae:
0.0350627/660	0s	8ms/step	-	loss:	3.6725e-04	-	mae:
0.0349634/660	0s	8ms/step	-	loss:	3.6711e-04	-	mae:
0.0349641/660	0s	8ms/step	-	loss:	3.6698e-04	-	mae:
0.0349648/660	0s	8ms/step	-	loss:	3.6684e-04	-	mae:
0.0349655/660	0s	8ms/step	-	loss:	3.6670e-04	-	mae:
0.0349660/660							

9s 9ms/step - loss: 3.6659e-04 - mae: 0.0349 - val_loss: 2.8919e-04 - val_mae: 0.0272

Epoch 48/200

0.0192	1/660	16s	25ms/step	-	loss:	2.0526e-04	-	mae:
	8/660							
0.0245	5s	8ms/step	-	loss:	2.2791e-04	-	mae:	0.0210
	15/660							
0.0264	5s	8ms/step	-	loss:	2.6328e-04	-	mae:	
0.0278	22/660							
0.0284	5s	8ms/step	-	loss:	2.8305e-04	-	mae:	
0.0292	29/660							
0.0300	33/660							
0.0306	38/660							
	5s	9ms/step	-	loss:	2.9684e-04	-	mae:	
	43/660							
	5s	9ms/step	-	loss:	3.0310e-04	-	mae:	
	48/660							
	5s	10ms/step	-	loss:	3.1071e-04	-	mae:	
	53/660							

Battery SoC Estimation Project Report

	5s	10ms/step	-	loss:	3.3096e-04	-	mae:
0.0312		58/660					
	6s	10ms/step	-	loss:	3.3590e-04	-	mae:
0.0317		62/660					
	6s	10ms/step	-	loss:	3.3925e-04	-	mae:
0.0320		67/660					
	6s	10ms/step	-	loss:	3.4216e-04	-	mae:
0.0323		72/660					
	6s	11ms/step	-	loss:	3.4472e-04	-	mae:
0.0325		76/660					
	6s	11ms/step	-	loss:	3.4615e-04	-	mae:
0.0327		80/660					
	6s	11ms/step	-	loss:	3.4746e-04	-	mae:
0.0328		85/660					
	6s	11ms/step	-	loss:	3.4915e-04	-	mae:
0.0330		90/660					
	6s	11ms/step	-	loss:	3.5046e-04	-	mae:
0.0331		95/660					
	6s	11ms/step	-	loss:	3.5175e-04	-	mae:
0.0332	100/660						
	6s	11ms/step	-	loss:	3.5271e-04	-	mae:
0.0333	105/660						
	6s	11ms/step	-	loss:	3.5362e-04	-	mae:
0.0334	110/660						
	6s	11ms/step	-	loss:	3.5433e-04	-	mae:
0.0335	115/660						
	6s	11ms/step	-	loss:	3.5516e-04	-	mae:
0.0336	120/660						
	5s	11ms/step	-	loss:	3.5606e-04	-	mae:
0.0337	124/660						
	5s	11ms/step	-	loss:	3.5681e-04	-	mae:
0.0337	128/660						
	5s	11ms/step	-	loss:	3.5741e-04	-	mae:
0.0338	133/660						
	5s	11ms/step	-	loss:	3.5809e-04	-	mae:
0.0339	138/660						
	5s	11ms/step	-	loss:	3.5873e-04	-	mae:
0.0339	143/660						
	5s	11ms/step	-	loss:	3.5930e-04	-	mae:
0.0340	148/660						
	5s	11ms/step	-	loss:	3.5982e-04	-	mae:
0.0340	151/660						
	5s	11ms/step	-	loss:	3.6008e-04	-	mae:
0.0341	155/660						
	5s	11ms/step	-	loss:	3.6040e-04	-	mae:
0.0341	160/660						
	5s	12ms/step	-	loss:	3.6069e-04	-	mae:
0.0341	164/660						
	5s	12ms/step	-	loss:	3.6083e-04	-	mae:
0.0341	168/660						
	5s	12ms/step	-	loss:	3.6102e-04	-	mae:
0.0342	173/660						
	5s	12ms/step	-	loss:	3.6129e-04	-	mae:
0.0342	177/660						
	5s	12ms/step	-	loss:	3.6142e-04	-	mae:
0.0342	181/660						
	5s	12ms/step	-	loss:	3.6147e-04	-	mae:
0.0342	186/660						
	5s	12ms/step	-	loss:	3.6146e-04	-	mae:
0.0342	190/660						
	5s	12ms/step	-	loss:	3.6152e-04	-	mae:
0.0342	193/660						
	5s	12ms/step	-	loss:	3.6155e-04	-	mae:
0.0342	197/660						
	5s	12ms/step	-	loss:	3.6158e-04	-	mae:
0.0342	201/660						

Battery SoC Estimation Project Report						
5s 0.0342205/660	12ms/step	-	loss:	3.6158e-04	-	mae:
5s 0.0342210/660	12ms/step	-	loss:	3.6159e-04	-	mae:
5s 0.0342216/660	12ms/step	-	loss:	3.6158e-04	-	mae:
5s 0.0342222/660	12ms/step	-	loss:	3.6159e-04	-	mae:
5s 0.0342229/660	12ms/step	-	loss:	3.6168e-04	-	mae:
4s 0.0342236/660	12ms/step	-	loss:	3.6180e-04	-	mae:
4s 0.0342243/660	11ms/step	-	loss:	3.6190e-04	-	mae:
4s 0.0343249/660	11ms/step	-	loss:	3.6203e-04	-	mae:
4s 0.0343256/660	11ms/step	-	loss:	3.6212e-04	-	mae:
4s 0.0343263/660	11ms/step	-	loss:	3.6218e-04	-	mae:
4s 0.0343269/660	11ms/step	-	loss:	3.6229e-04	-	mae:
4s 0.0343276/660	11ms/step	-	loss:	3.6242e-04	-	mae:
4s 0.0343283/660	11ms/step	-	loss:	3.6273e-04	-	mae:
4s 0.0343290/660	11ms/step	-	loss:	3.6284e-04	-	mae:
3s 0.0343297/660	11ms/step	-	loss:	3.6293e-04	-	mae:
3s 0.0343304/660	11ms/step	-	loss:	3.6309e-04	-	mae:
3s 0.0344310/660	11ms/step	-	loss:	3.6362e-04	-	mae:
3s 0.0344317/660	11ms/step	-	loss:	3.6455e-04	-	mae:
3s 0.0345324/660	11ms/step	-	loss:	3.6555e-04	-	mae:
3s 0.0346330/660	11ms/step	-	loss:	3.6648e-04	-	mae:
3s 0.0347336/660	11ms/step	-	loss:	3.6738e-04	-	mae:
3s 0.0348342/660	11ms/step	-	loss:	3.6828e-04	-	mae:
3s 0.0349349/660	11ms/step	-	loss:	3.6929e-04	-	mae:
3s 0.0349356/660	10ms/step	-	loss:	3.7025e-04	-	mae:
3s 0.0350363/660	10ms/step	-	loss:	3.7118e-04	-	mae:
3s 0.0351369/660	10ms/step	-	loss:	3.7195e-04	-	mae:
2s 0.0352376/660	10ms/step	-	loss:	3.7279e-04	-	mae:
2s 0.0353383/660	10ms/step	-	loss:	3.7359e-04	-	mae:
2s 0.0353390/660	10ms/step	-	loss:	3.7436e-04	-	mae:
2s 0.0354396/660	10ms/step	-	loss:	3.7495e-04	-	mae:
2s 0.0354403/660	10ms/step	-	loss:	3.7559e-04	-	mae:
2s 0.0355410/660	10ms/step	-	loss:	3.7617e-04	-	mae:
2s 0.0355417/660	10ms/step	-	loss:	3.7617e-04	-	mae:

Battery SoC Estimation Project Report

2s 0.0356423/660	10ms/step	-	loss:	3.7671e-04	-	mae:
2s 0.0356429/660	10ms/step	-	loss:	3.7717e-04	-	mae:
2s 0.0357436/660	10ms/step	-	loss:	3.7761e-04	-	mae:
2s 0.0357443/660	10ms/step	-	loss:	3.7809e-04	-	mae:
2s 0.0357450/660	10ms/step	-	loss:	3.7855e-04	-	mae:
2s 0.0358457/660	10ms/step	-	loss:	3.7898e-04	-	mae:
2s 0.0358464/660	10ms/step	-	loss:	3.7940e-04	-	mae:
1s 0.0358471/660	10ms/step	-	loss:	3.7980e-04	-	mae:
1s 0.0359478/660	10ms/step	-	loss:	3.8018e-04	-	mae:
1s 0.0359484/660	10ms/step	-	loss:	3.8052e-04	-	mae:
1s 0.0359491/660	10ms/step	-	loss:	3.8078e-04	-	mae:
1s 0.0359496/660	10ms/step	-	loss:	3.8105e-04	-	mae:
1s 0.0360502/660	10ms/step	-	loss:	3.8123e-04	-	mae:
1s 0.0360509/660	10ms/step	-	loss:	3.8143e-04	-	mae:
1s 0.0360515/660	10ms/step	-	loss:	3.8167e-04	-	mae:
1s 0.0360522/660	10ms/step	-	loss:	3.8184e-04	-	mae:
1s 0.0360529/660	10ms/step	-	loss:	3.8201e-04	-	mae:
1s 0.0360536/660	10ms/step	-	loss:	3.8216e-04	-	mae:
1s 0.0360542/660	10ms/step	-	loss:	3.8228e-04	-	mae:
1s 0.0360548/660	10ms/step	-	loss:	3.8237e-04	-	mae:
1s 0.0361555/660	10ms/step	-	loss:	3.8246e-04	-	mae:
1s 0.0361562/660	10ms/step	-	loss:	3.8256e-04	-	mae:
0s 0.0361568/660	10ms/step	-	loss:	3.8265e-04	-	mae:
0s 0.0361574/660	10ms/step	-	loss:	3.8271e-04	-	mae:
0s 0.0361580/660	10ms/step	-	loss:	3.8277e-04	-	mae:
0s 0.0361587/660	10ms/step	-	loss:	3.8282e-04	-	mae:
0s 0.0361594/660	10ms/step	-	loss:	3.8288e-04	-	mae:
0s 0.0361599/660	10ms/step	-	loss:	3.8292e-04	-	mae:
0s 0.0361606/660	10ms/step	-	loss:	3.8295e-04	-	mae:
0s 0.0361613/660	10ms/step	-	loss:	3.8299e-04	-	mae:
0s 0.0361618/660	10ms/step	-	loss:	3.8303e-04	-	mae:
0s 0.0361625/660	10ms/step	-	loss:	3.8305e-04	-	mae:
0s 0.0361632/660	10ms/step	-	loss:	3.8308e-04	-	mae:

Battery SoC Estimation Project Report

0s 639/660	9ms/step	-	loss:	3.8311e-04	-	mae:	0.0361
0s 0.0361646/660	9ms/step	-	loss:	3.8315e-04	-	mae:	
0s 0.0361652/660	9ms/step	-	loss:	3.8318e-04	-	mae:	
0s 0.0361659/660	9ms/step	-	loss:	3.8319e-04	-	mae:	
0s 0.0361660/660	9ms/step	-	loss:	3.8320e-04	-	mae:	
7s 10ms/step - loss: 3.8320e-04 - mae: 0.0361 - val_loss: 2.3205e-04 - val_mae: 0.0201							
Epoch 49/200							
0.0147	1/660	38:53	4s/step	-	loss:	1.6340e-04	-
	6/660				mae:		
8s	12ms/step	-	loss:	1.8746e-04	-	mae:	0.0171
	10/660						
8s	13ms/step	-	loss:	2.0986e-04	-	mae:	
0.0193	14/660						
8s	13ms/step	-	loss:	2.2872e-04	-	mae:	
0.0212	19/660						
7s	12ms/step	-	loss:	2.4630e-04	-	mae:	
0.0230	25/660						
7s	11ms/step	-	loss:	2.6458e-04	-	mae:	
0.0249	31/660						
6s	11ms/step	-	loss:	2.7514e-04	-	mae:	
0.0259	37/660						
6s	11ms/step	-	loss:	2.8448e-04	-	mae:	
0.0269	44/660						
6s	10ms/step	-	loss:	2.9699e-04	-	mae:	
0.0281	51/660						
6s	10ms/step	-	loss:	3.0683e-04	-	mae:	
0.0291	58/660						
5s	10ms/step	-	loss:	3.1572e-04	-	mae:	
0.0300	65/660						
5s	10ms/step	-	loss:	3.2280e-04	-	mae:	
0.0307	72/660						
5s	9ms/step	-	loss:	3.2867e-04	-	mae:	0.0312
	79/660						
5s	9ms/step	-	loss:	3.3310e-04	-	mae:	
0.0317	84/660						
5s	9ms/step	-	loss:	3.3620e-04	-	mae:	
0.0320	90/660						
5s	9ms/step	-	loss:	3.3914e-04	-	mae:	
0.0322	97/660						
5s	9ms/step	-	loss:	3.4219e-04	-	mae:	
0.0325104/660							
5s	9ms/step	-	loss:	3.4465e-04	-	mae:	
0.0328111/660							
4s	9ms/step	-	loss:	3.4660e-04	-	mae:	
0.0330117/660							
4s	9ms/step	-	loss:	3.4833e-04	-	mae:	
0.0331123/660							
4s	9ms/step	-	loss:	3.5000e-04	-	mae:	
0.0333129/660							
4s	9ms/step	-	loss:	3.5128e-04	-	mae:	
0.0334135/660							
4s	9ms/step	-	loss:	3.5233e-04	-	mae:	
0.0335141/660							
4s	9ms/step	-	loss:	3.5319e-04	-	mae:	
0.0336147/660							
4s	9ms/step	-	loss:	3.5396e-04	-	mae:	
0.0337153/660							
4s	9ms/step	-	loss:	3.5464e-04	-	mae:	
0.0337160/660							
4s	9ms/step	-	loss:	3.5528e-04	-	mae:	
0.0338167/660							

Battery SoC Estimation Project Report						
0.0338173/660	4s	9ms/step	-	loss:	3.5570e-04	- mae:
0.0339179/660	4s	9ms/step	-	loss:	3.5613e-04	- mae:
0.0339186/660	4s	9ms/step	-	loss:	3.5637e-04	- mae:
0.0339193/660	4s	9ms/step	-	loss:	3.5646e-04	- mae:
0.0339199/660	4s	9ms/step	-	loss:	3.5663e-04	- mae:
0.0340204/660	4s	9ms/step	-	loss:	3.5685e-04	- mae:
0.0340211/660	3s	9ms/step	-	loss:	3.5705e-04	- mae:
0.0340218/660	3s	9ms/step	-	loss:	3.5734e-04	- mae:
0.0340225/660	3s	9ms/step	-	loss:	3.5775e-04	- mae:
0.0341231/660	3s	9ms/step	-	loss:	3.5809e-04	- mae:
0.0341238/660	3s	9ms/step	-	loss:	3.5847e-04	- mae:
0.0341245/660	3s	9ms/step	-	loss:	3.5883e-04	- mae:
0.0342252/660	3s	9ms/step	-	loss:	3.5914e-04	- mae:
0.0342258/660	3s	9ms/step	-	loss:	3.5937e-04	- mae:
0.0342263/660	3s	9ms/step	-	loss:	3.5960e-04	- mae:
0.0342267/660	3s	9ms/step	-	loss:	3.5977e-04	- mae:
0.0343271/660	3s	9ms/step	-	loss:	3.5995e-04	- mae:
0.0343275/660	3s	9ms/step	-	loss:	3.6012e-04	- mae:
0.0343280/660	3s	9ms/step	-	loss:	3.6031e-04	- mae:
0.0343285/660	3s	9ms/step	-	loss:	3.6046e-04	- mae:
0.0343290/660	3s	9ms/step	-	loss:	3.6061e-04	- mae:
0.0344295/660	3s	9ms/step	-	loss:	3.6073e-04	- mae:
0.0344299/660	3s	9ms/step	-	loss:	3.6082e-04	- mae:
0.0344304/660	3s	9ms/step	-	loss:	3.6094e-04	- mae:
0.0344308/660	3s	9ms/step	-	loss:	3.6104e-04	- mae:
0.0344313/660	3s	9ms/step	-	loss:	3.6115e-04	- mae:
0.0344318/660	3s	9ms/step	-	loss:	3.6125e-04	- mae:
0.0344322/660	3s	9ms/step	-	loss:	3.6132e-04	- mae:
0.0344326/660	3s	9ms/step	-	loss:	3.6141e-04	- mae:
0.0344331/660	3s	10ms/step	-	loss:	3.6150e-04	- mae:
0.0344335/660	3s	10ms/step	-	loss:	3.6156e-04	- mae:
0.0344340/660	3s	10ms/step	-	loss:	3.6163e-04	- mae:
0.0345345/660						

Battery SoC Estimation Project Report

3s	10ms/step	-	loss:	3.6169e-04	-	mae:
0.0345350/660						
2s	10ms/step	-	loss:	3.6173e-04	-	mae:
0.0345355/660						
2s	10ms/step	-	loss:	3.6176e-04	-	mae:
0.0345360/660						
2s	10ms/step	-	loss:	3.6178e-04	-	mae:
0.0345364/660						
2s	10ms/step	-	loss:	3.6180e-04	-	mae:
0.0345369/660						
2s	10ms/step	-	loss:	3.6181e-04	-	mae:
0.0345374/660						
2s	10ms/step	-	loss:	3.6181e-04	-	mae:
0.0345378/660						
2s	10ms/step	-	loss:	3.6180e-04	-	mae:
0.0345382/660						
2s	10ms/step	-	loss:	3.6178e-04	-	mae:
0.0345386/660						
2s	10ms/step	-	loss:	3.6177e-04	-	mae:
0.0345390/660						
2s	10ms/step	-	loss:	3.6176e-04	-	mae:
0.0345394/660						
2s	10ms/step	-	loss:	3.6173e-04	-	mae:
0.0345399/660						
2s	10ms/step	-	loss:	3.6168e-04	-	mae:
0.0345404/660						
2s	10ms/step	-	loss:	3.6162e-04	-	mae:
0.0345408/660						
2s	10ms/step	-	loss:	3.6155e-04	-	mae:
0.0345412/660						
2s	10ms/step	-	loss:	3.6149e-04	-	mae:
0.0344417/660						
2s	10ms/step	-	loss:	3.6139e-04	-	mae:
0.0344421/660						
2s	10ms/step	-	loss:	3.6133e-04	-	mae:
0.0344425/660						
2s	10ms/step	-	loss:	3.6126e-04	-	mae:
0.0344429/660						
2s	10ms/step	-	loss:	3.6120e-04	-	mae:
0.0344433/660						
2s	10ms/step	-	loss:	3.6114e-04	-	mae:
0.0344437/660						
2s	10ms/step	-	loss:	3.6108e-04	-	mae:
0.0344442/660						
2s	10ms/step	-	loss:	3.6103e-04	-	mae:
0.0344449/660						
2s	10ms/step	-	loss:	3.6094e-04	-	mae:
0.0344455/660						
2s	10ms/step	-	loss:	3.6088e-04	-	mae:
0.0344462/660						
2s	10ms/step	-	loss:	3.6082e-04	-	mae:
0.0344469/660						
1s	10ms/step	-	loss:	3.6077e-04	-	mae:
0.0344476/660						
1s	10ms/step	-	loss:	3.6070e-04	-	mae:
0.0344483/660						
1s	10ms/step	-	loss:	3.6062e-04	-	mae:
0.0344490/660						
1s	10ms/step	-	loss:	3.6052e-04	-	mae:
0.0344495/660						
1s	10ms/step	-	loss:	3.6044e-04	-	mae:
0.0343501/660						
1s	10ms/step	-	loss:	3.6035e-04	-	mae:
0.0343508/660						
1s	10ms/step	-	loss:	3.6026e-04	-	mae:
0.0343515/660						

Battery SoC Estimation Project Report

0.0343522/660	1s	10ms/step	-	loss:	3.6016e-04	-	mae:
0.0343529/660	1s	10ms/step	-	loss:	3.6004e-04	-	mae:
0.0343536/660	1s	10ms/step	-	loss:	3.5990e-04	-	mae:
0.0343542/660	1s	10ms/step	-	loss:	3.5975e-04	-	mae:
0.0343548/660	1s	10ms/step	-	loss:	3.5961e-04	-	mae:
0.0343554/660	1s	10ms/step	-	loss:	3.5949e-04	-	mae:
0.0342561/660	0s	10ms/step	-	loss:	3.5937e-04	-	mae:
0.0342567/660	0s	10ms/step	-	loss:	3.5921e-04	-	mae:
0.0342574/660	0s	10ms/step	-	loss:	3.5909e-04	-	mae:
0.0342581/660	0s	10ms/step	-	loss:	3.5895e-04	-	mae:
0.0342588/660	0s	10ms/step	-	loss:	3.5880e-04	-	mae:
0.0342595/660	0s	10ms/step	-	loss:	3.5865e-04	-	mae:
0.0342602/660	0s	10ms/step	-	loss:	3.5850e-04	-	mae:
0.0341609/660	0s	10ms/step	-	loss:	3.5836e-04	-	mae:
0.0341615/660	0s	10ms/step	-	loss:	3.5823e-04	-	mae:
0.0341620/660	0s	10ms/step	-	loss:	3.5812e-04	-	mae:
0.0341627/660	0s	10ms/step	-	loss:	3.5802e-04	-	mae:
0.0341634/660	0s	10ms/step	-	loss:	3.5789e-04	-	mae:
0.0341640/660	0s	10ms/step	-	loss:	3.5776e-04	-	mae:
0.0341647/660	0s	10ms/step	-	loss:	3.5766e-04	-	mae:
0.0341654/660	0s	10ms/step	-	loss:	3.5753e-04	-	mae:
0.0341660/660	0s	10ms/step	-	loss:	3.5740e-04	-	mae:
0.0340660/660	0s	10ms/step	-	loss:	3.5729e-04	-	mae:

11s 11ms/step - loss: 3.5727e-04 - mae: 0.0340 - val_loss: 2.8826e-04 - val_mae: 0.0278

Epoch 50/200

0.0215	1/660	35:23	3s/step	-	loss:	2.2706e-04	-	mae:
	6/660							
	7s	12ms/step	-	loss:	2.2302e-04	-	mae:	0.0210
	11/660							
0.0232	7s	12ms/step	-	loss:	2.4585e-04	-	mae:	
	16/660							
0.0249	7s	12ms/step	-	loss:	2.6279e-04	-	mae:	
	21/660							
0.0263	7s	12ms/step	-	loss:	2.7619e-04	-	mae:	
	27/660							
0.0276	6s	11ms/step	-	loss:	2.8889e-04	-	mae:	
	33/660							
0.0284	6s	11ms/step	-	loss:	2.9744e-04	-	mae:	
	39/660							
0.0292	6s	10ms/step	-	loss:	3.0577e-04	-	mae:	
	46/660							
0.0302	6s	10ms/step	-	loss:	3.1577e-04	-	mae:	
	53/660							

Battery SoC Estimation Project Report

0.0311	5s	10ms/step	-	loss:	3.2479e-04	-	mae:
	5s	60/660	-	loss:	3.3209e-04	-	mae: 0.0318
	5s	9ms/step	-	loss:	3.3701e-04	-	mae:
	5s	67/660	-	loss:	3.4074e-04	-	mae:
0.0323	5s	74/660	-	loss:	3.4360e-04	-	mae:
0.0327	5s	81/660	-	loss:	3.4586e-04	-	mae:
0.0330	5s	88/660	-	loss:	3.4762e-04	-	mae:
0.0332	5s	95/660	-	loss:	3.4874e-04	-	mae:
0.0333101/660	5s	9ms/step	-	loss:	3.4971e-04	-	mae:
0.0334107/660	4s	9ms/step	-	loss:	3.5053e-04	-	mae:
0.0335113/660	4s	9ms/step	-	loss:	3.5169e-04	-	mae:
0.0336119/660	4s	9ms/step	-	loss:	3.5278e-04	-	mae:
0.0337125/660	4s	9ms/step	-	loss:	3.5354e-04	-	mae:
0.0338131/660	4s	9ms/step	-	loss:	3.5427e-04	-	mae:
0.0339138/660	4s	9ms/step	-	loss:	3.5482e-04	-	mae:
0.0340144/660	4s	9ms/step	-	loss:	3.5549e-04	-	mae:
0.0340151/660	4s	9ms/step	-	loss:	3.5608e-04	-	mae:
0.0341158/660	4s	9ms/step	-	loss:	3.5648e-04	-	mae:
0.0342165/660	4s	9ms/step	-	loss:	3.5702e-04	-	mae:
0.0342172/660	4s	9ms/step	-	loss:	3.5737e-04	-	mae:
0.0342178/660	4s	9ms/step	-	loss:	3.5754e-04	-	mae:
0.0343185/660	4s	9ms/step	-	loss:	3.5774e-04	-	mae:
0.0343192/660	4s	9ms/step	-	loss:	3.5797e-04	-	mae:
0.0343199/660	3s	9ms/step	-	loss:	3.5801e-04	-	mae:
0.0343206/660	3s	9ms/step	-	loss:	3.5812e-04	-	mae:
0.0343212/660	3s	9ms/step	-	loss:	3.5827e-04	-	mae:
0.0343219/660	3s	9ms/step	-	loss:	3.5843e-04	-	mae:
0.0343225/660	3s	9ms/step	-	loss:	3.5853e-04	-	mae:
0.0344232/660	3s	9ms/step	-	loss:	3.5865e-04	-	mae:
0.0344238/660	3s	9ms/step	-	loss:	3.5873e-04	-	mae:
0.0344245/660	3s	9ms/step	-	loss:	3.5876e-04	-	mae:
0.0344251/660	3s	9ms/step	-	loss:	3.5886e-04	-	mae:
0.0344257/660	3s	9ms/step	-	loss:	3.5886e-04	-	mae:
0.0344263/660	3s	9ms/step	-	loss:	3.5886e-04	-	mae:
0.0344270/660	3s	9ms/step	-	loss:	3.5886e-04	-	mae:

Battery SoC Estimation Project Report						
0.0344277/660	3s	9ms/step	-	loss:	3.5898e-04	- mae:
0.0344284/660	3s	9ms/step	-	loss:	3.5912e-04	- mae:
0.0344290/660	3s	9ms/step	-	loss:	3.5920e-04	- mae:
0.0344297/660	3s	9ms/step	-	loss:	3.5927e-04	- mae:
0.0344304/660	3s	9ms/step	-	loss:	3.5931e-04	- mae:
0.0344311/660	2s	9ms/step	-	loss:	3.5940e-04	- mae:
0.0344317/660	2s	9ms/step	-	loss:	3.5943e-04	- mae:
0.0344323/660	2s	9ms/step	-	loss:	3.5946e-04	- mae:
0.0344329/660	2s	9ms/step	-	loss:	3.5948e-04	- mae:
0.0344336/660	2s	9ms/step	-	loss:	3.5947e-04	- mae:
0.0344343/660	2s	9ms/step	-	loss:	3.5944e-04	- mae:
0.0344348/660	2s	9ms/step	-	loss:	3.5940e-04	- mae:
0.0344355/660	2s	9ms/step	-	loss:	3.5932e-04	- mae:
0.0344362/660	2s	9ms/step	-	loss:	3.5923e-04	- mae:
0.0344369/660	2s	9ms/step	-	loss:	3.5912e-04	- mae:
0.0344376/660	2s	9ms/step	-	loss:	3.5898e-04	- mae:
0.0344383/660	2s	9ms/step	-	loss:	3.5882e-04	- mae:
0.0344390/660	2s	9ms/step	-	loss:	3.5867e-04	- mae:
0.0344397/660	2s	9ms/step	-	loss:	3.5849e-04	- mae:
0.0343403/660	2s	9ms/step	-	loss:	3.5833e-04	- mae:
0.0343410/660	2s	9ms/step	-	loss:	3.5812e-04	- mae:
0.0343417/660	2s	9ms/step	-	loss:	3.5790e-04	- mae:
0.0343424/660	2s	8ms/step	-	loss:	3.5770e-04	- mae:
0.0343431/660	1s	8ms/step	-	loss:	3.5751e-04	- mae:
0.0342438/660	1s	8ms/step	-	loss:	3.5733e-04	- mae:
0.0342445/660	1s	8ms/step	-	loss:	3.5715e-04	- mae:
0.0342452/660	1s	8ms/step	-	loss:	3.5698e-04	- mae:
0.0342459/660	1s	8ms/step	-	loss:	3.5682e-04	- mae:
0.0342466/660	1s	8ms/step	-	loss:	3.5667e-04	- mae:
0.0342472/660	1s	8ms/step	-	loss:	3.5653e-04	- mae:
0.0341478/660	1s	8ms/step	-	loss:	3.5639e-04	- mae:
0.0341485/660	1s	8ms/step	-	loss:	3.5622e-04	- mae:
0.0341491/660						

Battery SoC Estimation Project Report

0.0341496/660	1s	8ms/step	-	loss:	3.5606e-04	-	mae:
0.0341500/660	1s	9ms/step	-	loss:	3.5594e-04	-	mae:
0.0341505/660	1s	9ms/step	-	loss:	3.5585e-04	-	mae:
0.0341509/660	1s	9ms/step	-	loss:	3.5574e-04	-	mae:
0.0341513/660	1s	9ms/step	-	loss:	3.5566e-04	-	mae:
0.0340518/660	1s	9ms/step	-	loss:	3.5546e-04	-	mae:
0.0340522/660	1s	9ms/step	-	loss:	3.5536e-04	-	mae:
0.0340527/660	1s	9ms/step	-	loss:	3.5523e-04	-	mae:
0.0340532/660	1s	9ms/step	-	loss:	3.5510e-04	-	mae:
0.0340537/660	1s	9ms/step	-	loss:	3.5496e-04	-	mae:
0.0340542/660	1s	9ms/step	-	loss:	3.5482e-04	-	mae:
0.0340547/660	1s	9ms/step	-	loss:	3.5468e-04	-	mae:
0.0340552/660	0s	9ms/step	-	loss:	3.5455e-04	-	mae:
0.0339557/660	0s	9ms/step	-	loss:	3.5442e-04	-	mae:
0.0339562/660	0s	9ms/step	-	loss:	3.5429e-04	-	mae:
0.0339566/660	0s	9ms/step	-	loss:	3.5418e-04	-	mae:
0.0339571/660	0s	9ms/step	-	loss:	3.5406e-04	-	mae:
0.0339576/660	0s	9ms/step	-	loss:	3.5393e-04	-	mae:
0.0339581/660	0s	9ms/step	-	loss:	3.5380e-04	-	mae:
0.0339586/660	0s	9ms/step	-	loss:	3.5368e-04	-	mae:
0.0339591/660	0s	9ms/step	-	loss:	3.5355e-04	-	mae:
0.0339596/660	0s	9ms/step	-	loss:	3.5343e-04	-	mae:
0.0338601/660	0s	9ms/step	-	loss:	3.5331e-04	-	mae:
0.0338606/660	0s	9ms/step	-	loss:	3.5320e-04	-	mae:
0.0338611/660	0s	9ms/step	-	loss:	3.5309e-04	-	mae:
0.0338616/660	0s	9ms/step	-	loss:	3.5298e-04	-	mae:
0.0338621/660	0s	9ms/step	-	loss:	3.5287e-04	-	mae:
0.0338626/660	0s	9ms/step	-	loss:	3.5276e-04	-	mae:
0.0338630/660	0s	9ms/step	-	loss:	3.5268e-04	-	mae:
0.0338634/660	0s	9ms/step	-	loss:	3.5259e-04	-	mae:
0.0338639/660	0s	9ms/step	-	loss:	3.5250e-04	-	mae:
0.0338643/660	0s	9ms/step	-	loss:	3.5242e-04	-	mae:
0.0337647/660							

Battery SoC Estimation Project Report

0s 0.0337652/660	9ms/step	-	loss:	3.5234e-04	-	mae:
0s 0.0337656/660	9ms/step	-	loss:	3.5223e-04	-	mae:
0s 0.0337660/660	9ms/step	-	loss:	3.5215e-04	-	mae:
0s 0.0337660/660	9ms/step	-	loss:	3.5207e-04	-	mae:
0.0337660/660						
10s 10ms/step - loss: 3.5205e-04 - mae: 0.0337 - val_loss: 2.6580e-04 - val_mae: 0.0253						
Epoch 51/200						
1/660 0.0173	36:42	3s/step	-	loss:	1.8819e-04	-
6/660 8s	12ms/step	-	loss:	1.9378e-04	-	mae: 0.0180
10/660 8s	12ms/step	-	loss:	2.0576e-04	-	mae:
15/660 7s	12ms/step	-	loss:	2.2673e-04	-	mae:
20/660 7s	12ms/step	-	loss:	2.4392e-04	-	mae:
26/660 0.0231	11ms/step	-	loss:	2.6199e-04	-	mae:
32/660 0.0250	11ms/step	-	loss:	2.7370e-04	-	mae:
38/660 0.0262	10ms/step	-	loss:	2.8405e-04	-	mae:
45/660 0.0272	10ms/step	-	loss:	2.9582e-04	-	mae:
51/660 0.0284	10ms/step	-	loss:	3.0508e-04	-	mae:
58/660 0.0293	10ms/step	-	loss:	3.1522e-04	-	mae:
65/660 0.0303	9ms/step	-	loss:	3.2296e-04	-	mae: 0.0311
72/660 5s	9ms/step	-	loss:	3.2921e-04	-	mae:
79/660 5s	9ms/step	-	loss:	3.3401e-04	-	mae:
86/660 0.0321	9ms/step	-	loss:	3.3848e-04	-	mae:
93/660 5s	9ms/step	-	loss:	3.4190e-04	-	mae:
0.0329100/660 4s	9ms/step	-	loss:	3.4460e-04	-	mae:
0.0331107/660 4s	9ms/step	-	loss:	3.4684e-04	-	mae:
0.0333113/660 4s	9ms/step	-	loss:	3.4839e-04	-	mae:
0.0335118/660 4s	9ms/step	-	loss:	3.4982e-04	-	mae:
0.0336125/660 4s	9ms/step	-	loss:	3.5166e-04	-	mae:
0.0338132/660 4s	9ms/step	-	loss:	3.5300e-04	-	mae:
0.0339139/660 4s	9ms/step	-	loss:	3.5408e-04	-	mae:
0.0340146/660 4s	9ms/step	-	loss:	3.5500e-04	-	mae:
0.0341153/660 4s	9ms/step	-	loss:	3.5578e-04	-	mae:
0.0342160/660 4s	9ms/step	-	loss:	3.5635e-04	-	mae:
0.0342167/660 4s	9ms/step	-	loss:	3.5679e-04	-	mae:
0.0342174/660 4s	9ms/step	-	loss:	3.5737e-04	-	mae:
0.0343181/660						

Battery SoC Estimation Project Report						
0.0343187/660	4s	8ms/step	-	loss:	3.5777e-04	- mae:
	4s	9ms/step	-	loss:	3.5800e-04	- mae:
0.0343194/660	3s	8ms/step	-	loss:	3.5834e-04	- mae:
0.0344201/660	3s	8ms/step	-	loss:	3.5865e-04	- mae:
0.0344208/660	3s	8ms/step	-	loss:	3.5897e-04	- mae:
0.0344215/660	3s	8ms/step	-	loss:	3.5923e-04	- mae:
0.0345222/660	3s	8ms/step	-	loss:	3.5957e-04	- mae:
0.0345229/660	3s	8ms/step	-	loss:	3.5993e-04	- mae:
0.0345236/660	3s	8ms/step	-	loss:	3.6025e-04	- mae:
0.0345243/660	3s	8ms/step	-	loss:	3.6057e-04	- mae:
0.0346249/660	3s	8ms/step	-	loss:	3.6082e-04	- mae:
0.0346256/660	3s	8ms/step	-	loss:	3.6103e-04	- mae:
0.0346263/660	3s	8ms/step	-	loss:	3.6128e-04	- mae:
0.0346270/660	3s	8ms/step	-	loss:	3.6154e-04	- mae:
0.0347277/660	3s	8ms/step	-	loss:	3.6179e-04	- mae:
0.0347284/660	3s	8ms/step	-	loss:	3.6198e-04	- mae:
0.0347291/660	3s	8ms/step	-	loss:	3.6216e-04	- mae:
0.0347298/660	3s	8ms/step	-	loss:	3.6231e-04	- mae:
0.0347305/660	2s	8ms/step	-	loss:	3.6245e-04	- mae:
0.0347312/660	2s	8ms/step	-	loss:	3.6257e-04	- mae:
0.0347319/660	2s	8ms/step	-	loss:	3.6269e-04	- mae:
0.0348325/660	2s	8ms/step	-	loss:	3.6277e-04	- mae:
0.0348332/660	2s	8ms/step	-	loss:	3.6284e-04	- mae:
0.0348339/660	2s	8ms/step	-	loss:	3.6287e-04	- mae:
0.0348345/660	2s	8ms/step	-	loss:	3.6287e-04	- mae:
0.0348352/660	2s	8ms/step	-	loss:	3.6285e-04	- mae:
0.0348359/660	2s	8ms/step	-	loss:	3.6282e-04	- mae:
0.0348366/660	2s	8ms/step	-	loss:	3.6277e-04	- mae:
0.0348372/660	2s	8ms/step	-	loss:	3.6270e-04	- mae:
0.0348379/660	2s	8ms/step	-	loss:	3.6260e-04	- mae:
0.0347385/660	2s	8ms/step	-	loss:	3.6252e-04	- mae:
0.0347392/660	2s	8ms/step	-	loss:	3.6240e-04	- mae:
0.0347399/660	2s	8ms/step	-	loss:	3.6225e-04	- mae:
0.0347406/660						

Battery SoC Estimation Project Report

2s 0.0347413/660	8ms/step	-	loss:	3.6208e-04	-	mae:
2s 0.0347420/660	8ms/step	-	loss:	3.6189e-04	-	mae:
1s 0.0346427/660	8ms/step	-	loss:	3.6169e-04	-	mae:
1s 0.0346433/660	8ms/step	-	loss:	3.6152e-04	-	mae:
1s 0.0346440/660	8ms/step	-	loss:	3.6137e-04	-	mae:
1s 0.0346447/660	8ms/step	-	loss:	3.6121e-04	-	mae:
1s 0.0346454/660	8ms/step	-	loss:	3.6087e-04	-	mae:
1s 0.0346461/660	8ms/step	-	loss:	3.6071e-04	-	mae:
1s 0.0345468/660	8ms/step	-	loss:	3.6057e-04	-	mae:
1s 0.0345475/660	8ms/step	-	loss:	3.6042e-04	-	mae:
1s 0.0345482/660	8ms/step	-	loss:	3.6025e-04	-	mae:
1s 0.0345488/660	8ms/step	-	loss:	3.6009e-04	-	mae:
1s 0.0345494/660	8ms/step	-	loss:	3.5994e-04	-	mae:
1s 0.0345500/660	8ms/step	-	loss:	3.5981e-04	-	mae:
1s 0.0345507/660	8ms/step	-	loss:	3.5994e-04	-	mae:
1s 0.0345514/660	8ms/step	-	loss:	3.6045e-04	-	mae:
1s 0.0345520/660	8ms/step	-	loss:	3.6111e-04	-	mae:
1s 0.0346526/660	8ms/step	-	loss:	3.6197e-04	-	mae:
1s 0.0347532/660	8ms/step	-	loss:	3.6301e-04	-	mae:
0s 0.0348539/660	8ms/step	-	loss:	3.6441e-04	-	mae:
0s 0.0349546/660	8ms/step	-	loss:	3.6599e-04	-	mae:
0s 0.0350553/660	8ms/step	-	loss:	3.6773e-04	-	mae:
0s 0.0352560/660	8ms/step	-	loss:	3.6952e-04	-	mae:
0s 0.0353567/660	8ms/step	-	loss:	3.7131e-04	-	mae:
0s 0.0355573/660	8ms/step	-	loss:	3.7286e-04	-	mae:
0s 0.0356580/660	8ms/step	-	loss:	3.7465e-04	-	mae:
0s 0.0358587/660	8ms/step	-	loss:	3.7641e-04	-	mae:
0s 0.0359593/660	8ms/step	-	loss:	3.7792e-04	-	mae:
0s 0.0361600/660	8ms/step	-	loss:	3.7967e-04	-	mae:
0s 0.0362607/660	8ms/step	-	loss:	3.8141e-04	-	mae:
0s 0.0364614/660	8ms/step	-	loss:	3.8311e-04	-	mae:
0s 0.0365621/660	8ms/step	-	loss:	3.8477e-04	-	mae:
0s 0.0367626/660	8ms/step	-	loss:	3.8477e-04	-	mae:

Battery SoC Estimation Project Report

0s 0.0368632/660	8ms/step	-	loss:	3.8594e-04	-	mae:
0s 0.0369639/660	8ms/step	-	loss:	3.8732e-04	-	mae:
0s 0.0370645/660	8ms/step	-	loss:	3.8891e-04	-	mae:
0s 0.0371651/660	8ms/step	-	loss:	3.9025e-04	-	mae:
0s 0.0372658/660	8ms/step	-	loss:	3.9156e-04	-	mae:
0s 0.0374660/660	8ms/step	-	loss:	3.9304e-04	-	mae:
9s 9ms/step - loss: 3.9367e-04 - mae: 0.0374 - val_loss: 4.8758e-04 - val_mae: 0.0410						
Epoch 52/200						
1/660 0.0337	47:53 5/660	4s/step	-	loss:	4.1867e-04	-
9s 8s 0.0400	14ms/step 14/660	-	loss:	4.4747e-04	-	mae: 0.0369
8s 0.0414	13ms/step 19/660	-	loss:	4.7740e-04	-	mae:
7s 0.0417	12ms/step 25/660	-	loss:	4.9475e-04	-	mae:
7s 0.0423	11ms/step 31/660	-	loss:	5.0057e-04	-	mae:
6s 0.0425	11ms/step 37/660	-	loss:	5.0174e-04	-	mae:
6s 0.0428	11ms/step 43/660	-	loss:	5.0400e-04	-	mae:
6s 0.0433	10ms/step 49/660	-	loss:	5.0954e-04	-	mae:
6s 0.0438	10ms/step 56/660	-	loss:	5.1369e-04	-	mae:
5s 0.0443	10ms/step 63/660	-	loss:	5.1793e-04	-	mae:
5s 0.0446	10ms/step 70/660	-	loss:	5.2062e-04	-	mae:
5s 0.0447	10ms/step 77/660	-	loss:	5.2175e-04	-	mae:
5s 0.0449	9ms/step 84/660	-	loss:	5.2197e-04	-	mae: 0.0448
5s 0.0448	9ms/step 91/660	-	loss:	5.2206e-04	-	mae:
5s 0.0448105/660	9ms/step 98/660	-	loss:	5.2144e-04	-	mae:
5s 0.0448112/660	9ms/step 4s	-	loss:	5.2096e-04	-	mae:
4s 0.0448119/660	9ms/step 9ms/step	-	loss:	5.2041e-04	-	mae:
4s 0.0448123/660	9ms/step 9ms/step	-	loss:	5.1957e-04	-	mae:
4s 0.0448130/660	9ms/step 9ms/step	-	loss:	5.1893e-04	-	mae:
4s 0.0447137/660	9ms/step 9ms/step	-	loss:	5.1826e-04	-	mae:
4s 0.0447144/660	9ms/step 9ms/step	-	loss:	5.1753e-04	-	mae:
4s 0.0446151/660	9ms/step 9ms/step	-	loss:	5.1664e-04	-	mae:
4s 0.0446157/660	9ms/step 9ms/step	-	loss:	5.1566e-04	-	mae:
4s 0.0445164/660	9ms/step 9ms/step	-	loss:	5.1473e-04	-	mae:

Battery SoC Estimation Project Report

4s 0.0444171/660	9ms/step	-	loss:	5.1347e-04	-	mae:
4s 0.0443178/660	9ms/step	-	loss:	5.1228e-04	-	mae:
4s 0.0442184/660	9ms/step	-	loss:	5.1103e-04	-	mae:
4s 0.0441190/660	9ms/step	-	loss:	5.0989e-04	-	mae:
4s 0.0441197/660	9ms/step	-	loss:	5.0884e-04	-	mae:
4s 0.0440204/660	9ms/step	-	loss:	5.0770e-04	-	mae:
3s 0.0439209/660	9ms/step	-	loss:	5.0658e-04	-	mae:
3s 0.0438216/660	9ms/step	-	loss:	5.0583e-04	-	mae:
3s 0.0438223/660	9ms/step	-	loss:	5.0484e-04	-	mae:
3s 0.0437230/660	9ms/step	-	loss:	5.0402e-04	-	mae:
3s 0.0437237/660	9ms/step	-	loss:	5.0329e-04	-	mae:
3s 0.0436243/660	9ms/step	-	loss:	5.0255e-04	-	mae:
3s 0.0436248/660	9ms/step	-	loss:	5.0196e-04	-	mae:
3s 0.0435254/660	9ms/step	-	loss:	5.0147e-04	-	mae:
3s 0.0435261/660	9ms/step	-	loss:	5.0084e-04	-	mae:
3s 0.0434268/660	9ms/step	-	loss:	5.0013e-04	-	mae:
3s 0.0434275/660	9ms/step	-	loss:	4.9948e-04	-	mae:
3s 0.0434281/660	9ms/step	-	loss:	4.9885e-04	-	mae:
3s 0.0433287/660	9ms/step	-	loss:	4.9830e-04	-	mae:
3s 0.0433294/660	9ms/step	-	loss:	4.9770e-04	-	mae:
3s 0.0432301/660	9ms/step	-	loss:	4.9702e-04	-	mae:
3s 0.0432308/660	9ms/step	-	loss:	4.9632e-04	-	mae:
3s 0.0431315/660	9ms/step	-	loss:	4.9566e-04	-	mae:
2s 0.0431322/660	9ms/step	-	loss:	4.9502e-04	-	mae:
2s 0.0431329/660	9ms/step	-	loss:	4.9438e-04	-	mae:
2s 0.0430336/660	9ms/step	-	loss:	4.9375e-04	-	mae:
2s 0.0430343/660	9ms/step	-	loss:	4.9309e-04	-	mae:
2s 0.0429350/660	9ms/step	-	loss:	4.9245e-04	-	mae:
2s 0.0429357/660	9ms/step	-	loss:	4.9181e-04	-	mae:
2s 0.0428363/660	8ms/step	-	loss:	4.9115e-04	-	mae:
2s 0.0428370/660	8ms/step	-	loss:	4.9058e-04	-	mae:
2s 0.0427375/660	8ms/step	-	loss:	4.8991e-04	-	mae:
2s 0.0427382/660	9ms/step	-	loss:	4.8943e-04	-	mae:

Battery SoC Estimation Project Report						
2s	8ms/step	-	loss:	4.8876e-04	-	mae:
0.0427389/660						
2s	8ms/step	-	loss:	4.8812e-04	-	mae:
0.0426396/660						
2s	8ms/step	-	loss:	4.8746e-04	-	mae:
0.0426402/660						
2s	8ms/step	-	loss:	4.8688e-04	-	mae:
0.0425409/660						
2s	8ms/step	-	loss:	4.8620e-04	-	mae:
0.0425416/660						
2s	8ms/step	-	loss:	4.8550e-04	-	mae:
0.0424423/660						
2s	8ms/step	-	loss:	4.8481e-04	-	mae:
0.0424430/660						
1s	8ms/step	-	loss:	4.8413e-04	-	mae:
0.0423437/660						
1s	8ms/step	-	loss:	4.8345e-04	-	mae:
0.0423444/660						
1s	8ms/step	-	loss:	4.8279e-04	-	mae:
0.0422450/660						
1s	8ms/step	-	loss:	4.8223e-04	-	mae:
0.0422456/660						
1s	8ms/step	-	loss:	4.8168e-04	-	mae:
0.0421463/660						
1s	8ms/step	-	loss:	4.8106e-04	-	mae:
0.0421469/660						
1s	8ms/step	-	loss:	4.8053e-04	-	mae:
0.0420475/660						
1s	8ms/step	-	loss:	4.8000e-04	-	mae:
0.0420481/660						
1s	8ms/step	-	loss:	4.7947e-04	-	mae:
0.0420488/660						
1s	8ms/step	-	loss:	4.7884e-04	-	mae:
0.0419495/660						
1s	8ms/step	-	loss:	4.7821e-04	-	mae:
0.0419500/660						
1s	8ms/step	-	loss:	4.7776e-04	-	mae:
0.0418507/660						
1s	8ms/step	-	loss:	4.7717e-04	-	mae:
0.0418514/660						
1s	8ms/step	-	loss:	4.7657e-04	-	mae:
0.0417520/660						
1s	8ms/step	-	loss:	4.7605e-04	-	mae:
0.0417527/660						
1s	8ms/step	-	loss:	4.7544e-04	-	mae:
0.0417533/660						
1s	8ms/step	-	loss:	4.7491e-04	-	mae:
0.0416540/660						
1s	8ms/step	-	loss:	4.7430e-04	-	mae:
0.0416547/660						
0s	8ms/step	-	loss:	4.7369e-04	-	mae:
0.0415554/660						
0s	8ms/step	-	loss:	4.7310e-04	-	mae:
0.0415561/660						
0s	8ms/step	-	loss:	4.7251e-04	-	mae:
0.0414568/660						
0s	8ms/step	-	loss:	4.7193e-04	-	mae:
0.0414574/660						
0s	8ms/step	-	loss:	4.7143e-04	-	mae:
0.0414581/660						
0s	8ms/step	-	loss:	4.7084e-04	-	mae:
0.0413588/660						
0s	8ms/step	-	loss:	4.7026e-04	-	mae:
0.0413594/660						
0s	8ms/step	-	loss:	4.6976e-04	-	mae:
0.0412600/660						

Battery SoC Estimation Project Report

0s 0.0412607/660	8ms/step	-	loss:	4.6928e-04	-	mae:
0s 0.0412613/660	8ms/step	-	loss:	4.6873e-04	-	mae:
0s 0.0411619/660	8ms/step	-	loss:	4.6826e-04	-	mae:
0s 0.0411624/660	8ms/step	-	loss:	4.6780e-04	-	mae:
0s 0.0411630/660	8ms/step	-	loss:	4.6742e-04	-	mae:
0s 0.0410636/660	8ms/step	-	loss:	4.6697e-04	-	mae:
0s 0.0410643/660	8ms/step	-	loss:	4.6654e-04	-	mae:
0s 0.0409650/660	8ms/step	-	loss:	4.6604e-04	-	mae:
0s 0.0409657/660	8ms/step	-	loss:	4.6552e-04	-	mae:
0s 0.0409660/660	8ms/step	-	loss:	4.6501e-04	-	mae:

10s 9ms/step - loss: 4.6473e-04 - mae: 0.0408 - val_loss: 3.3308e-04 - val_mae: 0.0304

Epoch 53/200

	1/660	46:24	4s/step	-	loss:	3.6308e-04	-	mae:
0.0337	5/660							
8s	13ms/step	-	loss:	3.0367e-04	-	mae:	0.0276	
	9/660							
8s	13ms/step	-	loss:	2.9230e-04	-	mae:		
0.0264	13/660							
8s	13ms/step	-	loss:	3.0186e-04	-	mae:		
0.0273	17/660							
8s	13ms/step	-	loss:	3.1150e-04	-	mae:		
0.0282	23/660							
7s	12ms/step	-	loss:	3.2495e-04	-	mae:		
0.0295	29/660							
7s	12ms/step	-	loss:	3.3292e-04	-	mae:		
0.0303	35/660							
6s	11ms/step	-	loss:	3.4026e-04	-	mae:		
0.0310	41/660							
6s	11ms/step	-	loss:	3.4920e-04	-	mae:		
0.0319	48/660							
6s	10ms/step	-	loss:	3.5752e-04	-	mae:		
0.0327	55/660							
6s	10ms/step	-	loss:	3.6476e-04	-	mae:		
0.0334	62/660							
5s	10ms/step	-	loss:	3.7047e-04	-	mae:		
0.0339	68/660							
5s	10ms/step	-	loss:	3.7329e-04	-	mae:		
0.0342	75/660							
5s	10ms/step	-	loss:	3.7586e-04	-	mae:		
0.0345	82/660							
5s	9ms/step	-	loss:	3.7798e-04	-	mae:	0.0347	
	88/660							
5s	9ms/step	-	loss:	3.7929e-04	-	mae:		
0.0348	95/660							
5s	9ms/step	-	loss:	3.8031e-04	-	mae:		
0.0349102/660								
5s	9ms/step	-	loss:	3.8091e-04	-	mae:		
0.0349109/660								
5s	9ms/step	-	loss:	3.8137e-04	-	mae:		
0.0350116/660								
4s	9ms/step	-	loss:	3.8194e-04	-	mae:		
0.0350123/660								
4s	9ms/step	-	loss:	3.8275e-04	-	mae:		
0.0351129/660								
4s	9ms/step	-	loss:	3.8325e-04	-	mae:		
0.0352134/660								

Battery SoC Estimation Project Report

4s 0.0352141/660	9ms/step	-	loss:	3.8359e-04	-	mae:
4s 0.0353147/660	9ms/step	-	loss:	3.8394e-04	-	mae:
4s 0.0353154/660	9ms/step	-	loss:	3.8421e-04	-	mae:
4s 0.0353161/660	9ms/step	-	loss:	3.8444e-04	-	mae:
4s 0.0353168/660	9ms/step	-	loss:	3.8449e-04	-	mae:
4s 0.0353175/660	9ms/step	-	loss:	3.8459e-04	-	mae:
4s 0.0353182/660	9ms/step	-	loss:	3.8449e-04	-	mae:
4s 0.0353189/660	9ms/step	-	loss:	3.8432e-04	-	mae:
4s 0.0353196/660	9ms/step	-	loss:	3.8420e-04	-	mae:
4s 0.0353203/660	9ms/step	-	loss:	3.8403e-04	-	mae:
3s 0.0353209/660	9ms/step	-	loss:	3.8391e-04	-	mae:
3s 0.0353216/660	9ms/step	-	loss:	3.8379e-04	-	mae:
3s 0.0353223/660	9ms/step	-	loss:	3.8381e-04	-	mae:
3s 0.0353230/660	9ms/step	-	loss:	3.8388e-04	-	mae:
3s 0.0353236/660	9ms/step	-	loss:	3.8392e-04	-	mae:
3s 0.0353243/660	9ms/step	-	loss:	3.8399e-04	-	mae:
3s 0.0353249/660	9ms/step	-	loss:	3.8403e-04	-	mae:
3s 0.0353255/660	9ms/step	-	loss:	3.8403e-04	-	mae:
3s 0.0353261/660	9ms/step	-	loss:	3.8406e-04	-	mae:
3s 0.0353267/660	9ms/step	-	loss:	3.8412e-04	-	mae:
3s 0.0353274/660	9ms/step	-	loss:	3.8420e-04	-	mae:
3s 0.0353281/660	9ms/step	-	loss:	3.8426e-04	-	mae:
3s 0.0353288/660	9ms/step	-	loss:	3.8427e-04	-	mae:
3s 0.0353295/660	9ms/step	-	loss:	3.8427e-04	-	mae:
3s 0.0353302/660	9ms/step	-	loss:	3.8424e-04	-	mae:
3s 0.0353308/660	9ms/step	-	loss:	3.8423e-04	-	mae:
2s 0.0353315/660	9ms/step	-	loss:	3.8422e-04	-	mae:
2s 0.0353322/660	9ms/step	-	loss:	3.8420e-04	-	mae:
2s 0.0353329/660	9ms/step	-	loss:	3.8417e-04	-	mae:
2s 0.0353336/660	9ms/step	-	loss:	3.8411e-04	-	mae:
2s 0.0353342/660	9ms/step	-	loss:	3.8405e-04	-	mae:
2s 0.0353349/660	9ms/step	-	loss:	3.8398e-04	-	mae:
2s 0.0353356/660	8ms/step	-	loss:	3.8398e-04	-	mae:

Battery SoC Estimation Project Report

2s 0.0353363/660	8ms/step	-	loss:	3.8389e-04	-	mae:
2s 0.0353369/660	8ms/step	-	loss:	3.8380e-04	-	mae:
2s 0.0353376/660	8ms/step	-	loss:	3.8370e-04	-	mae:
2s 0.0353381/660	8ms/step	-	loss:	3.8358e-04	-	mae:
2s 0.0353387/660	9ms/step	-	loss:	3.8348e-04	-	mae:
2s 0.0353394/660	9ms/step	-	loss:	3.8338e-04	-	mae:
2s 0.0352401/660	9ms/step	-	loss:	3.8324e-04	-	mae:
2s 0.0352408/660	9ms/step	-	loss:	3.8284e-04	-	mae:
2s 0.0352414/660	9ms/step	-	loss:	3.8265e-04	-	mae:
2s 0.0352421/660	9ms/step	-	loss:	3.8242e-04	-	mae:
1s 0.0352433/660	9ms/step	-	loss:	3.8224e-04	-	mae:
1s 0.0351438/660	9ms/step	-	loss:	3.8206e-04	-	mae:
1s 0.0351443/660	9ms/step	-	loss:	3.8191e-04	-	mae:
1s 0.0351450/660	9ms/step	-	loss:	3.8176e-04	-	mae:
1s 0.0351456/660	9ms/step	-	loss:	3.8155e-04	-	mae:
1s 0.0351463/660	9ms/step	-	loss:	3.8137e-04	-	mae:
1s 0.0351470/660	9ms/step	-	loss:	3.8117e-04	-	mae:
1s 0.0350477/660	9ms/step	-	loss:	3.8096e-04	-	mae:
1s 0.0350483/660	9ms/step	-	loss:	3.8075e-04	-	mae:
1s 0.0350490/660	9ms/step	-	loss:	3.8056e-04	-	mae:
1s 0.0350496/660	9ms/step	-	loss:	3.8032e-04	-	mae:
1s 0.0350502/660	9ms/step	-	loss:	3.8012e-04	-	mae:
1s 0.0350508/660	9ms/step	-	loss:	3.7993e-04	-	mae:
1s 0.0349515/660	9ms/step	-	loss:	3.7953e-04	-	mae:
1s 0.0349521/660	9ms/step	-	loss:	3.7933e-04	-	mae:
1s 0.0349528/660	9ms/step	-	loss:	3.7909e-04	-	mae:
1s 0.0349535/660	9ms/step	-	loss:	3.7883e-04	-	mae:
1s 0.0349542/660	8ms/step	-	loss:	3.7857e-04	-	mae:
0s 0.0348555/660	9ms/step	-	loss:	3.7836e-04	-	mae:
0s 0.0348562/660	8ms/step	-	loss:	3.7813e-04	-	mae:
0s 0.0348569/660	8ms/step	-	loss:	3.7788e-04	-	mae:

Battery SoC Estimation Project Report

0s 0.0348576/660	8ms/step	-	loss:	3.7765e-04	-	mae:
0s 0.0347583/660	8ms/step	-	loss:	3.7742e-04	-	mae:
0s 0.0347590/660	8ms/step	-	loss:	3.7720e-04	-	mae:
0s 0.0347597/660	8ms/step	-	loss:	3.7699e-04	-	mae:
0s 0.0347603/660	8ms/step	-	loss:	3.7680e-04	-	mae:
0s 0.0347610/660	8ms/step	-	loss:	3.7666e-04	-	mae:
0s 0.0347616/660	8ms/step	-	loss:	3.7652e-04	-	mae:
0s 0.0346622/660	8ms/step	-	loss:	3.7640e-04	-	mae:
0s 0.0346627/660	8ms/step	-	loss:	3.7629e-04	-	mae:
0s 0.0346634/660	8ms/step	-	loss:	3.7621e-04	-	mae:
0s 0.0346640/660	8ms/step	-	loss:	3.7612e-04	-	mae:
0s 0.0346647/660	8ms/step	-	loss:	3.7605e-04	-	mae:
0s 0.0346654/660	8ms/step	-	loss:	3.7597e-04	-	mae:
0s 0.0346660/660	8ms/step	-	loss:	3.7588e-04	-	mae:

10s 9ms/step - loss: 3.7582e-04 - mae: 0.0346 - val_loss: 3.3919e-04 - val_mae: 0.0301

Epoch 54/200

1/660 0.0306	5/660 8s	43:37 13ms/step	4s/step	-	loss:	3.4040e-04	-	mae:
10/660 8s	10/660 8s	12ms/step	-	loss:	3.5273e-04	-	mae:	0.0319
15/660 8s	15/660 8s	12ms/step	-	loss:	3.8176e-04	-	mae:	
19/660 8s	19/660 8s	13ms/step	-	loss:	3.9703e-04	-	mae:	
25/660 7s	25/660 7s	12ms/step	-	loss:	4.0586e-04	-	mae:	
31/660 6s	31/660 6s	11ms/step	-	loss:	4.1640e-04	-	mae:	
37/660 6s	37/660 6s	11ms/step	-	loss:	4.2237e-04	-	mae:	
43/660 6s	43/660 6s	10ms/step	-	loss:	4.2931e-04	-	mae:	
50/660 6s	50/660 6s	10ms/step	-	loss:	4.3813e-04	-	mae:	
57/660 5s	57/660 5s	10ms/step	-	loss:	4.4597e-04	-	mae:	
63/660 5s	63/660 5s	10ms/step	-	loss:	4.5242e-04	-	mae:	
69/660 5s	69/660 5s	10ms/step	-	loss:	4.5644e-04	-	mae:	
76/660 5s	76/660 5s	9ms/step	-	loss:	4.5890e-04	-	mae:	
82/660 5s	82/660 5s	9ms/step	-	loss:	4.6068e-04	-	mae:	0.0430
88/660 5s	88/660 5s	9ms/step	-	loss:	4.6162e-04	-	mae:	
95/660 5s	95/660 5s	9ms/step	-	loss:	4.6191e-04	-	mae:	
0.0432101/660 5s	0.0432101/660 5s	9ms/step	-	loss:	4.6183e-04	-	mae:	
0.0432108/660 5s	0.0432108/660 5s	9ms/step	-	loss:	4.6152e-04	-	mae:	

Battery SoC Estimation Project Report

5s 0.043115/660	9ms/step	-	loss:	4.6098e-04	-	mae:
4s 0.043122/660	9ms/step	-	loss:	4.6038e-04	-	mae:
4s 0.0430129/660	9ms/step	-	loss:	4.5998e-04	-	mae:
4s 0.0430136/660	9ms/step	-	loss:	4.5942e-04	-	mae:
4s 0.0429141/660	9ms/step	-	loss:	4.5863e-04	-	mae:
4s 0.0428147/660	9ms/step	-	loss:	4.5795e-04	-	mae:
4s 0.0428154/660	9ms/step	-	loss:	4.5709e-04	-	mae:
4s 0.0427161/660	9ms/step	-	loss:	4.5598e-04	-	mae:
4s 0.0425168/660	9ms/step	-	loss:	4.5471e-04	-	mae:
4s 0.0424175/660	9ms/step	-	loss:	4.5336e-04	-	mae:
4s 0.0423182/660	9ms/step	-	loss:	4.5210e-04	-	mae:
4s 0.0422189/660	9ms/step	-	loss:	4.5066e-04	-	mae:
4s 0.0420196/660	9ms/step	-	loss:	4.4920e-04	-	mae:
4s 0.0419203/660	9ms/step	-	loss:	4.4782e-04	-	mae:
3s 0.0417210/660	9ms/step	-	loss:	4.4643e-04	-	mae:
3s 0.0416217/660	9ms/step	-	loss:	4.4513e-04	-	mae:
3s 0.0415224/660	9ms/step	-	loss:	4.4390e-04	-	mae:
3s 0.0414231/660	9ms/step	-	loss:	4.4286e-04	-	mae:
3s 0.0413238/660	9ms/step	-	loss:	4.4188e-04	-	mae:
3s 0.0412245/660	9ms/step	-	loss:	4.4093e-04	-	mae:
3s 0.0411251/660	9ms/step	-	loss:	4.4004e-04	-	mae:
3s 0.0411258/660	9ms/step	-	loss:	4.3928e-04	-	mae:
3s 0.0410265/660	9ms/step	-	loss:	4.3838e-04	-	mae:
3s 0.0409271/660	9ms/step	-	loss:	4.3757e-04	-	mae:
3s 0.0409278/660	9ms/step	-	loss:	4.3691e-04	-	mae:
3s 0.0408285/660	9ms/step	-	loss:	4.3617e-04	-	mae:
3s 0.0407292/660	9ms/step	-	loss:	4.3540e-04	-	mae:
3s 0.0406299/660	9ms/step	-	loss:	4.3466e-04	-	mae:
3s 0.0406306/660	9ms/step	-	loss:	4.3392e-04	-	mae:
3s 0.0405313/660	9ms/step	-	loss:	4.3321e-04	-	mae:
2s 0.0404320/660	9ms/step	-	loss:	4.3253e-04	-	mae:
2s 0.0404327/660	9ms/step	-	loss:	4.3185e-04	-	mae:
2s 0.0403333/660	8ms/step	-	loss:	4.3120e-04	-	mae:

Battery SoC Estimation Project Report						
2s	8ms/step	-	loss:	4.3064e-04	-	mae:
0.0403339/660						
2s	8ms/step	-	loss:	4.3007e-04	-	mae:
0.0402346/660						
2s	8ms/step	-	loss:	4.2939e-04	-	mae:
0.0402353/660						
2s	8ms/step	-	loss:	4.2871e-04	-	mae:
0.0401359/660						
2s	8ms/step	-	loss:	4.2812e-04	-	mae:
0.0400366/660						
2s	8ms/step	-	loss:	4.2744e-04	-	mae:
0.0400373/660						
2s	8ms/step	-	loss:	4.2678e-04	-	mae:
0.0399380/660						
2s	8ms/step	-	loss:	4.2612e-04	-	mae:
0.0398387/660						
2s	8ms/step	-	loss:	4.2549e-04	-	mae:
0.0398392/660						
2s	8ms/step	-	loss:	4.2504e-04	-	mae:
0.0397398/660						
2s	8ms/step	-	loss:	4.2450e-04	-	mae:
0.0397405/660						
2s	8ms/step	-	loss:	4.2386e-04	-	mae:
0.0396412/660						
2s	8ms/step	-	loss:	4.2323e-04	-	mae:
0.0396419/660						
2s	8ms/step	-	loss:	4.2259e-04	-	mae:
0.0395426/660						
1s	8ms/step	-	loss:	4.2199e-04	-	mae:
0.0395432/660						
1s	8ms/step	-	loss:	4.2148e-04	-	mae:
0.0394439/660						
1s	8ms/step	-	loss:	4.2091e-04	-	mae:
0.0394446/660						
1s	8ms/step	-	loss:	4.2035e-04	-	mae:
0.0393453/660						
1s	8ms/step	-	loss:	4.1981e-04	-	mae:
0.0393460/660						
1s	8ms/step	-	loss:	4.1929e-04	-	mae:
0.0392467/660						
1s	8ms/step	-	loss:	4.1880e-04	-	mae:
0.0392474/660						
1s	8ms/step	-	loss:	4.1830e-04	-	mae:
0.0391481/660						
1s	8ms/step	-	loss:	4.1779e-04	-	mae:
0.0391488/660						
1s	8ms/step	-	loss:	4.1726e-04	-	mae:
0.0390495/660						
1s	8ms/step	-	loss:	4.1674e-04	-	mae:
0.0390502/660						
1s	8ms/step	-	loss:	4.1623e-04	-	mae:
0.0389509/660						
1s	8ms/step	-	loss:	4.1574e-04	-	mae:
0.0389516/660						
1s	8ms/step	-	loss:	4.1524e-04	-	mae:
0.0388521/660						
1s	8ms/step	-	loss:	4.1488e-04	-	mae:
0.0388528/660						
1s	8ms/step	-	loss:	4.1437e-04	-	mae:
0.0388535/660						
1s	8ms/step	-	loss:	4.1385e-04	-	mae:
0.0387542/660						
0s	8ms/step	-	loss:	4.1334e-04	-	mae:
0.0387549/660						
0s	8ms/step	-	loss:	4.1283e-04	-	mae:
0.0386556/660						

Battery SoC Estimation Project Report

0s 0.0386563/660	8ms/step	-	loss:	4.1234e-04	-	mae:
0s 0.0385570/660	8ms/step	-	loss:	4.1185e-04	-	mae:
0s 0.0385576/660	8ms/step	-	loss:	4.1137e-04	-	mae:
0s 0.0384582/660	8ms/step	-	loss:	4.1096e-04	-	mae:
0s 0.0384589/660	8ms/step	-	loss:	4.1055e-04	-	mae:
0s 0.0384595/660	8ms/step	-	loss:	4.1008e-04	-	mae:
0s 0.0383602/660	8ms/step	-	loss:	4.0968e-04	-	mae:
0s 0.0383609/660	8ms/step	-	loss:	4.0923e-04	-	mae:
0s 0.0382616/660	8ms/step	-	loss:	4.0880e-04	-	mae:
0s 0.0382623/660	8ms/step	-	loss:	4.0837e-04	-	mae:
0s 0.0382630/660	8ms/step	-	loss:	4.0795e-04	-	mae:
0s 0.0381637/660	8ms/step	-	loss:	4.0754e-04	-	mae:
0s 0.0381642/660	8ms/step	-	loss:	4.0714e-04	-	mae:
0s 0.0381648/660	8ms/step	-	loss:	4.0686e-04	-	mae:
0s 0.0380654/660	8ms/step	-	loss:	4.0652e-04	-	mae:
0s 0.0380660/660	8ms/step	-	loss:	4.0618e-04	-	mae:
0s 0.0380660/660	8ms/step	-	loss:	4.0584e-04	-	mae:

10s 9ms/step - loss: 4.0579e-04 - mae: 0.0380 - val_loss: 2.5621e-04 - val_mae: 0.0239

Epoch 55/200

1/660 0.0226	46:49 5/660	4s/step	-	loss:	2.4028e-04	-	mae:
9s 9/660	14ms/step	-	loss:	2.1970e-04	-	mae:	0.0203
8s 13/660	14ms/step	-	loss:	2.2679e-04	-	mae:	
8s 17/660	14ms/step	-	loss:	2.4139e-04	-	mae:	
9s 21/660	14ms/step	-	loss:	2.5180e-04	-	mae:	
9s 25/660	14ms/step	-	loss:	2.6221e-04	-	mae:	
8s 29/660	14ms/step	-	loss:	2.7182e-04	-	mae:	
8s 33/660	14ms/step	-	loss:	2.7833e-04	-	mae:	
8s 38/660	14ms/step	-	loss:	2.8416e-04	-	mae:	
8s 43/660	13ms/step	-	loss:	2.9142e-04	-	mae:	
8s 48/660	13ms/step	-	loss:	2.9957e-04	-	mae:	
7s 53/660	13ms/step	-	loss:	3.0655e-04	-	mae:	
7s 57/660	13ms/step	-	loss:	3.1355e-04	-	mae:	
7s 62/660	13ms/step	-	loss:	3.1842e-04	-	mae:	
7s 67/660	13ms/step	-	loss:	3.2362e-04	-	mae:	

Battery SoC Estimation Project Report

0.0310	7s	13ms/step	-	loss:	3.2749e-04	- mae:
		72/660				
0.0313	7s	12ms/step	-	loss:	3.3096e-04	- mae:
		77/660				
0.0316	7s	12ms/step	-	loss:	3.3373e-04	- mae:
		81/660				
0.0318	7s	12ms/step	-	loss:	3.3583e-04	- mae:
		86/660				
0.0321	7s	12ms/step	-	loss:	3.3825e-04	- mae:
		91/660				
0.0322	7s	12ms/step	-	loss:	3.4007e-04	- mae:
		95/660				
0.0324100/660	7s	12ms/step	-	loss:	3.4141e-04	- mae:
		6s				
0.0325105/660	6s	12ms/step	-	loss:	3.4275e-04	- mae:
		6s				
0.0326109/660	6s	12ms/step	-	loss:	3.4400e-04	- mae:
		6s				
0.0327113/660	6s	12ms/step	-	loss:	3.4484e-04	- mae:
		6s				
0.0328117/660	6s	12ms/step	-	loss:	3.4566e-04	- mae:
		6s				
0.0329122/660	6s	12ms/step	-	loss:	3.4665e-04	- mae:
		6s				
0.0330127/660	6s	12ms/step	-	loss:	3.4780e-04	- mae:
		6s				
0.0331131/660	6s	12ms/step	-	loss:	3.4881e-04	- mae:
		6s				
0.0332135/660	6s	12ms/step	-	loss:	3.4947e-04	- mae:
		6s				
0.0332139/660	6s	12ms/step	-	loss:	3.5009e-04	- mae:
		6s				
0.0333143/660	6s	12ms/step	-	loss:	3.5062e-04	- mae:
		6s				
0.0333149/660	6s	13ms/step	-	loss:	3.5113e-04	- mae:
		6s				
0.0334156/660	6s	12ms/step	-	loss:	3.5189e-04	- mae:
		6s				
0.0335163/660	5s	12ms/step	-	loss:	3.5282e-04	- mae:
		5s				
0.0336170/660	5s	12ms/step	-	loss:	3.5363e-04	- mae:
		5s				
0.0337177/660	5s	12ms/step	-	loss:	3.5444e-04	- mae:
		5s				
0.0338184/660	5s	12ms/step	-	loss:	3.5526e-04	- mae:
		5s				
0.0338190/660	5s	12ms/step	-	loss:	3.5593e-04	- mae:
		5s				
0.0339197/660	5s	11ms/step	-	loss:	3.5662e-04	- mae:
		5s				
0.0340204/660	5s	11ms/step	-	loss:	3.5741e-04	- mae:
		5s				
0.0340211/660	4s	11ms/step	-	loss:	3.5810e-04	- mae:
		4s				
0.0341218/660	4s	11ms/step	-	loss:	3.5870e-04	- mae:
		4s				
0.0342223/660	4s	11ms/step	-	loss:	3.5930e-04	- mae:
		4s				
0.0342229/660	4s	11ms/step	-	loss:	3.5975e-04	- mae:
		4s				
0.0342236/660	4s	11ms/step	-	loss:	3.6027e-04	- mae:
		4s				
0.0343243/660	4s	11ms/step	-	loss:	3.6080e-04	- mae:
		4s				
0.0343249/660	4s	11ms/step	-	loss:	3.6130e-04	- mae:

Battery SoC Estimation Project Report						
4s	11ms/step	-	loss:	3.6169e-04	-	mae:
0.0344256/660						
4s	11ms/step	-	loss:	3.6205e-04	-	mae:
0.0344262/660						
4s	11ms/step	-	loss:	3.6238e-04	-	mae:
0.0344268/660						
4s	11ms/step	-	loss:	3.6271e-04	-	mae:
0.0345274/660						
4s	10ms/step	-	loss:	3.6304e-04	-	mae:
0.0345281/660						
3s	10ms/step	-	loss:	3.6339e-04	-	mae:
0.0345288/660						
3s	10ms/step	-	loss:	3.6366e-04	-	mae:
0.0346295/660						
3s	10ms/step	-	loss:	3.6390e-04	-	mae:
0.0346302/660						
3s	10ms/step	-	loss:	3.6412e-04	-	mae:
0.0346309/660						
3s	10ms/step	-	loss:	3.6433e-04	-	mae:
0.0346315/660						
3s	10ms/step	-	loss:	3.6451e-04	-	mae:
0.0346322/660						
3s	10ms/step	-	loss:	3.6471e-04	-	mae:
0.0347329/660						
3s	10ms/step	-	loss:	3.6490e-04	-	mae:
0.0347335/660						
3s	10ms/step	-	loss:	3.6503e-04	-	mae:
0.0347342/660						
3s	10ms/step	-	loss:	3.6514e-04	-	mae:
0.0347347/660						
3s	10ms/step	-	loss:	3.6520e-04	-	mae:
0.0347353/660						
3s	10ms/step	-	loss:	3.6525e-04	-	mae:
0.0347360/660						
2s	10ms/step	-	loss:	3.6528e-04	-	mae:
0.0347367/660						
2s	10ms/step	-	loss:	3.6530e-04	-	mae:
0.0347374/660						
2s	10ms/step	-	loss:	3.6528e-04	-	mae:
0.0347381/660						
2s	10ms/step	-	loss:	3.6524e-04	-	mae:
0.0347387/660						
2s	10ms/step	-	loss:	3.6521e-04	-	mae:
0.0347394/660						
2s	10ms/step	-	loss:	3.6514e-04	-	mae:
0.0347401/660						
2s	10ms/step	-	loss:	3.6504e-04	-	mae:
0.0347408/660						
2s	10ms/step	-	loss:	3.6491e-04	-	mae:
0.0347415/660						
2s	10ms/step	-	loss:	3.6477e-04	-	mae:
0.0346422/660						
2s	10ms/step	-	loss:	3.6463e-04	-	mae:
0.0346429/660						
2s	10ms/step	-	loss:	3.6451e-04	-	mae:
0.0346435/660						
2s	10ms/step	-	loss:	3.6440e-04	-	mae:
0.0346442/660						
2s	10ms/step	-	loss:	3.6428e-04	-	mae:
0.0346448/660						
2s	10ms/step	-	loss:	3.6417e-04	-	mae:
0.0346455/660						
1s	10ms/step	-	loss:	3.6404e-04	-	mae:
0.0346462/660						
1s	10ms/step	-	loss:	3.6391e-04	-	mae:
0.0346469/660						

Battery SoC Estimation Project Report							
474/660	1s	9ms/step	-	loss:	3.6379e-04	-	mae: 0.0345
0.0345481/660	1s	10ms/step	-	loss:	3.6369e-04	-	mae:
0.0345487/660	1s	10ms/step	-	loss:	3.6355e-04	-	mae:
493/660	1s	9ms/step	-	loss:	3.6341e-04	-	mae: 0.0345
0.0345499/660	1s	9ms/step	-	loss:	3.6327e-04	-	mae:
0.0345505/660	1s	9ms/step	-	loss:	3.6313e-04	-	mae:
0.0345511/660	1s	9ms/step	-	loss:	3.6301e-04	-	mae:
0.0345518/660	1s	9ms/step	-	loss:	3.6290e-04	-	mae:
0.0344525/660	1s	9ms/step	-	loss:	3.6274e-04	-	mae:
0.0344532/660	1s	9ms/step	-	loss:	3.6257e-04	-	mae:
0.0344539/660	1s	9ms/step	-	loss:	3.6238e-04	-	mae:
0.0344546/660	1s	9ms/step	-	loss:	3.6219e-04	-	mae:
0.0344553/660	1s	9ms/step	-	loss:	3.6200e-04	-	mae:
0.0344560/660	1s	9ms/step	-	loss:	3.6182e-04	-	mae:
0.0343567/660	0s	9ms/step	-	loss:	3.6164e-04	-	mae:
0.0343574/660	0s	9ms/step	-	loss:	3.6146e-04	-	mae:
0.0343581/660	0s	9ms/step	-	loss:	3.6128e-04	-	mae:
0.0343588/660	0s	9ms/step	-	loss:	3.6110e-04	-	mae:
0.0343594/660	0s	9ms/step	-	loss:	3.6091e-04	-	mae:
0.0343599/660	0s	9ms/step	-	loss:	3.6075e-04	-	mae:
0.0342605/660	0s	9ms/step	-	loss:	3.6062e-04	-	mae:
0.0342612/660	0s	9ms/step	-	loss:	3.6047e-04	-	mae:
0.0342618/660	0s	9ms/step	-	loss:	3.6030e-04	-	mae:
0.0342625/660	0s	9ms/step	-	loss:	3.6016e-04	-	mae:
0.0342632/660	0s	9ms/step	-	loss:	3.5999e-04	-	mae:
0.0342639/660	0s	9ms/step	-	loss:	3.5983e-04	-	mae:
0.0341646/660	0s	9ms/step	-	loss:	3.5968e-04	-	mae:
0.0341653/660	0s	9ms/step	-	loss:	3.5953e-04	-	mae:
0.0341660/660	0s	9ms/step	-	loss:	3.5937e-04	-	mae:
0.0341660/660	0s	9ms/step	-	loss:	3.5922e-04	-	mae:
11s 10ms/step - loss: 3.5920e-04 - mae: 0.0341 - val_loss: 2.5093e-04 - val_mae: 0.0231							
Epoch 56/200	1/660	38:39	4s/step	-	loss: 1.8387e-04	-	mae:
0.0167	6/660						
8s	12ms/step	-	loss:	1.8835e-04	-	mae: 0.0171	
	11/660						

Battery SoC Estimation Project Report

0.0192	7s	12ms/step	-	loss:	2.0962e-04	-	mae:
	7s	16/660					
0.0214	7s	12ms/step	-	loss:	2.3135e-04	-	mae:
	21/660						
0.0232	7s	12ms/step	-	loss:	2.4860e-04	-	mae:
	27/660						
0.0248	7s	11ms/step	-	loss:	2.6389e-04	-	mae:
	33/660						
0.0259	6s	11ms/step	-	loss:	2.7509e-04	-	mae:
	39/660						
0.0269	6s	11ms/step	-	loss:	2.8492e-04	-	mae:
	44/660						
0.0277	6s	11ms/step	-	loss:	2.9264e-04	-	mae:
	51/660						
0.0286	6s	10ms/step	-	loss:	3.0177e-04	-	mae:
	57/660						
0.0293	6s	10ms/step	-	loss:	3.0878e-04	-	mae:
	64/660						
0.0299	5s	10ms/step	-	loss:	3.1515e-04	-	mae:
	71/660						
0.0303	5s	10ms/step	-	loss:	3.1953e-04	-	mae:
	78/660						
0.0306	5s	10ms/step	-	loss:	3.2265e-04	-	mae:
	84/660						
0.0309	5s	10ms/step	-	loss:	3.2514e-04	-	mae:
	91/660						
	5s	9ms/step	-	loss:	3.2739e-04	-	mae:
	97/660						
0.0313103/660	5s	9ms/step	-	loss:	3.2909e-04	-	mae:
	5s	9ms/step	-	loss:	3.3048e-04	-	mae:
0.0314109/660	5s	9ms/step	-	loss:	3.3160e-04	-	mae:
0.0315115/660	5s	9ms/step	-	loss:	3.3277e-04	-	mae:
0.0316121/660	4s	9ms/step	-	loss:	3.3405e-04	-	mae:
0.0318128/660	4s	9ms/step	-	loss:	3.3533e-04	-	mae:
0.0319135/660	4s	9ms/step	-	loss:	3.3625e-04	-	mae:
0.0320141/660	4s	9ms/step	-	loss:	3.3685e-04	-	mae:
0.0320148/660	4s	9ms/step	-	loss:	3.3751e-04	-	mae:
0.0321155/660	4s	9ms/step	-	loss:	3.3805e-04	-	mae:
0.0322161/660	4s	9ms/step	-	loss:	3.3838e-04	-	mae:
0.0322165/660	4s	9ms/step	-	loss:	3.3851e-04	-	mae:
0.0322171/660	4s	9ms/step	-	loss:	3.3889e-04	-	mae:
0.0322176/660	4s	9ms/step	-	loss:	3.3919e-04	-	mae:
0.0323180/660	4s	9ms/step	-	loss:	3.3934e-04	-	mae:
0.0323184/660	4s	9ms/step	-	loss:	3.3945e-04	-	mae:
0.0323189/660	4s	9ms/step	-	loss:	3.3960e-04	-	mae:
0.0323194/660	4s	9ms/step	-	loss:	3.3975e-04	-	mae:
0.0323198/660	4s	9ms/step	-	loss:	3.3985e-04	-	mae:
0.0323203/660							

Battery SoC Estimation Project Report

4s	10ms/step	-	loss:	3.3998e-04	-	mae:
0.0324208/660						
4s	10ms/step	-	loss:	3.4012e-04	-	mae:
0.0324213/660						
4s	10ms/step	-	loss:	3.4022e-04	-	mae:
0.0324218/660						
4s	10ms/step	-	loss:	3.4039e-04	-	mae:
0.0324223/660						
4s	10ms/step	-	loss:	3.4059e-04	-	mae:
0.0324228/660						
4s	10ms/step	-	loss:	3.4078e-04	-	mae:
0.0324233/660						
4s	10ms/step	-	loss:	3.4098e-04	-	mae:
0.0324238/660						
4s	10ms/step	-	loss:	3.4118e-04	-	mae:
0.0325243/660						
4s	10ms/step	-	loss:	3.4138e-04	-	mae:
0.0325248/660						
4s	10ms/step	-	loss:	3.4158e-04	-	mae:
0.0325252/660						
4s	10ms/step	-	loss:	3.4172e-04	-	mae:
0.0325256/660						
4s	10ms/step	-	loss:	3.4184e-04	-	mae:
0.0325261/660						
4s	10ms/step	-	loss:	3.4202e-04	-	mae:
0.0325266/660						
3s	10ms/step	-	loss:	3.4221e-04	-	mae:
0.0326271/660						
3s	10ms/step	-	loss:	3.4240e-04	-	mae:
0.0326276/660						
3s	10ms/step	-	loss:	3.4259e-04	-	mae:
0.0326280/660						
3s	10ms/step	-	loss:	3.4272e-04	-	mae:
0.0326285/660						
3s	10ms/step	-	loss:	3.4285e-04	-	mae:
0.0326290/660						
3s	10ms/step	-	loss:	3.4298e-04	-	mae:
0.0326294/660						
3s	10ms/step	-	loss:	3.4307e-04	-	mae:
0.0326298/660						
3s	10ms/step	-	loss:	3.4314e-04	-	mae:
0.0326302/660						
3s	10ms/step	-	loss:	3.4322e-04	-	mae:
0.0326306/660						
3s	10ms/step	-	loss:	3.4330e-04	-	mae:
0.0327310/660						
3s	10ms/step	-	loss:	3.4338e-04	-	mae:
0.0327313/660						
3s	11ms/step	-	loss:	3.4345e-04	-	mae:
0.0327317/660						
3s	11ms/step	-	loss:	3.4353e-04	-	mae:
0.0327321/660						
3s	11ms/step	-	loss:	3.4361e-04	-	mae:
0.0327325/660						
3s	11ms/step	-	loss:	3.4369e-04	-	mae:
0.0327329/660						
3s	11ms/step	-	loss:	3.4376e-04	-	mae:
0.0327333/660						
3s	11ms/step	-	loss:	3.4382e-04	-	mae:
0.0327337/660						
3s	11ms/step	-	loss:	3.4387e-04	-	mae:
0.0327341/660						
3s	11ms/step	-	loss:	3.4392e-04	-	mae:
0.0327345/660						
3s	11ms/step	-	loss:	3.4397e-04	-	mae:
0.0327349/660						

Battery SoC Estimation Project Report

0.0327353/660	3s	11ms/step	-	loss:	3.4401e-04	-	mae:
0.0327359/660	3s	11ms/step	-	loss:	3.4404e-04	-	mae:
0.0327365/660	3s	11ms/step	-	loss:	3.4408e-04	-	mae:
0.0327371/660	3s	11ms/step	-	loss:	3.4411e-04	-	mae:
0.0327378/660	3s	11ms/step	-	loss:	3.4412e-04	-	mae:
0.0327384/660	2s	11ms/step	-	loss:	3.4410e-04	-	mae:
0.0327391/660	2s	11ms/step	-	loss:	3.4408e-04	-	mae:
0.0327398/660	2s	11ms/step	-	loss:	3.4402e-04	-	mae:
0.0327405/660	2s	11ms/step	-	loss:	3.4394e-04	-	mae:
0.0327411/660	2s	11ms/step	-	loss:	3.4385e-04	-	mae:
0.0327418/660	2s	10ms/step	-	loss:	3.4373e-04	-	mae:
0.0327425/660	2s	10ms/step	-	loss:	3.4362e-04	-	mae:
0.0327431/660	2s	10ms/step	-	loss:	3.4353e-04	-	mae:
0.0327437/660	2s	10ms/step	-	loss:	3.4344e-04	-	mae:
0.0327443/660	2s	10ms/step	-	loss:	3.4335e-04	-	mae:
0.0327447/660	2s	10ms/step	-	loss:	3.4330e-04	-	mae:
0.0327453/660	2s	10ms/step	-	loss:	3.4321e-04	-	mae:
0.0326459/660	2s	10ms/step	-	loss:	3.4313e-04	-	mae:
0.0326465/660	2s	10ms/step	-	loss:	3.4306e-04	-	mae:
0.0326472/660	1s	10ms/step	-	loss:	3.4296e-04	-	mae:
0.0326479/660	1s	10ms/step	-	loss:	3.4286e-04	-	mae:
0.0326486/660	1s	10ms/step	-	loss:	3.4273e-04	-	mae:
0.0326493/660	1s	10ms/step	-	loss:	3.4260e-04	-	mae:
0.0326499/660	1s	10ms/step	-	loss:	3.4249e-04	-	mae:
0.0326505/660	1s	10ms/step	-	loss:	3.4239e-04	-	mae:
0.0326512/660	1s	10ms/step	-	loss:	3.4227e-04	-	mae:
0.0326519/660	1s	10ms/step	-	loss:	3.4214e-04	-	mae:
0.0326526/660	1s	10ms/step	-	loss:	3.4200e-04	-	mae:
0.0325533/660	1s	10ms/step	-	loss:	3.4185e-04	-	mae:
0.0325540/660	1s	10ms/step	-	loss:	3.4170e-04	-	mae:
0.0325547/660	1s	10ms/step	-	loss:	3.4155e-04	-	mae:
0.0325553/660	1s	10ms/step	-	loss:	3.4143e-04	-	mae:
0.0325560/660							

Battery SoC Estimation Project Report

0s	10ms/step	-	loss:	3.4128e-04	-	mae:
0.0325566/660						
0s	10ms/step	-	loss:	3.4116e-04	-	mae:
0.0325571/660						
0s	10ms/step	-	loss:	3.4106e-04	-	mae:
0.0325578/660						
0s	10ms/step	-	loss:	3.4091e-04	-	mae:
0.0324585/660						
0s	10ms/step	-	loss:	3.4076e-04	-	mae:
0.0324592/660						
0s	10ms/step	-	loss:	3.4062e-04	-	mae:
0.0324599/660						
0s	10ms/step	-	loss:	3.4049e-04	-	mae:
0.0324606/660						
0s	10ms/step	-	loss:	3.4036e-04	-	mae:
0.0324613/660						
0s	10ms/step	-	loss:	3.4025e-04	-	mae:
0.0324620/660						
0s	10ms/step	-	loss:	3.4014e-04	-	mae:
0.0324627/660						
0s	10ms/step	-	loss:	3.4002e-04	-	mae:
0.0324634/660						
0s	10ms/step	-	loss:	3.3991e-04	-	mae:
0.0324641/660						
0s	10ms/step	-	loss:	3.3982e-04	-	mae:
0.0323648/660						
0s	10ms/step	-	loss:	3.3971e-04	-	mae:
0.0323655/660						
0s	10ms/step	-	loss:	3.3960e-04	-	mae:
0.0323660/660						

11s 11ms/step - loss: 3.3951e-04 - mae: 0.0323 - val_loss: 3.0730e-04 - val_mae: 0.0288

Epoch 57/200

1/660	18s	28ms/step	-	loss:	2.9537e-04	-	mae:
0.0283	8/660						
5s	8ms/step	-	loss:	2.6119e-04	-	mae:	0.0244
	15/660						
5s	8ms/step	-	loss:	2.8517e-04	-	mae:	
0.0268	22/660						
5s	8ms/step	-	loss:	3.0072e-04	-	mae:	
0.0283	28/660						
5s	8ms/step	-	loss:	3.0755e-04	-	mae:	
0.0290	35/660						
5s	8ms/step	-	loss:	3.1309e-04	-	mae:	
0.0296	42/660						
4s	8ms/step	-	loss:	3.1992e-04	-	mae:	
0.0302	49/660						
4s	8ms/step	-	loss:	3.2565e-04	-	mae:	
0.0308	56/660						
4s	8ms/step	-	loss:	3.3118e-04	-	mae:	
0.0314	63/660						
4s	8ms/step	-	loss:	3.3539e-04	-	mae:	
0.0318	70/660						
4s	8ms/step	-	loss:	3.3797e-04	-	mae:	
0.0321	77/660						
4s	8ms/step	-	loss:	3.3967e-04	-	mae:	
0.0322	82/660						
4s	8ms/step	-	loss:	3.4071e-04	-	mae:	
0.0323	89/660						
4s	8ms/step	-	loss:	3.4186e-04	-	mae:	
0.0325	96/660						
4s	8ms/step	-	loss:	3.4276e-04	-	mae:	
0.0326103/660							
4s	8ms/step	-	loss:	3.4329e-04	-	mae:	
0.0326110/660							
4s	8ms/step	-	loss:	3.4356e-04	-	mae:	
0.0326116/660							

Battery SoC Estimation Project Report

4s 0.0327123/660	8ms/step	-	loss:	3.4394e-04	-	mae:
4s 0.0327130/660	8ms/step	-	loss:	3.4443e-04	-	mae:
4s 0.0328137/660	8ms/step	-	loss:	3.4467e-04	-	mae:
4s 0.0328144/660	8ms/step	-	loss:	3.4478e-04	-	mae:
4s 0.0328151/660	8ms/step	-	loss:	3.4483e-04	-	mae:
4s 0.0328157/660	8ms/step	-	loss:	3.4493e-04	-	mae:
4s 0.0328164/660	8ms/step	-	loss:	3.4496e-04	-	mae:
4s 0.0328171/660	8ms/step	-	loss:	3.4486e-04	-	mae:
3s 0.0328178/660	8ms/step	-	loss:	3.4489e-04	-	mae:
3s 0.0328185/660	8ms/step	-	loss:	3.4490e-04	-	mae:
3s 0.0328192/660	8ms/step	-	loss:	3.4479e-04	-	mae:
3s 0.0328199/660	8ms/step	-	loss:	3.4480e-04	-	mae:
3s 0.0329206/660	8ms/step	-	loss:	3.4495e-04	-	mae:
3s 0.0329212/660	8ms/step	-	loss:	3.4504e-04	-	mae:
3s 0.0329219/660	8ms/step	-	loss:	3.4522e-04	-	mae:
3s 0.0329226/660	8ms/step	-	loss:	3.4548e-04	-	mae:
3s 0.0329233/660	8ms/step	-	loss:	3.4574e-04	-	mae:
3s 0.0330240/660	8ms/step	-	loss:	3.4601e-04	-	mae:
3s 0.0330247/660	8ms/step	-	loss:	3.4626e-04	-	mae:
3s 0.0330254/660	8ms/step	-	loss:	3.4646e-04	-	mae:
3s 0.0330261/660	8ms/step	-	loss:	3.4666e-04	-	mae:
3s 0.0331268/660	8ms/step	-	loss:	3.4692e-04	-	mae:
3s 0.0331275/660	8ms/step	-	loss:	3.4721e-04	-	mae:
3s 0.0331282/660	8ms/step	-	loss:	3.4747e-04	-	mae:
2s 0.0332289/660	8ms/step	-	loss:	3.4768e-04	-	mae:
2s 0.0332296/660	8ms/step	-	loss:	3.4785e-04	-	mae:
2s 0.0332303/660	8ms/step	-	loss:	3.4802e-04	-	mae:
2s 0.0332310/660	8ms/step	-	loss:	3.4818e-04	-	mae:
2s 0.0332317/660	8ms/step	-	loss:	3.4835e-04	-	mae:
2s 0.0332324/660	8ms/step	-	loss:	3.4850e-04	-	mae:
2s 0.0333331/660	8ms/step	-	loss:	3.4864e-04	-	mae:
2s 0.0333336/660	8ms/step	-	loss:	3.4871e-04	-	mae:
0.0333343/660	8ms/step	-	loss:	3.4871e-04	-	mae:

Battery SoC Estimation Project Report						
2s	8ms/step	-	loss:	3.4879e-04	-	mae:
0.0333350/660						
2s	8ms/step	-	loss:	3.4885e-04	-	mae:
0.0333356/660						
2s	8ms/step	-	loss:	3.4889e-04	-	mae:
0.0333363/660						
2s	8ms/step	-	loss:	3.4892e-04	-	mae:
0.0333370/660						
2s	8ms/step	-	loss:	3.4893e-04	-	mae:
0.0333376/660						
2s	8ms/step	-	loss:	3.4891e-04	-	mae:
0.0333382/660						
2s	8ms/step	-	loss:	3.4888e-04	-	mae:
0.0333389/660						
2s	8ms/step	-	loss:	3.4885e-04	-	mae:
0.0333396/660						
2s	8ms/step	-	loss:	3.4878e-04	-	mae:
0.0333402/660						
2s	8ms/step	-	loss:	3.4870e-04	-	mae:
0.0333409/660						
2s	8ms/step	-	loss:	3.4858e-04	-	mae:
0.0333415/660						
1s	8ms/step	-	loss:	3.4847e-04	-	mae:
0.0333421/660						
1s	8ms/step	-	loss:	3.4836e-04	-	mae:
0.0333427/660						
1s	8ms/step	-	loss:	3.4826e-04	-	mae:
0.0333434/660						
1s	8ms/step	-	loss:	3.4814e-04	-	mae:
0.0333441/660						
1s	8ms/step	-	loss:	3.4802e-04	-	mae:
0.0332448/660						
1s	8ms/step	-	loss:	3.4790e-04	-	mae:
0.0332454/660						
1s	8ms/step	-	loss:	3.4780e-04	-	mae:
0.0332459/660						
1s	8ms/step	-	loss:	3.4772e-04	-	mae:
0.0332466/660						
1s	8ms/step	-	loss:	3.4761e-04	-	mae:
0.0332473/660						
1s	8ms/step	-	loss:	3.4750e-04	-	mae:
0.0332480/660						
1s	8ms/step	-	loss:	3.4738e-04	-	mae:
0.0332487/660						
1s	8ms/step	-	loss:	3.4723e-04	-	mae:
0.0332494/660						
1s	8ms/step	-	loss:	3.4707e-04	-	mae:
0.0332501/660						
1s	8ms/step	-	loss:	3.4692e-04	-	mae:
0.0331508/660						
1s	8ms/step	-	loss:	3.4679e-04	-	mae:
0.0331515/660						
1s	8ms/step	-	loss:	3.4664e-04	-	mae:
0.0331522/660						
1s	8ms/step	-	loss:	3.4648e-04	-	mae:
0.0331529/660						
1s	8ms/step	-	loss:	3.4631e-04	-	mae:
0.0331536/660						
1s	8ms/step	-	loss:	3.4612e-04	-	mae:
0.0331542/660						
0s	8ms/step	-	loss:	3.4596e-04	-	mae:
0.0331549/660						
0s	8ms/step	-	loss:	3.4578e-04	-	mae:
0.0330556/660						
0s	8ms/step	-	loss:	3.4561e-04	-	mae:
0.0330563/660						

Battery SoC Estimation Project Report

0s	8ms/step	-	loss:	3.4544e-04	-	mae:	
0.0330570/660	0s	8ms/step	-	loss:	3.4528e-04	-	mae:
0.0330576/660	0s	8ms/step	-	loss:	3.4513e-04	-	mae:
0.0330583/660	0s	8ms/step	-	loss:	3.4497e-04	-	mae:
0.0330588/660	0s	8ms/step	-	loss:	3.4484e-04	-	mae:
0.0330595/660	0s	8ms/step	-	loss:	3.4468e-04	-	mae:
0.0329602/660	0s	8ms/step	-	loss:	3.4452e-04	-	mae:
0.0329609/660	0s	8ms/step	-	loss:	3.4437e-04	-	mae:
0.0329616/660	0s	8ms/step	-	loss:	3.4423e-04	-	mae:
0.0329623/660	0s	8ms/step	-	loss:	3.4409e-04	-	mae:
0.0329629/660	0s	8ms/step	-	loss:	3.4397e-04	-	mae:
0.0329636/660	0s	8ms/step	-	loss:	3.4384e-04	-	mae:
0.0329642/660	0s	8ms/step	-	loss:	3.4374e-04	-	mae:
0.0329648/660	0s	8ms/step	-	loss:	3.4362e-04	-	mae:
0.0329655/660	0s	8ms/step	-	loss:	3.4348e-04	-	mae:
0.0328660/660	6s	9ms/step	- loss: 3.4337e-04 - mae: 0.0328 - val_loss: 2.9759e-04 - val_mae: 0.0287				

Epoch 58/200

0.0157	1/660	17s	26ms/step	-	loss:	1.6802e-04	-	mae:
	8/660							
	5s	8ms/step	-	loss:	1.7201e-04	-	mae:	0.0160
	15/660							
0.0194	5s	8ms/step	-	loss:	2.0558e-04	-	mae:	
	22/660							
0.0218	5s	8ms/step	-	loss:	2.2984e-04	-	mae:	
	28/660							
0.0231	5s	8ms/step	-	loss:	2.4366e-04	-	mae:	
	35/660							
0.0244	4s	8ms/step	-	loss:	2.5638e-04	-	mae:	
	42/660							
0.0257	4s	8ms/step	-	loss:	2.6876e-04	-	mae:	
	49/660							
0.0268	4s	8ms/step	-	loss:	2.7970e-04	-	mae:	
	55/660							
0.0277	4s	8ms/step	-	loss:	2.8844e-04	-	mae:	
	62/660							
0.0285	4s	8ms/step	-	loss:	2.9688e-04	-	mae:	
	69/660							
0.0291	4s	8ms/step	-	loss:	3.0265e-04	-	mae:	
	76/660							
0.0295	4s	8ms/step	-	loss:	3.0714e-04	-	mae:	
	83/660							
0.0299	4s	8ms/step	-	loss:	3.1109e-04	-	mae:	
	89/660							
0.0302	4s	8ms/step	-	loss:	3.1381e-04	-	mae:	
	93/660							
0.0304	4s	8ms/step	-	loss:	3.1541e-04	-	mae:	
	98/660							
0.0305103/660	4s	8ms/step	-	loss:	3.1711e-04	-	mae:	
	9ms/step							
0.0307107/660	4s	9ms/step	-	loss:	3.1855e-04	-	mae:	

Battery SoC Estimation Project Report

4s 0.0308112/660	9ms/step	-	loss:	3.1957e-04	-	mae:
4s 0.0309117/660	9ms/step	-	loss:	3.2067e-04	-	mae:
4s 0.0310122/660	9ms/step	-	loss:	3.2196e-04	-	mae:
4s 0.0312127/660	9ms/step	-	loss:	3.2323e-04	-	mae:
4s 0.0313132/660	9ms/step	-	loss:	3.2433e-04	-	mae:
4s 0.0314137/660	9ms/step	-	loss:	3.2517e-04	-	mae:
4s 0.0314142/660	9ms/step	-	loss:	3.2592e-04	-	mae:
4s 0.0315147/660	9ms/step	-	loss:	3.2656e-04	-	mae:
4s 0.0316151/660	10ms/step	-	loss:	3.2719e-04	-	mae:
4s 0.0316156/660	10ms/step	-	loss:	3.2766e-04	-	mae:
4s 0.0317161/660	10ms/step	-	loss:	3.2819e-04	-	mae:
4s 0.0317165/660	10ms/step	-	loss:	3.2861e-04	-	mae:
4s 0.0317169/660	10ms/step	-	loss:	3.2889e-04	-	mae:
4s 0.0318173/660	10ms/step	-	loss:	3.2925e-04	-	mae:
4s 0.0318178/660	10ms/step	-	loss:	3.2961e-04	-	mae:
4s 0.0318182/660	10ms/step	-	loss:	3.2995e-04	-	mae:
4s 0.0319186/660	10ms/step	-	loss:	3.3016e-04	-	mae:
4s 0.0319191/660	10ms/step	-	loss:	3.3032e-04	-	mae:
4s 0.0319196/660	10ms/step	-	loss:	3.3060e-04	-	mae:
4s 0.0319201/660	10ms/step	-	loss:	3.3083e-04	-	mae:
4s 0.0319206/660	10ms/step	-	loss:	3.3103e-04	-	mae:
4s 0.0320210/660	10ms/step	-	loss:	3.3125e-04	-	mae:
4s 0.0320214/660	11ms/step	-	loss:	3.3138e-04	-	mae:
4s 0.0320218/660	11ms/step	-	loss:	3.3153e-04	-	mae:
4s 0.0320222/660	11ms/step	-	loss:	3.3173e-04	-	mae:
4s 0.0320226/660	11ms/step	-	loss:	3.3202e-04	-	mae:
4s 0.0321231/660	11ms/step	-	loss:	3.3237e-04	-	mae:
4s 0.0321235/660	11ms/step	-	loss:	3.3280e-04	-	mae:
4s 0.0321239/660	11ms/step	-	loss:	3.3314e-04	-	mae:
4s 0.0322243/660	11ms/step	-	loss:	3.3348e-04	-	mae:
4s 0.0322247/660	11ms/step	-	loss:	3.3382e-04	-	mae:
4s 0.0322251/660	11ms/step	-	loss:	3.3415e-04	-	mae:
4s 0.0323255/660	11ms/step	-	loss:	3.3448e-04	-	mae:

Battery SoC Estimation Project Report

4s 0.0323259/660	11ms/step	-	loss:	3.3478e-04	-	mae:
4s 0.0323263/660	11ms/step	-	loss:	3.3507e-04	-	mae:
4s 0.0323267/660	11ms/step	-	loss:	3.3542e-04	-	mae:
4s 0.0324273/660	11ms/step	-	loss:	3.3574e-04	-	mae:
4s 0.0324280/660	11ms/step	-	loss:	3.3623e-04	-	mae:
4s 0.0325286/660	11ms/step	-	loss:	3.3680e-04	-	mae:
4s 0.0325293/660	11ms/step	-	loss:	3.3722e-04	-	mae:
4s 0.0325300/660	11ms/step	-	loss:	3.3772e-04	-	mae:
3s 0.0326307/660	11ms/step	-	loss:	3.3819e-04	-	mae:
3s 0.0326313/660	11ms/step	-	loss:	3.3868e-04	-	mae:
3s 0.0327319/660	11ms/step	-	loss:	3.3910e-04	-	mae:
3s 0.0327326/660	11ms/step	-	loss:	3.3950e-04	-	mae:
3s 0.0327333/660	11ms/step	-	loss:	3.4035e-04	-	mae:
3s 0.0328339/660	11ms/step	-	loss:	3.4066e-04	-	mae:
3s 0.0328346/660	11ms/step	-	loss:	3.4100e-04	-	mae:
3s 0.0328353/660	11ms/step	-	loss:	3.4131e-04	-	mae:
3s 0.0328360/660	11ms/step	-	loss:	3.4161e-04	-	mae:
3s 0.0329366/660	11ms/step	-	loss:	3.4186e-04	-	mae:
3s 0.0329373/660	10ms/step	-	loss:	3.4211e-04	-	mae:
2s 0.0329378/660	10ms/step	-	loss:	3.4227e-04	-	mae:
2s 0.0329384/660	10ms/step	-	loss:	3.4245e-04	-	mae:
2s 0.0329391/660	10ms/step	-	loss:	3.4264e-04	-	mae:
2s 0.0330397/660	10ms/step	-	loss:	3.4277e-04	-	mae:
2s 0.0330403/660	10ms/step	-	loss:	3.4288e-04	-	mae:
2s 0.0330409/660	10ms/step	-	loss:	3.4295e-04	-	mae:
2s 0.0330415/660	10ms/step	-	loss:	3.4301e-04	-	mae:
2s 0.0330421/660	10ms/step	-	loss:	3.4306e-04	-	mae:
2s 0.0330428/660	10ms/step	-	loss:	3.4313e-04	-	mae:
2s 0.0330434/660	10ms/step	-	loss:	3.4318e-04	-	mae:
2s 0.0330441/660	10ms/step	-	loss:	3.4325e-04	-	mae:
2s 0.0330447/660	10ms/step	-	loss:	3.4330e-04	-	mae:
2s 0.0330453/660	10ms/step	-	loss:	3.4334e-04	-	mae:
0.0330459/660						

Battery SoC Estimation Project Report

2s	10ms/step	-	loss:	3.4339e-04	-	mae:
0.0330466/660						
1s	10ms/step	-	loss:	3.4344e-04	-	mae:
0.0330473/660						
1s	10ms/step	-	loss:	3.4348e-04	-	mae:
0.0330480/660						
1s	10ms/step	-	loss:	3.4350e-04	-	mae:
0.0330486/660						
1s	10ms/step	-	loss:	3.4351e-04	-	mae:
0.0330493/660						
1s	10ms/step	-	loss:	3.4350e-04	-	mae:
0.0330498/660						
1s	10ms/step	-	loss:	3.4350e-04	-	mae:
0.0330504/660						
1s	10ms/step	-	loss:	3.4352e-04	-	mae:
0.0330511/660						
1s	10ms/step	-	loss:	3.4354e-04	-	mae:
0.0330517/660						
1s	10ms/step	-	loss:	3.4354e-04	-	mae:
0.0330524/660						
1s	10ms/step	-	loss:	3.4352e-04	-	mae:
0.0330531/660						
1s	10ms/step	-	loss:	3.4349e-04	-	mae:
0.0330538/660						
1s	10ms/step	-	loss:	3.4344e-04	-	mae:
0.0330545/660						
1s	10ms/step	-	loss:	3.4340e-04	-	mae:
0.0330551/660						
1s	10ms/step	-	loss:	3.4337e-04	-	mae:
0.0330557/660						
1s	10ms/step	-	loss:	3.4334e-04	-	mae:
0.0330564/660						
0s	10ms/step	-	loss:	3.4330e-04	-	mae:
0.0330571/660						
0s	10ms/step	-	loss:	3.4327e-04	-	mae:
0.0330578/660						
0s	10ms/step	-	loss:	3.4324e-04	-	mae:
0.0330585/660						
0s	10ms/step	-	loss:	3.4320e-04	-	mae:
0.0330592/660						
0s	10ms/step	-	loss:	3.4317e-04	-	mae:
0.0330599/660						
0s	10ms/step	-	loss:	3.4313e-04	-	mae:
0.0330606/660						
0s	10ms/step	-	loss:	3.4309e-04	-	mae:
0.0330613/660						
0s	10ms/step	-	loss:	3.4307e-04	-	mae:
0.0330620/660						
0s	10ms/step	-	loss:	3.4304e-04	-	mae:
0.0330625/660						
0s	10ms/step	-	loss:	3.4301e-04	-	mae:
0.0330632/660						
0s	10ms/step	-	loss:	3.4298e-04	-	mae:
0.0330639/660						
0s	10ms/step	-	loss:	3.4295e-04	-	mae:
0.0330646/660						
0s	10ms/step	-	loss:	3.4292e-04	-	mae:
0.0330653/660						
0s	10ms/step	-	loss:	3.4288e-04	-	mae:
0.0329660/660						
0s	10ms/step	-	loss:	3.4285e-04	-	mae:
0.0329660/660						
7s 11ms/step - loss: 3.4284e-04 - mae: 0.0329 - val_loss: 2.9707e-04 - val_mae: 0.0292						
Epoch 59/200						
1/660	18s	29ms/step	-	loss:	3.0244e-04	-
0.0295	6/660					mae:

Battery SoC Estimation Project Report

7s	11ms/step 13/660	-	loss:	2.2899e-04	-	mae:	0.0220
5s	9ms/step 20/660	-	loss:	2.4582e-04	-	mae:	0.0236
0.0256	5s 27/660	-	loss:	2.6515e-04	-	mae:	
0.0274	5s 33/660	-	loss:	2.8374e-04	-	mae:	
0.0284	5s 40/660	-	loss:	2.9420e-04	-	mae:	
0.0294	5s 47/660	-	loss:	3.0406e-04	-	mae:	
0.0302	5s 53/660	-	loss:	3.1225e-04	-	mae:	
0.0308	5s 60/660	-	loss:	3.1859e-04	-	mae:	
0.0314	5s 67/660	-	loss:	3.2451e-04	-	mae:	
0.0318	4s 74/660	-	loss:	3.2847e-04	-	mae:	
0.0320	4s 81/660	-	loss:	3.3136e-04	-	mae:	
0.0322	4s 88/660	-	loss:	3.3344e-04	-	mae:	
0.0324	4s 94/660	-	loss:	3.3509e-04	-	mae:	
0.0325101/660	4s 8ms/step	-	loss:	3.3618e-04	-	mae:	
0.0325108/660	4s 8ms/step	-	loss:	3.3705e-04	-	mae:	
0.0326115/660	4s 8ms/step	-	loss:	3.3778e-04	-	mae:	
0.0327122/660	4s 8ms/step	-	loss:	3.3850e-04	-	mae:	
0.0327128/660	4s 8ms/step	-	loss:	3.3951e-04	-	mae:	
0.0328133/660	4s 8ms/step	-	loss:	3.4022e-04	-	mae:	
0.0328140/660	4s 8ms/step	-	loss:	3.4061e-04	-	mae:	
0.0329147/660	4s 8ms/step	-	loss:	3.4101e-04	-	mae:	
0.0329154/660	4s 8ms/step	-	loss:	3.4129e-04	-	mae:	
0.0329160/660	4s 8ms/step	-	loss:	3.4150e-04	-	mae:	
0.0329166/660	4s 8ms/step	-	loss:	3.4162e-04	-	mae:	
0.0329173/660	4s 8ms/step	-	loss:	3.4173e-04	-	mae:	
0.0330180/660	3s 8ms/step	-	loss:	3.4228e-04	-	mae:	
0.0330187/660	3s 8ms/step	-	loss:	3.4233e-04	-	mae:	
0.0330194/660	3s 8ms/step	-	loss:	3.4243e-04	-	mae:	
0.0330201/660	3s 8ms/step	-	loss:	3.4245e-04	-	mae:	
0.0330208/660	3s 8ms/step	-	loss:	3.4251e-04	-	mae:	
0.0330215/660	3s 8ms/step	-	loss:	3.4252e-04	-	mae:	
0.0330222/660	3s 8ms/step	-	loss:	3.4263e-04	-	mae:	
0.0330229/660							

Battery SoC Estimation Project Report

3s 0.0330236/660	8ms/step	-	loss:	3.4275e-04	-	mae:
3s 0.0330243/660	8ms/step	-	loss:	3.4283e-04	-	mae:
3s 0.0330250/660	8ms/step	-	loss:	3.4292e-04	-	mae:
3s 0.0330256/660	8ms/step	-	loss:	3.4300e-04	-	mae:
3s 0.0330262/660	8ms/step	-	loss:	3.4303e-04	-	mae:
3s 0.0330269/660	8ms/step	-	loss:	3.4310e-04	-	mae:
3s 0.0330275/660	8ms/step	-	loss:	3.4322e-04	-	mae:
3s 0.0330281/660	8ms/step	-	loss:	3.4335e-04	-	mae:
3s 0.0330288/660	8ms/step	-	loss:	3.4346e-04	-	mae:
3s 0.0330295/660	8ms/step	-	loss:	3.4355e-04	-	mae:
2s 0.0330302/660	8ms/step	-	loss:	3.4363e-04	-	mae:
2s 0.0330309/660	8ms/step	-	loss:	3.4371e-04	-	mae:
2s 0.0331316/660	8ms/step	-	loss:	3.4380e-04	-	mae:
2s 0.0331323/660	8ms/step	-	loss:	3.4389e-04	-	mae:
2s 0.0331330/660	8ms/step	-	loss:	3.4398e-04	-	mae:
2s 0.0331337/660	8ms/step	-	loss:	3.4409e-04	-	mae:
2s 0.0331344/660	8ms/step	-	loss:	3.4416e-04	-	mae:
2s 0.0331351/660	8ms/step	-	loss:	3.4422e-04	-	mae:
2s 0.0331358/660	8ms/step	-	loss:	3.4425e-04	-	mae:
2s 0.0331365/660	8ms/step	-	loss:	3.4427e-04	-	mae:
2s 0.0331372/660	8ms/step	-	loss:	3.4427e-04	-	mae:
2s 0.0331378/660	8ms/step	-	loss:	3.4425e-04	-	mae:
2s 0.0331384/660	8ms/step	-	loss:	3.4422e-04	-	mae:
2s 0.0331390/660	8ms/step	-	loss:	3.4418e-04	-	mae:
2s 0.0331397/660	8ms/step	-	loss:	3.4415e-04	-	mae:
2s 0.0331404/660	8ms/step	-	loss:	3.4408e-04	-	mae:
2s 0.0331410/660	8ms/step	-	loss:	3.4399e-04	-	mae:
2s 0.0331416/660	8ms/step	-	loss:	3.4389e-04	-	mae:
2s 0.0330423/660	8ms/step	-	loss:	3.4378e-04	-	mae:
1s 0.0330430/660	8ms/step	-	loss:	3.4366e-04	-	mae:
1s 0.0330437/660	8ms/step	-	loss:	3.4355e-04	-	mae:
1s 0.0330444/660	8ms/step	-	loss:	3.4344e-04	-	mae:
1s 0.0330450/660	8ms/step	-	loss:	3.4334e-04	-	mae:

Battery SoC Estimation Project Report

1s	8ms/step	-	loss:	3.4325e-04	-	mae:	
0.0330457/660	1s	8ms/step	-	loss:	3.4314e-04	-	mae:
0.0330464/660	1s	8ms/step	-	loss:	3.4304e-04	-	mae:
0.0330471/660	1s	8ms/step	-	loss:	3.4293e-04	-	mae:
0.0330478/660	1s	8ms/step	-	loss:	3.4281e-04	-	mae:
0.0329485/660	1s	8ms/step	-	loss:	3.4268e-04	-	mae:
0.0329492/660	1s	8ms/step	-	loss:	3.4252e-04	-	mae:
0.0329499/660	1s	8ms/step	-	loss:	3.4238e-04	-	mae:
0.0329506/660	1s	8ms/step	-	loss:	3.4225e-04	-	mae:
0.0329511/660	1s	8ms/step	-	loss:	3.4216e-04	-	mae:
0.0329518/660	1s	8ms/step	-	loss:	3.4202e-04	-	mae:
0.0329525/660	1s	8ms/step	-	loss:	3.4186e-04	-	mae:
0.0329532/660	1s	8ms/step	-	loss:	3.4170e-04	-	mae:
0.0328538/660	0s	8ms/step	-	loss:	3.4155e-04	-	mae:
0.0328545/660	0s	8ms/step	-	loss:	3.4138e-04	-	mae:
0.0328552/660	0s	8ms/step	-	loss:	3.4122e-04	-	mae:
0.0328559/660	0s	8ms/step	-	loss:	3.4106e-04	-	mae:
0.0328565/660	0s	8ms/step	-	loss:	3.4092e-04	-	mae:
0.0328571/660	0s	8ms/step	-	loss:	3.4078e-04	-	mae:
0.0327578/660	0s	8ms/step	-	loss:	3.4061e-04	-	mae:
0.0327585/660	0s	8ms/step	-	loss:	3.4044e-04	-	mae:
0.0327590/660	0s	8ms/step	-	loss:	3.4031e-04	-	mae:
0.0327596/660	0s	8ms/step	-	loss:	3.4016e-04	-	mae:
0.0327603/660	0s	8ms/step	-	loss:	3.4000e-04	-	mae:
0.0327610/660	0s	8ms/step	-	loss:	3.3984e-04	-	mae:
0.0327617/660	0s	8ms/step	-	loss:	3.3968e-04	-	mae:
0.0326624/660	0s	8ms/step	-	loss:	3.3952e-04	-	mae:
0.0326630/660	0s	8ms/step	-	loss:	3.3939e-04	-	mae:
0.0326635/660	0s	8ms/step	-	loss:	3.3928e-04	-	mae:
0.0326642/660	0s	8ms/step	-	loss:	3.3915e-04	-	mae:
0.0326649/660	0s	8ms/step	-	loss:	3.3900e-04	-	mae:
0.0326655/660	0s	8ms/step	-	loss:	3.3888e-04	-	mae:
0.0326660/660	0s	8ms/step	-	loss:	3.3876e-04	-	mae:

6s 9ms/step - loss: 3.3876e-04 - mae: 0.0326 - val_loss: 3.5351e-04 - val_mae: 0.0342

Epoch 60/200

Battery SoC Estimation Project Report

	1/660	16s	26ms/step	-	loss:	1.6719e-04	-	mae:
0.0151	8/660							
	5s	8ms/step	-	loss:	2.1728e-04	-	mae:	0.0200
		14/660						
	5s	8ms/step	-	loss:	2.4891e-04	-	mae:	
0.0232	19/660							
	5s	9ms/step	-	loss:	2.6592e-04	-	mae:	
0.0249	23/660							
	6s	10ms/step	-	loss:	2.7694e-04	-	mae:	
0.0260	28/660							
	6s	10ms/step	-	loss:	2.8565e-04	-	mae:	
0.0269	33/660							
	6s	10ms/step	-	loss:	2.9362e-04	-	mae:	
0.0277	37/660							
	6s	11ms/step	-	loss:	2.9921e-04	-	mae:	
0.0283	41/660							
	6s	11ms/step	-	loss:	3.0569e-04	-	mae:	
0.0289	46/660							
	6s	11ms/step	-	loss:	3.1176e-04	-	mae:	
0.0296	51/660							
	6s	11ms/step	-	loss:	3.1766e-04	-	mae:	
0.0302	55/660							
	6s	11ms/step	-	loss:	3.2202e-04	-	mae:	
0.0306	60/660							
	6s	11ms/step	-	loss:	3.2664e-04	-	mae:	
0.0311	65/660							
	6s	11ms/step	-	loss:	3.2977e-04	-	mae:	
0.0314	70/660							
	6s	11ms/step	-	loss:	3.3252e-04	-	mae:	
0.0317	74/660							
	6s	12ms/step	-	loss:	3.3423e-04	-	mae:	
0.0319	79/660							
	6s	12ms/step	-	loss:	3.3601e-04	-	mae:	
0.0321	84/660							
	6s	12ms/step	-	loss:	3.3768e-04	-	mae:	
0.0322	89/660							
	6s	12ms/step	-	loss:	3.3880e-04	-	mae:	
0.0324	94/660							
	6s	12ms/step	-	loss:	3.3983e-04	-	mae:	
0.0325	99/660							
	6s	12ms/step	-	loss:	3.4059e-04	-	mae:	
0.0326104/660								
	6s	12ms/step	-	loss:	3.4124e-04	-	mae:	
0.0326109/660								
	6s	12ms/step	-	loss:	3.4171e-04	-	mae:	
0.0327114/660								
	6s	12ms/step	-	loss:	3.4216e-04	-	mae:	
0.0327119/660								
	6s	12ms/step	-	loss:	3.4276e-04	-	mae:	
0.0328123/660								
	6s	12ms/step	-	loss:	3.4327e-04	-	mae:	
0.0329127/660								
	6s	12ms/step	-	loss:	3.4365e-04	-	mae:	
0.0329132/660								
	6s	12ms/step	-	loss:	3.4396e-04	-	mae:	
0.0329137/660								
	6s	12ms/step	-	loss:	3.4418e-04	-	mae:	
0.0330141/660								
	6s	12ms/step	-	loss:	3.4428e-04	-	mae:	
0.0330146/660								
	6s	12ms/step	-	loss:	3.4443e-04	-	mae:	
0.0330150/660								
	5s	12ms/step	-	loss:	3.4453e-04	-	mae:	
0.0330154/660								
	5s	12ms/step	-	loss:	3.4461e-04	-	mae:	
0.0330159/660								

Battery SoC Estimation Project Report

5s 0.0330164/660	12ms/step	-	loss:	3.4463e-04	-	mae:
5s 0.0330169/660	12ms/step	-	loss:	3.4458e-04	-	mae:
5s 0.0330173/660	12ms/step	-	loss:	3.4462e-04	-	mae:
5s 0.0331177/660	12ms/step	-	loss:	3.4470e-04	-	mae:
5s 0.0331182/660	12ms/step	-	loss:	3.4471e-04	-	mae:
5s 0.0331186/660	12ms/step	-	loss:	3.4466e-04	-	mae:
5s 0.0331190/660	12ms/step	-	loss:	3.4457e-04	-	mae:
5s 0.0331194/660	12ms/step	-	loss:	3.4457e-04	-	mae:
5s 0.0331199/660	12ms/step	-	loss:	3.4456e-04	-	mae:
5s 0.0331203/660	12ms/step	-	loss:	3.4454e-04	-	mae:
5s 0.0331209/660	12ms/step	-	loss:	3.4452e-04	-	mae:
5s 0.0331214/660	12ms/step	-	loss:	3.4452e-04	-	mae:
5s 0.0331221/660	12ms/step	-	loss:	3.4459e-04	-	mae:
5s 0.0331227/660	12ms/step	-	loss:	3.4470e-04	-	mae:
4s 0.0331241/660	12ms/step	-	loss:	3.4482e-04	-	mae:
4s 0.0331248/660	11ms/step	-	loss:	3.4493e-04	-	mae:
4s 0.0331255/660	11ms/step	-	loss:	3.4504e-04	-	mae:
4s 0.0331262/660	11ms/step	-	loss:	3.4511e-04	-	mae:
4s 0.0332269/660	11ms/step	-	loss:	3.4520e-04	-	mae:
4s 0.0332276/660	11ms/step	-	loss:	3.4533e-04	-	mae:
4s 0.0332283/660	11ms/step	-	loss:	3.4546e-04	-	mae:
4s 0.0332289/660	11ms/step	-	loss:	3.4553e-04	-	mae:
3s 0.0332303/660	11ms/step	-	loss:	3.4556e-04	-	mae:
3s 0.0332310/660	11ms/step	-	loss:	3.4557e-04	-	mae:
3s 0.0332317/660	11ms/step	-	loss:	3.4560e-04	-	mae:
3s 0.0332324/660	11ms/step	-	loss:	3.4563e-04	-	mae:
3s 0.0332330/660	11ms/step	-	loss:	3.4564e-04	-	mae:
3s 0.0332336/660	11ms/step	-	loss:	3.4565e-04	-	mae:
3s 0.0332343/660	10ms/step	-	loss:	3.4562e-04	-	mae:
3s 0.0332350/660	10ms/step	-	loss:	3.4558e-04	-	mae:
3s 0.0332357/660	10ms/step	-	loss:	3.4551e-04	-	mae:

Battery SoC Estimation Project Report						
0.0332363/660	3s	10ms/step	-	loss:	3.4543e-04	- mae:
0.0332370/660	3s	10ms/step	-	loss:	3.4535e-04	- mae:
0.0332377/660	2s	10ms/step	-	loss:	3.4525e-04	- mae:
0.0332384/660	2s	10ms/step	-	loss:	3.4512e-04	- mae:
0.0332391/660	2s	10ms/step	-	loss:	3.4500e-04	- mae:
0.0331397/660	2s	10ms/step	-	loss:	3.4488e-04	- mae:
0.0331404/660	2s	10ms/step	-	loss:	3.4476e-04	- mae:
0.0331411/660	2s	10ms/step	-	loss:	3.4459e-04	- mae:
0.0331418/660	2s	10ms/step	-	loss:	3.4441e-04	- mae:
0.0331425/660	2s	10ms/step	-	loss:	3.4421e-04	- mae:
0.0331432/660	2s	10ms/step	-	loss:	3.4403e-04	- mae:
0.0331438/660	2s	10ms/step	-	loss:	3.4386e-04	- mae:
0.0330444/660	2s	10ms/step	-	loss:	3.4372e-04	- mae:
0.0330451/660	2s	10ms/step	-	loss:	3.4358e-04	- mae:
0.0330457/660	2s	10ms/step	-	loss:	3.4342e-04	- mae:
0.0330462/660	1s	10ms/step	-	loss:	3.4328e-04	- mae:
0.0330469/660	1s	10ms/step	-	loss:	3.4317e-04	- mae:
0.0330476/660	1s	10ms/step	-	loss:	3.4301e-04	- mae:
0.0330482/660	1s	10ms/step	-	loss:	3.4285e-04	- mae:
0.0330489/660	1s	10ms/step	-	loss:	3.4269e-04	- mae:
0.0329496/660	1s	10ms/step	-	loss:	3.4249e-04	- mae:
0.0329503/660	1s	10ms/step	-	loss:	3.4228e-04	- mae:
0.0329509/660	1s	10ms/step	-	loss:	3.4209e-04	- mae:
0.0329516/660	1s	10ms/step	-	loss:	3.4194e-04	- mae:
0.0329523/660	1s	10ms/step	-	loss:	3.4174e-04	- mae:
0.0329530/660	1s	10ms/step	-	loss:	3.4153e-04	- mae:
0.0328536/660	1s	10ms/step	-	loss:	3.4131e-04	- mae:
0.0328543/660	1s	10ms/step	-	loss:	3.4111e-04	- mae:
0.0328550/660	1s	10ms/step	-	loss:	3.4088e-04	- mae:
0.0328556/660	0s	10ms/step	-	loss:	3.4066e-04	- mae:
0.0328563/660	0s	10ms/step	-	loss:	3.4048e-04	- mae:
0.0327569/660	0s	10ms/step	-	loss:	3.4026e-04	- mae:
0.0327576/660	0s	10ms/step	-	loss:	3.4008e-04	- mae:

Battery SoC Estimation Project Report

0s 0.0327583/660	10ms/step	-	loss:	3.3986e-04	-	mae:
0s 0.0327588/660	10ms/step	-	loss:	3.3964e-04	-	mae:
0s 0.0327594/660	10ms/step	-	loss:	3.3948e-04	-	mae:
0s 0.0326600/660	10ms/step	-	loss:	3.3929e-04	-	mae:
0s 0.0326606/660	10ms/step	-	loss:	3.3911e-04	-	mae:
0s 0.0326612/660	10ms/step	-	loss:	3.3893e-04	-	mae:
0s 0.0326618/660	10ms/step	-	loss:	3.3875e-04	-	mae:
0s 0.0326625/660	10ms/step	-	loss:	3.3858e-04	-	mae:
0s 632/660	9ms/step	-	loss:	3.3838e-04	-	mae: 0.0326
0s 0.0325639/660	9ms/step	-	loss:	3.3821e-04	-	mae:
0s 0.0325646/660	9ms/step	-	loss:	3.3810e-04	-	mae:
0s 0.0325652/660	9ms/step	-	loss:	3.3801e-04	-	mae:
0s 0.0325658/660	9ms/step	-	loss:	3.3795e-04	-	mae:
0s 0.0325660/660	9ms/step	-	loss:	3.3790e-04	-	mae:
7s 10ms/step - loss: 3.3788e-04 - mae: 0.0325 - val_loss: 3.8137e-04 - val_mae: 0.0345						
Epoch 61/200						
0.0205	1/660	39:29	4s/step	-	loss: 2.4693e-04	-
	6/660					mae:
7s	12ms/step	-	loss:	3.2121e-04	-	mae: 0.0280
	11/660					
0.0299	7s 12ms/step	-	loss:	3.3983e-04	-	mae:
	16/660					
0.0314	7s 12ms/step	-	loss:	3.5333e-04	-	mae:
	21/660					
0.0323	7s 12ms/step	-	loss:	3.6160e-04	-	mae:
	26/660					
0.0330	7s 12ms/step	-	loss:	3.6763e-04	-	mae:
	32/660					
0.0334	6s 11ms/step	-	loss:	3.7101e-04	-	mae:
	38/660					
0.0338	6s 11ms/step	-	loss:	3.7447e-04	-	mae:
	44/660					
0.0343	6s 10ms/step	-	loss:	3.7857e-04	-	mae:
	49/660					
0.0346	6s 10ms/step	-	loss:	3.8134e-04	-	mae:
	56/660					
0.0351	6s 10ms/step	-	loss:	3.8530e-04	-	mae:
	63/660					
0.0355	5s 10ms/step	-	loss:	3.8826e-04	-	mae:
	69/660					
0.0357	5s 10ms/step	-	loss:	3.8948e-04	-	mae:
	76/660					
0.0358	5s 10ms/step	-	loss:	3.9015e-04	-	mae:
	82/660					
0.0359	5s 9ms/step	-	loss:	3.9047e-04	-	mae: 0.0359
	89/660					
0.0360101/660	9ms/step	-	loss:	3.9049e-04	-	mae:
	95/660					
0.0360108/660	9ms/step	-	loss:	3.9041e-04	-	mae:

Battery SoC Estimation Project Report						
0.0360115/660	5s	9ms/step	-	loss:	3.8971e-04	- mae:
	4s	9ms/step	-	loss:	3.8932e-04	- mae:
0.0360122/660						
	4s	9ms/step	-	loss:	3.8919e-04	- mae:
0.0360128/660						
	4s	9ms/step	-	loss:	3.8894e-04	- mae:
0.0361134/660						
	4s	9ms/step	-	loss:	3.8857e-04	- mae:
0.0361140/660						
	4s	9ms/step	-	loss:	3.8816e-04	- mae:
0.0360146/660						
	4s	9ms/step	-	loss:	3.8777e-04	- mae:
0.0360152/660						
	4s	9ms/step	-	loss:	3.8737e-04	- mae:
0.0360158/660						
	4s	9ms/step	-	loss:	3.8689e-04	- mae:
0.0360164/660						
	4s	9ms/step	-	loss:	3.8629e-04	- mae:
0.0360169/660						
	4s	9ms/step	-	loss:	3.8585e-04	- mae:
0.0360175/660						
	4s	9ms/step	-	loss:	3.8537e-04	- mae:
0.0359181/660						
	4s	9ms/step	-	loss:	3.8473e-04	- mae:
0.0359187/660						
	4s	9ms/step	-	loss:	3.8403e-04	- mae:
0.0359194/660						
	4s	9ms/step	-	loss:	3.8329e-04	- mae:
0.0358201/660						
	4s	9ms/step	-	loss:	3.8255e-04	- mae:
0.0358207/660						
	4s	9ms/step	-	loss:	3.8196e-04	- mae:
0.0357214/660						
	4s	9ms/step	-	loss:	3.8126e-04	- mae:
0.0357220/660						
	3s	9ms/step	-	loss:	3.8076e-04	- mae:
0.0357227/660						
	3s	9ms/step	-	loss:	3.8022e-04	- mae:
0.0356234/660						
	3s	9ms/step	-	loss:	3.7969e-04	- mae:
0.0356240/660						
	3s	9ms/step	-	loss:	3.7924e-04	- mae:
0.0356247/660						
	3s	9ms/step	-	loss:	3.7873e-04	- mae:
0.0355251/660						
	3s	9ms/step	-	loss:	3.7845e-04	- mae:
0.0355255/660						
	3s	9ms/step	-	loss:	3.7816e-04	- mae:
0.0355259/660						
	3s	9ms/step	-	loss:	3.7788e-04	- mae:
0.0355264/660						
	3s	9ms/step	-	loss:	3.7762e-04	- mae:
0.0355269/660						
	3s	9ms/step	-	loss:	3.7738e-04	- mae:
0.0355274/660						
	3s	9ms/step	-	loss:	3.7716e-04	- mae:
0.0355277/660						
	3s	9ms/step	-	loss:	3.7704e-04	- mae:
0.0354282/660						
	3s	9ms/step	-	loss:	3.7681e-04	- mae:
0.0354287/660						
	3s	9ms/step	-	loss:	3.7657e-04	- mae:
0.0354292/660						
	3s	9ms/step	-	loss:	3.7635e-04	- mae:
0.0354297/660						

Battery SoC Estimation Project Report

0.0354302/660	3s	9ms/step	-	loss:	3.7611e-04	-	mae:
0.0354307/660	3s	9ms/step	-	loss:	3.7588e-04	-	mae:
0.0354311/660	3s	10ms/step	-	loss:	3.7566e-04	-	mae:
0.0354316/660	3s	10ms/step	-	loss:	3.7549e-04	-	mae:
0.0354321/660	3s	10ms/step	-	loss:	3.7528e-04	-	mae:
0.0353326/660	3s	10ms/step	-	loss:	3.7506e-04	-	mae:
0.0353330/660	3s	10ms/step	-	loss:	3.7486e-04	-	mae:
0.0353335/660	3s	10ms/step	-	loss:	3.7469e-04	-	mae:
0.0353340/660	3s	10ms/step	-	loss:	3.7446e-04	-	mae:
0.0353345/660	3s	10ms/step	-	loss:	3.7423e-04	-	mae:
0.0353350/660	3s	10ms/step	-	loss:	3.7399e-04	-	mae:
0.0353355/660	3s	10ms/step	-	loss:	3.7374e-04	-	mae:
0.0353360/660	2s	10ms/step	-	loss:	3.7323e-04	-	mae:
0.0352365/660	2s	10ms/step	-	loss:	3.7298e-04	-	mae:
0.0352369/660	2s	10ms/step	-	loss:	3.7276e-04	-	mae:
0.0352374/660	2s	10ms/step	-	loss:	3.7249e-04	-	mae:
0.0352379/660	2s	10ms/step	-	loss:	3.7221e-04	-	mae:
0.0352383/660	2s	10ms/step	-	loss:	3.7199e-04	-	mae:
0.0352387/660	2s	10ms/step	-	loss:	3.7178e-04	-	mae:
0.0351391/660	2s	10ms/step	-	loss:	3.7159e-04	-	mae:
0.0351395/660	2s	10ms/step	-	loss:	3.7140e-04	-	mae:
0.0351399/660	2s	10ms/step	-	loss:	3.7122e-04	-	mae:
0.0351403/660	2s	10ms/step	-	loss:	3.7104e-04	-	mae:
0.0351407/660	2s	10ms/step	-	loss:	3.7086e-04	-	mae:
0.0351411/660	2s	10ms/step	-	loss:	3.7068e-04	-	mae:
0.0351415/660	2s	10ms/step	-	loss:	3.7049e-04	-	mae:
0.0351419/660	2s	10ms/step	-	loss:	3.7031e-04	-	mae:
0.0350423/660	2s	10ms/step	-	loss:	3.7015e-04	-	mae:
0.0350428/660	2s	10ms/step	-	loss:	3.6995e-04	-	mae:
0.0350435/660	2s	10ms/step	-	loss:	3.6968e-04	-	mae:
0.0350442/660	2s	10ms/step	-	loss:	3.6942e-04	-	mae:
0.0350448/660	2s	10ms/step	-	loss:	3.6919e-04	-	mae:
0.0350454/660							

Battery SoC Estimation Project Report

2s	10ms/step	-	loss:	3.6896e-04	-	mae:
0.0350460/660						
2s	10ms/step	-	loss:	3.6874e-04	-	mae:
0.0349467/660						
1s	10ms/step	-	loss:	3.6848e-04	-	mae:
0.0349474/660						
1s	10ms/step	-	loss:	3.6822e-04	-	mae:
0.0349480/660						
1s	10ms/step	-	loss:	3.6798e-04	-	mae:
0.0349487/660						
1s	10ms/step	-	loss:	3.6768e-04	-	mae:
0.0349494/660						
1s	10ms/step	-	loss:	3.6738e-04	-	mae:
0.0348501/660						
1s	10ms/step	-	loss:	3.6708e-04	-	mae:
0.0348508/660						
1s	10ms/step	-	loss:	3.6680e-04	-	mae:
0.0348515/660						
1s	10ms/step	-	loss:	3.6650e-04	-	mae:
0.0348521/660						
1s	10ms/step	-	loss:	3.6624e-04	-	mae:
0.0348527/660						
1s	10ms/step	-	loss:	3.6597e-04	-	mae:
0.0347534/660						
1s	10ms/step	-	loss:	3.6565e-04	-	mae:
0.0347541/660						
1s	10ms/step	-	loss:	3.6532e-04	-	mae:
0.0347548/660						
1s	10ms/step	-	loss:	3.6500e-04	-	mae:
0.0347555/660						
1s	10ms/step	-	loss:	3.6469e-04	-	mae:
0.0346562/660						
0s	10ms/step	-	loss:	3.6437e-04	-	mae:
0.0346569/660						
0s	10ms/step	-	loss:	3.6407e-04	-	mae:
0.0346576/660						
0s	10ms/step	-	loss:	3.6376e-04	-	mae:
0.0346581/660						
0s	10ms/step	-	loss:	3.6355e-04	-	mae:
0.0345588/660						
0s	10ms/step	-	loss:	3.6324e-04	-	mae:
0.0345595/660						
0s	10ms/step	-	loss:	3.6293e-04	-	mae:
0.0345602/660						
0s	10ms/step	-	loss:	3.6263e-04	-	mae:
0.0345609/660						
0s	10ms/step	-	loss:	3.6234e-04	-	mae:
0.0345615/660						
0s	10ms/step	-	loss:	3.6209e-04	-	mae:
0.0344622/660						
0s	10ms/step	-	loss:	3.6180e-04	-	mae:
0.0344628/660						
0s	10ms/step	-	loss:	3.6156e-04	-	mae:
0.0344635/660						
0s	10ms/step	-	loss:	3.6129e-04	-	mae:
0.0344642/660						
0s	10ms/step	-	loss:	3.6104e-04	-	mae:
0.0343649/660						
0s	10ms/step	-	loss:	3.6077e-04	-	mae:
0.0343656/660						
0s	10ms/step	-	loss:	3.6051e-04	-	mae:
0.0343660/660						

11s 11ms/step - loss: 3.6032e-04 - mae: 0.0343 - val_loss: 2.5406e-04 - val_mae: 0.0242

Epoch 62/200

0.0207	1/660	35:12	3s/step	-	loss:	2.1794e-04	-	mae:
	6/660							

Battery SoC Estimation Project Report

	8s	12ms/step 11/660	-	loss:	1.8236e-04	-	mae:	0.0169
0.0187	7s	12ms/step 16/660	-	loss:	2.0028e-04	-	mae:	
0.0207	7s	12ms/step 21/660	-	loss:	2.1946e-04	-	mae:	
0.0222	7s	12ms/step 26/660	-	loss:	2.3486e-04	-	mae:	
0.0235	7s	12ms/step 32/660	-	loss:	2.4689e-04	-	mae:	
0.0244	6s	11ms/step 38/660	-	loss:	2.6556e-04	-	mae:	
0.0254	6s	11ms/step 44/660	-	loss:	2.7483e-04	-	mae:	
0.0263	6s	10ms/step 51/660	-	loss:	2.8432e-04	-	mae:	
0.0273	6s	10ms/step 58/660	-	loss:	2.9308e-04	-	mae:	
0.0282	5s	10ms/step 64/660	-	loss:	2.9884e-04	-	mae:	
0.0287	5s	10ms/step 70/660	-	loss:	3.0313e-04	-	mae:	
0.0292	5s	10ms/step 77/660	-	loss:	3.0697e-04	-	mae:	
0.0296	5s	10ms/step 83/660	-	loss:	3.0988e-04	-	mae:	
0.0299	5s	10ms/step 89/660	-	loss:	3.1226e-04	-	mae:	
0.0301	5s	9ms/step 95/660	-	loss:	3.1447e-04	-	mae:	0.0303
101/660	5s	9ms/step 101/660	-	loss:	3.1633e-04	-	mae:	
0.0305107/660	5s	9ms/step 107/660	-	loss:	3.1804e-04	-	mae:	
0.0307114/660	5s	9ms/step 114/660	-	loss:	3.1982e-04	-	mae:	
0.0309121/660	4s	9ms/step 121/660	-	loss:	3.2180e-04	-	mae:	
0.0311128/660	4s	9ms/step 128/660	-	loss:	3.2344e-04	-	mae:	
0.0312135/660	4s	9ms/step 135/660	-	loss:	3.2469e-04	-	mae:	
0.0314141/660	4s	9ms/step 141/660	-	loss:	3.2555e-04	-	mae:	
0.0315148/660	4s	9ms/step 148/660	-	loss:	3.2649e-04	-	mae:	
0.0315155/660	4s	9ms/step 155/660	-	loss:	3.2726e-04	-	mae:	
0.0316162/660	4s	9ms/step 162/660	-	loss:	3.2777e-04	-	mae:	
0.0317169/660	4s	9ms/step 169/660	-	loss:	3.2819e-04	-	mae:	
0.0317176/660	4s	9ms/step 176/660	-	loss:	3.2861e-04	-	mae:	
0.0318183/660	4s	9ms/step 183/660	-	loss:	3.2881e-04	-	mae:	
0.0318188/660	4s	9ms/step 188/660	-	loss:	3.2890e-04	-	mae:	
0.0318195/660	4s	9ms/step 195/660	-	loss:	3.2908e-04	-	mae:	
0.0318201/660	4s	9ms/step 201/660	-	loss:	3.2919e-04	-	mae:	
0.0318208/660	4s	9ms/step 208/660	-	loss:	3.2932e-04	-	mae:	
0.0318215/660								

Battery SoC Estimation Project Report						
0.0318222/660	3s	9ms/step	-	loss:	3.2942e-04	- mae:
0.0319228/660	3s	9ms/step	-	loss:	3.2962e-04	- mae:
0.0319234/660	3s	9ms/step	-	loss:	3.2980e-04	- mae:
0.0319241/660	3s	9ms/step	-	loss:	3.2997e-04	- mae:
0.0319247/660	3s	9ms/step	-	loss:	3.3015e-04	- mae:
0.0319254/660	3s	9ms/step	-	loss:	3.3029e-04	- mae:
0.0319260/660	3s	9ms/step	-	loss:	3.3043e-04	- mae:
0.0320267/660	3s	9ms/step	-	loss:	3.3055e-04	- mae:
0.0320274/660	3s	9ms/step	-	loss:	3.3075e-04	- mae:
0.0320281/660	3s	9ms/step	-	loss:	3.3097e-04	- mae:
0.0320287/660	3s	9ms/step	-	loss:	3.3115e-04	- mae:
0.0320293/660	3s	9ms/step	-	loss:	3.3125e-04	- mae:
0.0320300/660	3s	9ms/step	-	loss:	3.3136e-04	- mae:
0.0321307/660	3s	9ms/step	-	loss:	3.3145e-04	- mae:
0.0321312/660	3s	9ms/step	-	loss:	3.3155e-04	- mae:
0.0321319/660	2s	9ms/step	-	loss:	3.3163e-04	- mae:
0.0321326/660	2s	9ms/step	-	loss:	3.3173e-04	- mae:
0.0321333/660	2s	9ms/step	-	loss:	3.3184e-04	- mae:
0.0321340/660	2s	9ms/step	-	loss:	3.3195e-04	- mae:
0.0321346/660	2s	9ms/step	-	loss:	3.3206e-04	- mae:
0.0321353/660	2s	9ms/step	-	loss:	3.3214e-04	- mae:
0.0321359/660	2s	9ms/step	-	loss:	3.3221e-04	- mae:
0.0321366/660	2s	9ms/step	-	loss:	3.3225e-04	- mae:
0.0321373/660	2s	9ms/step	-	loss:	3.3229e-04	- mae:
0.0321380/660	2s	9ms/step	-	loss:	3.3231e-04	- mae:
0.0322387/660	2s	9ms/step	-	loss:	3.3233e-04	- mae:
0.0322394/660	2s	9ms/step	-	loss:	3.3235e-04	- mae:
0.0322401/660	2s	9ms/step	-	loss:	3.3235e-04	- mae:
0.0322407/660	2s	9ms/step	-	loss:	3.3231e-04	- mae:
0.0322414/660	2s	9ms/step	-	loss:	3.3226e-04	- mae:
0.0321421/660	2s	9ms/step	-	loss:	3.3219e-04	- mae:
0.0321428/660	1s	9ms/step	-	loss:	3.3210e-04	- mae:
0.0321435/660					3.3203e-04	- mae:

Battery SoC Estimation Project Report

1s 0.0321440/660	9ms/step	-	loss:	3.3197e-04	-	mae:
1s 0.0321447/660	9ms/step	-	loss:	3.3194e-04	-	mae:
1s 0.0321454/660	9ms/step	-	loss:	3.3188e-04	-	mae:
1s 0.0321461/660	9ms/step	-	loss:	3.3183e-04	-	mae:
1s 0.0321467/660	9ms/step	-	loss:	3.3178e-04	-	mae:
1s 0.0321474/660	9ms/step	-	loss:	3.3175e-04	-	mae:
1s 0.0321481/660	9ms/step	-	loss:	3.3170e-04	-	mae:
1s 0.0321488/660	9ms/step	-	loss:	3.3163e-04	-	mae:
1s 0.0321494/660	9ms/step	-	loss:	3.3154e-04	-	mae:
1s 0.0321499/660	9ms/step	-	loss:	3.3146e-04	-	mae:
1s 0.0321503/660	9ms/step	-	loss:	3.3140e-04	-	mae:
1s 0.0321508/660	9ms/step	-	loss:	3.3136e-04	-	mae:
1s 0.0321512/660	9ms/step	-	loss:	3.3131e-04	-	mae:
1s 0.0321516/660	9ms/step	-	loss:	3.3127e-04	-	mae:
1s 0.0321521/660	9ms/step	-	loss:	3.3123e-04	-	mae:
1s 0.0321526/660	9ms/step	-	loss:	3.3117e-04	-	mae:
1s 0.0321531/660	9ms/step	-	loss:	3.3110e-04	-	mae:
1s 0.0320535/660	9ms/step	-	loss:	3.3102e-04	-	mae:
1s 0.0320539/660	9ms/step	-	loss:	3.3096e-04	-	mae:
1s 0.0320543/660	9ms/step	-	loss:	3.3089e-04	-	mae:
1s 0.0320548/660	9ms/step	-	loss:	3.3081e-04	-	mae:
0s 0.0320553/660	9ms/step	-	loss:	3.3073e-04	-	mae:
0s 0.0320557/660	9ms/step	-	loss:	3.3065e-04	-	mae:
0s 0.0320561/660	9ms/step	-	loss:	3.3058e-04	-	mae:
0s 0.0320566/660	9ms/step	-	loss:	3.3051e-04	-	mae:
0s 0.0320571/660	9ms/step	-	loss:	3.3042e-04	-	mae:
0s 0.0320576/660	9ms/step	-	loss:	3.3033e-04	-	mae:
0s 0.0320581/660	9ms/step	-	loss:	3.3024e-04	-	mae:
0s 0.0320586/660	9ms/step	-	loss:	3.3014e-04	-	mae:
0s 0.0320591/660	9ms/step	-	loss:	3.3005e-04	-	mae:
0s 0.0319596/660	9ms/step	-	loss:	3.2995e-04	-	mae:
0s 0.0319601/660	9ms/step	-	loss:	3.2986e-04	-	mae:
0s 0.0319606/660	9ms/step	-	loss:	3.2976e-04	-	mae:

Battery SoC Estimation Project Report

0s 0.0319610/660	9ms/step	-	loss:	3.2967e-04	-	mae:		
0s 0.0319614/660	9ms/step	-	loss:	3.2960e-04	-	mae:		
0s 0.0319619/660	9ms/step	-	loss:	3.2953e-04	-	mae:		
0s 0.0319624/660	9ms/step	-	loss:	3.2945e-04	-	mae:		
0s 0.0319629/660	9ms/step	-	loss:	3.2936e-04	-	mae:		
0s 0.0319633/660	9ms/step	-	loss:	3.2928e-04	-	mae:		
0s 0.0319638/660	9ms/step	-	loss:	3.2921e-04	-	mae:		
0s 0.0319642/660	9ms/step	-	loss:	3.2914e-04	-	mae:		
0s 0.0319646/660	9ms/step	-	loss:	3.2908e-04	-	mae:		
0s 0.0319651/660	9ms/step	-	loss:	3.2902e-04	-	mae:		
0s 0.0318655/660	9ms/step	-	loss:	3.2894e-04	-	mae:		
0s 0.0318659/660	9ms/step	-	loss:	3.2888e-04	-	mae:		
0s 0.0318660/660	9ms/step	-	loss:	3.2882e-04	-	mae:		
10s 10ms/step - loss: 3.2879e-04 - mae: 0.0318 - val_loss: 2.4862e-04 - val_mae: 0.0244								
Epoch 63/200								
0.0162	1/660 5/660 8s 10/660	38:03	3s/step	-	loss:	1.7233e-04	-	mae:
0.0183	8s 15/660 7s 20/660	13ms/step 10/660 12ms/step 25/660	-	loss:	1.8011e-04	-	mae:	0.0169
0.0203	7s 25/660	12ms/step 12ms/step	-	loss:	1.9323e-04	-	mae:	
0.0218	7s 31/660	12ms/step 11ms/step	-	loss:	2.1270e-04	-	mae:	
0.0232	7s 37/660	12ms/step 11ms/step	-	loss:	2.2791e-04	-	mae:	
0.0242	6s 43/660	11ms/step 11ms/step	-	loss:	2.4181e-04	-	mae:	
0.0252	6s 49/660	11ms/step 10ms/step	-	loss:	2.5183e-04	-	mae:	
0.0263	6s 56/660	10ms/step 10ms/step	-	loss:	2.6157e-04	-	mae:	
0.0272	6s 63/660	10ms/step 10ms/step	-	loss:	2.7240e-04	-	mae:	
0.0281	5s 70/660	10ms/step 10ms/step	-	loss:	2.8092e-04	-	mae:	
0.0288	5s 76/660	10ms/step 10ms/step	-	loss:	2.8948e-04	-	mae:	
0.0293	5s 82/660	10ms/step 10ms/step	-	loss:	2.9671e-04	-	mae:	
0.0297	5s 88/660	10ms/step 10ms/step	-	loss:	3.0546e-04	-	mae:	
0.0300	5s 95/660	10ms/step 10ms/step	-	loss:	3.0861e-04	-	mae:	
0.0303	5s 108/660	10ms/step 9ms/step	-	loss:	3.1139e-04	-	mae:	
0.0305102/660	5s 108/660	10ms/step 9ms/step	-	loss:	3.1421e-04	-	mae:	
0.0310114/660	5s	9ms/step	-	loss:	3.1660e-04	-	mae:	0.0308

Battery SoC Estimation Project Report						
0.0312121/660	5s	9ms/step	-	loss:	3.2030e-04	- mae:
	4s	9ms/step	-	loss:	3.2252e-04	- mae:
0.0314128/660						
	4s	9ms/step	-	loss:	3.2447e-04	- mae:
0.0316134/660						
	4s	9ms/step	-	loss:	3.2585e-04	- mae:
0.0317141/660						
	4s	9ms/step	-	loss:	3.2717e-04	- mae:
0.0319148/660						
	4s	9ms/step	-	loss:	3.2830e-04	- mae:
0.0320155/660						
	4s	9ms/step	-	loss:	3.2923e-04	- mae:
0.0321162/660						
	4s	9ms/step	-	loss:	3.3001e-04	- mae:
0.0321169/660						
	4s	9ms/step	-	loss:	3.3066e-04	- mae:
0.0322176/660						
	4s	9ms/step	-	loss:	3.3124e-04	- mae:
0.0323183/660						
	4s	9ms/step	-	loss:	3.3158e-04	- mae:
0.0323190/660						
	4s	9ms/step	-	loss:	3.3184e-04	- mae:
0.0323196/660						
	4s	9ms/step	-	loss:	3.3204e-04	- mae:
0.0324202/660						
	4s	9ms/step	-	loss:	3.3216e-04	- mae:
0.0324208/660						
	3s	9ms/step	-	loss:	3.3230e-04	- mae:
0.0324214/660						
	3s	9ms/step	-	loss:	3.3240e-04	- mae:
0.0324220/660						
	3s	9ms/step	-	loss:	3.3260e-04	- mae:
0.0324227/660						
	3s	9ms/step	-	loss:	3.3297e-04	- mae:
0.0325234/660						
	3s	9ms/step	-	loss:	3.3335e-04	- mae:
0.0325241/660						
	3s	9ms/step	-	loss:	3.3370e-04	- mae:
0.0325248/660						
	3s	9ms/step	-	loss:	3.3402e-04	- mae:
0.0326254/660						
	3s	9ms/step	-	loss:	3.3426e-04	- mae:
0.0326261/660						
	3s	9ms/step	-	loss:	3.3454e-04	- mae:
0.0326268/660						
	3s	9ms/step	-	loss:	3.3487e-04	- mae:
0.0326275/660						
	3s	9ms/step	-	loss:	3.3518e-04	- mae:
0.0327281/660						
	3s	9ms/step	-	loss:	3.3540e-04	- mae:
0.0327288/660						
	3s	9ms/step	-	loss:	3.3561e-04	- mae:
0.0327295/660						
	3s	9ms/step	-	loss:	3.3576e-04	- mae:
0.0327302/660						
	3s	9ms/step	-	loss:	3.3589e-04	- mae:
0.0327309/660						
	3s	9ms/step	-	loss:	3.3601e-04	- mae:
0.0328316/660						
	2s	9ms/step	-	loss:	3.3613e-04	- mae:
0.0328323/660						
	2s	9ms/step	-	loss:	3.3624e-04	- mae:
0.0328330/660						
	2s	9ms/step	-	loss:	3.3635e-04	- mae:
0.0328336/660						

Battery SoC Estimation Project Report						
0.0328343/660	2s	9ms/step	-	loss:	3.3642e-04	- mae:
0.0328350/660	2s	9ms/step	-	loss:	3.3648e-04	- mae:
0.0328357/660	2s	9ms/step	-	loss:	3.3652e-04	- mae:
0.0328364/660	2s	9ms/step	-	loss:	3.3653e-04	- mae:
0.0328371/660	2s	9ms/step	-	loss:	3.3654e-04	- mae:
0.0328378/660	2s	8ms/step	-	loss:	3.3653e-04	- mae:
0.0328385/660	2s	8ms/step	-	loss:	3.3649e-04	- mae:
0.0328392/660	2s	8ms/step	-	loss:	3.3646e-04	- mae:
0.0328399/660	2s	8ms/step	-	loss:	3.3643e-04	- mae:
0.0328406/660	2s	8ms/step	-	loss:	3.3637e-04	- mae:
0.0328413/660	2s	8ms/step	-	loss:	3.3628e-04	- mae:
0.0328420/660	2s	8ms/step	-	loss:	3.3617e-04	- mae:
0.0327427/660	1s	8ms/step	-	loss:	3.3594e-04	- mae:
0.0327433/660	1s	8ms/step	-	loss:	3.3584e-04	- mae:
0.0327440/660	1s	8ms/step	-	loss:	3.3574e-04	- mae:
0.0327446/660	1s	8ms/step	-	loss:	3.3565e-04	- mae:
0.0327452/660	1s	8ms/step	-	loss:	3.3557e-04	- mae:
0.0327458/660	1s	8ms/step	-	loss:	3.3549e-04	- mae:
0.0327463/660	1s	8ms/step	-	loss:	3.3543e-04	- mae:
0.0327469/660	1s	8ms/step	-	loss:	3.3537e-04	- mae:
0.0327475/660	1s	8ms/step	-	loss:	3.3530e-04	- mae:
0.0327481/660	1s	8ms/step	-	loss:	3.3523e-04	- mae:
0.0327488/660	1s	8ms/step	-	loss:	3.3512e-04	- mae:
0.0326495/660	1s	8ms/step	-	loss:	3.3500e-04	- mae:
0.0326501/660	1s	8ms/step	-	loss:	3.3490e-04	- mae:
0.0326507/660	1s	8ms/step	-	loss:	3.3481e-04	- mae:
0.0326514/660	1s	8ms/step	-	loss:	3.3471e-04	- mae:
0.0326521/660	1s	8ms/step	-	loss:	3.3459e-04	- mae:
0.0326527/660	1s	8ms/step	-	loss:	3.3448e-04	- mae:
0.0326534/660	1s	8ms/step	-	loss:	3.3434e-04	- mae:
0.0326541/660	1s	8ms/step	-	loss:	3.3420e-04	- mae:
0.0326547/660	0s	8ms/step	-	loss:	3.3409e-04	- mae:
0.0325554/660						

Battery SoC Estimation Project Report

0s	8ms/step	-	loss:	3.3396e-04	-	mae:	
0.0325560/660	0s	8ms/step	-	loss:	3.3385e-04	-	mae:
0.0325566/660	0s	8ms/step	-	loss:	3.3374e-04	-	mae:
0.0325573/660	0s	8ms/step	-	loss:	3.3360e-04	-	mae:
0.0325579/660	0s	8ms/step	-	loss:	3.3349e-04	-	mae:
0.0325585/660	0s	8ms/step	-	loss:	3.3337e-04	-	mae:
0.0325591/660	0s	8ms/step	-	loss:	3.3324e-04	-	mae:
0.0325598/660	0s	8ms/step	-	loss:	3.3310e-04	-	mae:
0.0324605/660	0s	8ms/step	-	loss:	3.3296e-04	-	mae:
0.0324611/660	0s	8ms/step	-	loss:	3.3285e-04	-	mae:
0.0324618/660	0s	8ms/step	-	loss:	3.3271e-04	-	mae:
0.0324625/660	0s	8ms/step	-	loss:	3.3257e-04	-	mae:
0.0324632/660	0s	8ms/step	-	loss:	3.3244e-04	-	mae:
0.0324638/660	0s	8ms/step	-	loss:	3.3234e-04	-	mae:
0.0324644/660	0s	8ms/step	-	loss:	3.3223e-04	-	mae:
0.0324651/660	0s	8ms/step	-	loss:	3.3211e-04	-	mae:
0.0323658/660	0s	8ms/step	-	loss:	3.3198e-04	-	mae:
0.0323660/660	10s	9ms/step	-	loss:	3.3193e-04	-	mae: 0.0323 - val_loss: 2.9462e-04 - val_mae: 0.0289

Epoch 64/200

0.0175	1/660	30s	46ms/step	-	loss:	1.7795e-04	-	mae:
	5/660							
8s	13ms/step	-	loss:	1.8264e-04	-	mae:	0.0177	
	9/660							
8s	13ms/step	-	loss:	1.9870e-04	-	mae:		
0.0194	14/660							
8s	13ms/step	-	loss:	2.2692e-04	-	mae:		
0.0222	19/660							
8s	13ms/step	-	loss:	2.4473e-04	-	mae:		
0.0240	23/660							
7s	13ms/step	-	loss:	2.5706e-04	-	mae:		
0.0252	28/660							
7s	12ms/step	-	loss:	2.6693e-04	-	mae:		
0.0262	33/660							
7s	12ms/step	-	loss:	2.7443e-04	-	mae:		
0.0269	38/660							
7s	12ms/step	-	loss:	2.8131e-04	-	mae:		
0.0276	42/660							
7s	12ms/step	-	loss:	2.8686e-04	-	mae:		
0.0281	47/660							
7s	12ms/step	-	loss:	2.9231e-04	-	mae:		
0.0286	51/660							
7s	12ms/step	-	loss:	2.9650e-04	-	mae:		
0.0290	56/660							
7s	12ms/step	-	loss:	3.0129e-04	-	mae:		
0.0295	61/660							
7s	12ms/step	-	loss:	3.0572e-04	-	mae:		
0.0299	65/660							
7s	12ms/step	-	loss:	3.0827e-04	-	mae:		
0.0301	70/660							

Battery SoC Estimation Project Report

0.0304	7s	12ms/step	-	loss:	3.1112e-04	-	mae:
	7s	75/660					
0.0306	7s	12ms/step	-	loss:	3.1337e-04	-	mae:
	80/660						
0.0308	7s	85/660	-	loss:	3.1535e-04	-	mae:
	6s	12ms/step	-	loss:	3.1722e-04	-	mae:
0.0309	90/660						
	6s	12ms/step	-	loss:	3.1865e-04	-	mae:
0.0311	95/660						
	6s	12ms/step	-	loss:	3.1994e-04	-	mae:
0.0312	100/660						
	6s	12ms/step	-	loss:	3.2099e-04	-	mae:
0.0313	104/660						
	6s	12ms/step	-	loss:	3.2191e-04	-	mae:
0.0314	108/660						
	6s	12ms/step	-	loss:	3.2270e-04	-	mae:
0.0314	113/660						
	6s	12ms/step	-	loss:	3.2367e-04	-	mae:
0.0315	118/660						
	6s	12ms/step	-	loss:	3.2479e-04	-	mae:
0.0316	122/660						
	6s	12ms/step	-	loss:	3.2563e-04	-	mae:
0.0317	126/660						
	6s	12ms/step	-	loss:	3.2636e-04	-	mae:
0.0318	130/660						
	6s	12ms/step	-	loss:	3.2689e-04	-	mae:
0.0318	134/660						
	6s	12ms/step	-	loss:	3.2735e-04	-	mae:
0.0319	139/660						
	6s	12ms/step	-	loss:	3.2778e-04	-	mae:
0.0319	144/660						
	6s	12ms/step	-	loss:	3.2813e-04	-	mae:
0.0319	148/660						
	6s	12ms/step	-	loss:	3.2844e-04	-	mae:
0.0320	152/660						
	6s	12ms/step	-	loss:	3.2868e-04	-	mae:
0.0320	156/660						
	6s	12ms/step	-	loss:	3.2890e-04	-	mae:
0.0320	161/660						
	6s	12ms/step	-	loss:	3.2909e-04	-	mae:
0.0320	166/660						
	6s	12ms/step	-	loss:	3.2920e-04	-	mae:
0.0320	170/660						
	6s	12ms/step	-	loss:	3.2931e-04	-	mae:
0.0320	174/660						
	6s	12ms/step	-	loss:	3.2940e-04	-	mae:
0.0320	178/660						
	6s	12ms/step	-	loss:	3.2943e-04	-	mae:
0.0320	182/660						
	5s	12ms/step	-	loss:	3.2939e-04	-	mae:
0.0320	188/660						
	5s	12ms/step	-	loss:	3.2930e-04	-	mae:
0.0320	193/660						
	5s	12ms/step	-	loss:	3.2928e-04	-	mae:
0.0320	199/660						
	5s	12ms/step	-	loss:	3.2923e-04	-	mae:
0.0320	205/660						
	5s	12ms/step	-	loss:	3.2919e-04	-	mae:
0.0320	211/660						
	5s	12ms/step	-	loss:	3.2914e-04	-	mae:
0.0320	217/660						
	5s	12ms/step	-	loss:	3.2913e-04	-	mae:
0.0320	223/660						
	5s	12ms/step	-	loss:	3.2921e-04	-	mae:
0.0320	229/660						

Battery SoC Estimation Project Report

5s 0.0320236/660	12ms/step	-	loss:	3.2930e-04	-	mae:
4s 0.0320243/660	12ms/step	-	loss:	3.2940e-04	-	mae:
4s 0.0320250/660	12ms/step	-	loss:	3.2957e-04	-	mae:
4s 0.0320255/660	11ms/step	-	loss:	3.2970e-04	-	mae:
4s 0.0320261/660	11ms/step	-	loss:	3.2975e-04	-	mae:
4s 0.0320267/660	11ms/step	-	loss:	3.2984e-04	-	mae:
4s 0.0320273/660	11ms/step	-	loss:	3.2997e-04	-	mae:
4s 0.0320279/660	11ms/step	-	loss:	3.3010e-04	-	mae:
4s 0.0321286/660	11ms/step	-	loss:	3.3069e-04	-	mae:
4s 0.0322292/660	11ms/step	-	loss:	3.3225e-04	-	mae:
4s 0.0324299/660	11ms/step	-	loss:	3.3436e-04	-	mae:
3s 0.0327306/660	11ms/step	-	loss:	3.3750e-04	-	mae:
3s 0.0330313/660	11ms/step	-	loss:	3.4126e-04	-	mae:
3s 0.0334320/660	11ms/step	-	loss:	3.4563e-04	-	mae:
3s 0.0339326/660	11ms/step	-	loss:	3.5042e-04	-	mae:
3s 0.0343333/660	11ms/step	-	loss:	3.5480e-04	-	mae:
3s 0.0347339/660	11ms/step	-	loss:	3.6020e-04	-	mae:
3s 0.0352346/660	11ms/step	-	loss:	3.6495e-04	-	mae:
3s 0.0357353/660	11ms/step	-	loss:	3.7068e-04	-	mae:
3s 0.0362360/660	11ms/step	-	loss:	3.7660e-04	-	mae:
3s 0.0367366/660	11ms/step	-	loss:	3.8251e-04	-	mae:
3s 0.0372373/660	10ms/step	-	loss:	3.8755e-04	-	mae:
2s 0.0377378/660	10ms/step	-	loss:	3.9335e-04	-	mae:
2s 0.0381384/660	10ms/step	-	loss:	3.9740e-04	-	mae:
2s 0.0385390/660	10ms/step	-	loss:	4.0215e-04	-	mae:
2s 0.0389397/660	10ms/step	-	loss:	4.0679e-04	-	mae:
2s 0.0394404/660	10ms/step	-	loss:	4.1205e-04	-	mae:
2s 0.0398411/660	10ms/step	-	loss:	4.1711e-04	-	mae:
2s 0.0402418/660	10ms/step	-	loss:	4.2199e-04	-	mae:
2s 0.0406424/660	10ms/step	-	loss:	4.2671e-04	-	mae:
2s 0.0410431/660	10ms/step	-	loss:	4.3067e-04	-	mae:
2s 0.0414438/660	10ms/step	-	loss:	4.3513e-04	-	mae:
2s 0.0418444/660	10ms/step	-	loss:	4.3942e-04	-	mae:

Battery SoC Estimation Project Report

2s 0.0421450/660	10ms/step	-	loss:	4.4298e-04	-	mae:
2s 0.0424457/660	10ms/step	-	loss:	4.4644e-04	-	mae:
2s 0.0427463/660	10ms/step	-	loss:	4.5034e-04	-	mae:
1s 0.0430470/660	10ms/step	-	loss:	4.5358e-04	-	mae:
1s 0.0433477/660	10ms/step	-	loss:	4.5724e-04	-	mae:
1s 0.0436484/660	10ms/step	-	loss:	4.6074e-04	-	mae:
1s 0.0439491/660	10ms/step	-	loss:	4.6410e-04	-	mae:
1s 0.0442498/660	10ms/step	-	loss:	4.6731e-04	-	mae:
1s 0.0444503/660	10ms/step	-	loss:	4.7041e-04	-	mae:
1s 0.0446509/660	10ms/step	-	loss:	4.7256e-04	-	mae:
1s 0.0448516/660	10ms/step	-	loss:	4.7507e-04	-	mae:
1s 0.0451522/660	10ms/step	-	loss:	4.7789e-04	-	mae:
1s 0.0453529/660	10ms/step	-	loss:	4.8023e-04	-	mae:
1s 0.0455536/660	10ms/step	-	loss:	4.8285e-04	-	mae:
1s 0.0457543/660	10ms/step	-	loss:	4.8537e-04	-	mae:
1s 0.0459550/660	10ms/step	-	loss:	4.8780e-04	-	mae:
1s 0.0461557/660	10ms/step	-	loss:	4.9017e-04	-	mae:
1s 0.0463564/660	10ms/step	-	loss:	4.9245e-04	-	mae:
0s 0.0465570/660	10ms/step	-	loss:	4.9464e-04	-	mae:
0s 0.0467577/660	10ms/step	-	loss:	4.9646e-04	-	mae:
0s 0.0468584/660	10ms/step	-	loss:	4.9851e-04	-	mae:
0s 0.0470591/660	10ms/step	-	loss:	5.0047e-04	-	mae:
0s 0.0472598/660	10ms/step	-	loss:	5.0235e-04	-	mae:
0s 0.0473605/660	10ms/step	-	loss:	5.0417e-04	-	mae:
0s 0.0475611/660	10ms/step	-	loss:	5.0594e-04	-	mae:
0s 0.0476618/660	10ms/step	-	loss:	5.0741e-04	-	mae:
0s 0.0477625/660	10ms/step	-	loss:	5.0907e-04	-	mae:
0s 0.0479630/660	10ms/step	-	loss:	5.1067e-04	-	mae:
0s 0.0480637/660	10ms/step	-	loss:	5.1178e-04	-	mae:
0s 0.0481643/660	10ms/step	-	loss:	5.1331e-04	-	mae:
0s 0.0482650/660	10ms/step	-	loss:	5.1458e-04	-	mae:
0s 0.0483657/660	10ms/step	-	loss:	5.1601e-04	-	mae:
0s 660/660	9ms/step	-	loss:	5.1739e-04	-	mae: 0.0484

Battery SoC Estimation Project Report

7s 10ms/step - loss: 5.1816e-04 - mae: 0.0485 - val_loss: 4.1604e-04 - val_mae: 0.0381

Epoch 65/200

	1/660	17s	27ms/step	-	loss:	3.5903e-04	-	mae:
0.0323	7/660							
5s	9ms/step	-	loss:	3.9581e-04	-	mae:	0.0358	
	12/660							
6s	9ms/step	-	loss:	4.3153e-04	-	mae:		
0.0394	19/660							
5s	9ms/step	-	loss:	4.5421e-04	-	mae:		
0.0417	26/660							
5s	9ms/step	-	loss:	4.7073e-04	-	mae:		
0.0433	33/660							
5s	9ms/step	-	loss:	4.8132e-04	-	mae:		
0.0444	40/660							
5s	8ms/step	-	loss:	4.9057e-04	-	mae:		
0.0453	47/660							
5s	8ms/step	-	loss:	4.9700e-04	-	mae:		
0.0459	54/660							
5s	8ms/step	-	loss:	5.0256e-04	-	mae:		
0.0465	61/660							
4s	8ms/step	-	loss:	5.0659e-04	-	mae:		
0.0469	67/660							
4s	8ms/step	-	loss:	5.0835e-04	-	mae:		
0.0471	73/660							
4s	8ms/step	-	loss:	5.0945e-04	-	mae:		
0.0472	80/660							
4s	8ms/step	-	loss:	5.0986e-04	-	mae:		
0.0473	86/660							
4s	8ms/step	-	loss:	5.1005e-04	-	mae:		
0.0473	93/660							
4s	8ms/step	-	loss:	5.0969e-04	-	mae:		
0.0473100/660	4s	8ms/step	-	loss:	5.0944e-04	-	mae:	
0.0473106/660	4s	8ms/step	-	loss:	5.0917e-04	-	mae:	
0.0473113/660	4s	8ms/step	-	loss:	5.0854e-04	-	mae:	
0.0472120/660	4s	8ms/step	-	loss:	5.0837e-04	-	mae:	
0.0472127/660	4s	8ms/step	-	loss:	5.0815e-04	-	mae:	
0.0472133/660	4s	8ms/step	-	loss:	5.0771e-04	-	mae:	
0.0472138/660	4s	8ms/step	-	loss:	5.0731e-04	-	mae:	
0.0472145/660	4s	8ms/step	-	loss:	5.0668e-04	-	mae:	
0.0471152/660	4s	8ms/step	-	loss:	5.0593e-04	-	mae:	
0.0471158/660	4s	8ms/step	-	loss:	5.0519e-04	-	mae:	
0.0470165/660	4s	8ms/step	-	loss:	5.0433e-04	-	mae:	
0.0469172/660	4s	8ms/step	-	loss:	5.0376e-04	-	mae:	
0.0469179/660	3s	8ms/step	-	loss:	5.0313e-04	-	mae:	
0.0468186/660	3s	8ms/step	-	loss:	5.0235e-04	-	mae:	
0.0468192/660	3s	8ms/step	-	loss:	5.0179e-04	-	mae:	
0.0467199/660	3s	8ms/step	-	loss:	5.0112e-04	-	mae:	
0.0467206/660	3s	8ms/step	-	loss:	5.0047e-04	-	mae:	
0.0466213/660								

Battery SoC Estimation Project Report						
0.0465220/660	3s	8ms/step	-	loss:	4.9982e-04	- mae:
0.0465226/660	3s	8ms/step	-	loss:	4.9931e-04	- mae:
0.0465232/660	3s	8ms/step	-	loss:	4.9891e-04	- mae:
0.0464239/660	3s	8ms/step	-	loss:	4.9848e-04	- mae:
0.0464246/660	3s	8ms/step	-	loss:	4.9796e-04	- mae:
0.0463253/660	3s	8ms/step	-	loss:	4.9741e-04	- mae:
0.0463260/660	3s	8ms/step	-	loss:	4.9683e-04	- mae:
0.0462265/660	3s	8ms/step	-	loss:	4.9623e-04	- mae:
0.0462272/660	3s	8ms/step	-	loss:	4.9587e-04	- mae:
0.0462278/660	3s	8ms/step	-	loss:	4.9536e-04	- mae:
0.0461285/660	3s	8ms/step	-	loss:	4.9493e-04	- mae:
0.0461291/660	3s	8ms/step	-	loss:	4.9438e-04	- mae:
0.0460297/660	3s	8ms/step	-	loss:	4.9394e-04	- mae:
0.0460304/660	2s	8ms/step	-	loss:	4.9351e-04	- mae:
0.0460311/660	2s	8ms/step	-	loss:	4.9305e-04	- mae:
0.0459318/660	2s	8ms/step	-	loss:	4.9261e-04	- mae:
0.0459324/660	2s	8ms/step	-	loss:	4.9218e-04	- mae:
0.0459331/660	2s	8ms/step	-	loss:	4.9181e-04	- mae:
0.0458338/660	2s	8ms/step	-	loss:	4.9138e-04	- mae:
0.0458345/660	2s	8ms/step	-	loss:	4.9092e-04	- mae:
0.0457352/660	2s	8ms/step	-	loss:	4.9044e-04	- mae:
0.0457359/660	2s	8ms/step	-	loss:	4.8995e-04	- mae:
0.0456366/660	2s	8ms/step	-	loss:	4.8945e-04	- mae:
0.0456373/660	2s	8ms/step	-	loss:	4.8894e-04	- mae:
0.0455379/660	2s	8ms/step	-	loss:	4.8841e-04	- mae:
0.0455385/660	2s	8ms/step	-	loss:	4.8796e-04	- mae:
0.0455391/660	2s	8ms/step	-	loss:	4.8750e-04	- mae:
0.0454398/660	2s	8ms/step	-	loss:	4.8703e-04	- mae:
0.0454405/660	2s	8ms/step	-	loss:	4.8645e-04	- mae:
0.0453412/660	2s	8ms/step	-	loss:	4.8585e-04	- mae:
0.0452419/660	1s	8ms/step	-	loss:	4.8523e-04	- mae:
0.0452426/660	1s	8ms/step	-	loss:	4.8460e-04	- mae:
0.0451432/660					4.8399e-04	- mae:

Battery SoC Estimation Project Report						
0.0451439/660	1s	8ms/step	-	loss:	4.8347e-04	- mae:
0.0450446/660	1s	8ms/step	-	loss:	4.8287e-04	- mae:
0.0450453/660	1s	8ms/step	-	loss:	4.8227e-04	- mae:
0.0449460/660	1s	8ms/step	-	loss:	4.8167e-04	- mae:
0.0449467/660	1s	8ms/step	-	loss:	4.8109e-04	- mae:
0.0448474/660	1s	8ms/step	-	loss:	4.7992e-04	- mae:
0.0448481/660	1s	8ms/step	-	loss:	4.7933e-04	- mae:
0.0447488/660	1s	8ms/step	-	loss:	4.7871e-04	- mae:
0.0447495/660	1s	8ms/step	-	loss:	4.7809e-04	- mae:
0.0446502/660	1s	8ms/step	-	loss:	4.7747e-04	- mae:
0.0445509/660	1s	8ms/step	-	loss:	4.7687e-04	- mae:
0.0445515/660	1s	8ms/step	-	loss:	4.7635e-04	- mae:
0.0444521/660	1s	8ms/step	-	loss:	4.7583e-04	- mae:
0.0444528/660	1s	8ms/step	-	loss:	4.7521e-04	- mae:
0.0443535/660	1s	8ms/step	-	loss:	4.7459e-04	- mae:
0.0443542/660	0s	8ms/step	-	loss:	4.7397e-04	- mae:
0.0442549/660	0s	8ms/step	-	loss:	4.7336e-04	- mae:
0.0442556/660	0s	8ms/step	-	loss:	4.7276e-04	- mae:
0.0441563/660	0s	8ms/step	-	loss:	4.7217e-04	- mae:
0.0441569/660	0s	8ms/step	-	loss:	4.7167e-04	- mae:
0.0440575/660	0s	8ms/step	-	loss:	4.7117e-04	- mae:
0.0440582/660	0s	8ms/step	-	loss:	4.7060e-04	- mae:
0.0439589/660	0s	8ms/step	-	loss:	4.7004e-04	- mae:
0.0439596/660	0s	8ms/step	-	loss:	4.6950e-04	- mae:
0.0438603/660	0s	8ms/step	-	loss:	4.6898e-04	- mae:
0.0438610/660	0s	8ms/step	-	loss:	4.6848e-04	- mae:
0.0437616/660	0s	8ms/step	-	loss:	4.6805e-04	- mae:
0.0437623/660	0s	8ms/step	-	loss:	4.6756e-04	- mae:
0.0436630/660	0s	8ms/step	-	loss:	4.6708e-04	- mae:
0.0436636/660	0s	8ms/step	-	loss:	4.6668e-04	- mae:
0.0436641/660	0s	8ms/step	-	loss:	4.6636e-04	- mae:
0.0435647/660	0s	8ms/step	-	loss:	4.6596e-04	- mae:
0.0435652/660						

Battery SoC Estimation Project Report

0s	8ms/step	-	loss:	4.6563e-04	-	mae:	
0.0435656/660							
0s	8ms/step	-	loss:	4.6536e-04	-	mae:	
0.0434660/660							
0s	8ms/step	-	loss:	4.6510e-04	-	mae:	
0.0434660/660							
6s	9ms/step - loss: 4.6503e-04 - mae: 0.0434 - val_loss: 3.5705e-04 - val_mae: 0.0340						
Epoch 66/200							
	1/660	24s	38ms/step	-	loss: 2.1221e-04	-	mae:
0.0190	5/660						
8s	13ms/step	-	loss:	2.7304e-04	-	mae: 0.0253	
	9/660						
8s	14ms/step	-	loss:	2.8518e-04	-	mae:	
0.0266	13/660						
8s	13ms/step	-	loss:	3.0247e-04	-	mae:	
0.0283	18/660						
8s	13ms/step	-	loss:	3.1386e-04	-	mae:	
0.0294	23/660						
8s	13ms/step	-	loss:	3.2612e-04	-	mae:	
0.0306	28/660						
7s	12ms/step	-	loss:	3.3360e-04	-	mae:	
0.0314	33/660						
7s	12ms/step	-	loss:	3.3963e-04	-	mae:	
0.0320	37/660						
7s	13ms/step	-	loss:	3.4483e-04	-	mae:	
0.0325	42/660						
7s	12ms/step	-	loss:	3.5318e-04	-	mae:	
0.0333	47/660						
7s	12ms/step	-	loss:	3.5954e-04	-	mae:	
0.0339	52/660						
7s	12ms/step	-	loss:	3.6561e-04	-	mae:	
0.0345	56/660						
7s	12ms/step	-	loss:	3.6998e-04	-	mae:	
0.0349	60/660						
7s	12ms/step	-	loss:	3.7389e-04	-	mae:	
0.0353	65/660						
7s	12ms/step	-	loss:	3.7718e-04	-	mae:	
0.0356	70/660						
7s	12ms/step	-	loss:	3.7997e-04	-	mae:	
0.0358	75/660						
7s	12ms/step	-	loss:	3.8193e-04	-	mae:	
0.0360	79/660						
7s	12ms/step	-	loss:	3.8333e-04	-	mae:	
0.0361	83/660						
7s	12ms/step	-	loss:	3.8483e-04	-	mae:	
0.0363	87/660						
7s	12ms/step	-	loss:	3.8606e-04	-	mae:	
0.0364	91/660						
7s	12ms/step	-	loss:	3.8711e-04	-	mae:	
0.0365	95/660						
7s	13ms/step	-	loss:	3.8819e-04	-	mae:	
0.0366	99/660						
7s	13ms/step	-	loss:	3.8905e-04	-	mae:	
0.0366103/660							
7s	13ms/step	-	loss:	3.8985e-04	-	mae:	
0.0367107/660							
7s	13ms/step	-	loss:	3.9050e-04	-	mae:	
0.0368111/660							
6s	13ms/step	-	loss:	3.9097e-04	-	mae:	
0.0368115/660							
6s	13ms/step	-	loss:	3.9159e-04	-	mae:	
0.0369121/660							
6s	13ms/step	-	loss:	3.9249e-04	-	mae:	
0.0370127/660							
6s	12ms/step	-	loss:	3.9326e-04	-	mae:	
0.0370133/660							

Battery SoC Estimation Project Report

6s 0.0371139/660	12ms/step	-	loss:	3.9369e-04	-	mae:
6s 0.0371146/660	12ms/step	-	loss:	3.9395e-04	-	mae:
6s 0.0371152/660	12ms/step	-	loss:	3.9414e-04	-	mae:
5s 0.0371158/660	12ms/step	-	loss:	3.9421e-04	-	mae:
5s 0.0371164/660	12ms/step	-	loss:	3.9416e-04	-	mae:
5s 0.0371171/660	12ms/step	-	loss:	3.9401e-04	-	mae:
5s 0.0371178/660	11ms/step	-	loss:	3.9395e-04	-	mae:
5s 0.0371184/660	11ms/step	-	loss:	3.9381e-04	-	mae:
5s 0.0371191/660	11ms/step	-	loss:	3.9353e-04	-	mae:
5s 0.0371198/660	11ms/step	-	loss:	3.9325e-04	-	mae:
5s 0.0370203/660	11ms/step	-	loss:	3.9301e-04	-	mae:
5s 0.0370209/660	11ms/step	-	loss:	3.9284e-04	-	mae:
4s 0.0370216/660	11ms/step	-	loss:	3.9268e-04	-	mae:
4s 0.0370222/660	11ms/step	-	loss:	3.9250e-04	-	mae:
4s 0.0370228/660	11ms/step	-	loss:	3.9245e-04	-	mae:
4s 0.0370234/660	11ms/step	-	loss:	3.9242e-04	-	mae:
4s 0.0370240/660	11ms/step	-	loss:	3.9239e-04	-	mae:
4s 0.0370246/660	11ms/step	-	loss:	3.9236e-04	-	mae:
4s 0.0370252/660	11ms/step	-	loss:	3.9234e-04	-	mae:
4s 0.0370258/660	10ms/step	-	loss:	3.9228e-04	-	mae:
4s 0.0370265/660	10ms/step	-	loss:	3.9229e-04	-	mae:
4s 0.0370271/660	10ms/step	-	loss:	3.9235e-04	-	mae:
3s 0.0370277/660	10ms/step	-	loss:	3.9252e-04	-	mae:
3s 0.0370283/660	10ms/step	-	loss:	3.9302e-04	-	mae:
3s 0.0371289/660	10ms/step	-	loss:	3.9359e-04	-	mae:
3s 0.0372295/660	10ms/step	-	loss:	3.9417e-04	-	mae:
3s 0.0372301/660	10ms/step	-	loss:	3.9475e-04	-	mae:
3s 0.0373307/660	10ms/step	-	loss:	3.9535e-04	-	mae:
3s 0.0373313/660	10ms/step	-	loss:	3.9593e-04	-	mae:
3s 0.0374319/660	10ms/step	-	loss:	3.9649e-04	-	mae:
3s 0.0374324/660	10ms/step	-	loss:	3.9691e-04	-	mae:
3s 0.0375330/660	10ms/step	-	loss:	3.9741e-04	-	mae:
3s 0.0375337/660	10ms/step	-	loss:	3.9741e-04	-	mae:

Battery SoC Estimation Project Report

3s	10ms/step	-	loss:	3.9792e-04	-	mae:
0.0376344/660						
3s	10ms/step	-	loss:	3.9838e-04	-	mae:
0.0376351/660						
3s	10ms/step	-	loss:	3.9879e-04	-	mae:
0.0377358/660						
3s	10ms/step	-	loss:	3.9916e-04	-	mae:
0.0377365/660						
2s	10ms/step	-	loss:	3.9949e-04	-	mae:
0.0377372/660						
2s	10ms/step	-	loss:	3.9979e-04	-	mae:
0.0378379/660						
2s	10ms/step	-	loss:	4.0004e-04	-	mae:
0.0378386/660						
2s	10ms/step	-	loss:	4.0028e-04	-	mae:
0.0378393/660						
2s	10ms/step	-	loss:	4.0047e-04	-	mae:
0.0378400/660						
2s	10ms/step	-	loss:	4.0061e-04	-	mae:
0.0378407/660						
2s	10ms/step	-	loss:	4.0071e-04	-	mae:
0.0379413/660						
2s	10ms/step	-	loss:	4.0076e-04	-	mae:
0.0379420/660						
2s	10ms/step	-	loss:	4.0079e-04	-	mae:
0.0379427/660						
2s	10ms/step	-	loss:	4.0083e-04	-	mae:
0.0379434/660						
2s	10ms/step	-	loss:	4.0085e-04	-	mae:
0.0379441/660						
2s	10ms/step	-	loss:	4.0087e-04	-	mae:
0.0379447/660						
2s	10ms/step	-	loss:	4.0088e-04	-	mae:
0.0379453/660						
1s	10ms/step	-	loss:	4.0088e-04	-	mae:
0.0379460/660						
1s	10ms/step	-	loss:	4.0089e-04	-	mae:
0.0379467/660						
1s	10ms/step	-	loss:	4.0090e-04	-	mae:
0.0379473/660						
1s	10ms/step	-	loss:	4.0090e-04	-	mae:
0.0379479/660						
1s	9ms/step	-	loss:	4.0088e-04	-	mae: 0.0379
485/660						
1s	9ms/step	-	loss:	4.0083e-04	-	mae:
0.0379491/660						
1s	9ms/step	-	loss:	4.0077e-04	-	mae:
0.0379498/660						
1s	9ms/step	-	loss:	4.0070e-04	-	mae:
0.0379505/660						
1s	9ms/step	-	loss:	4.0063e-04	-	mae:
0.0379511/660						
1s	9ms/step	-	loss:	4.0058e-04	-	mae:
0.0379518/660						
1s	9ms/step	-	loss:	4.0050e-04	-	mae:
0.0378525/660						
1s	9ms/step	-	loss:	4.0043e-04	-	mae:
0.0378530/660						
1s	9ms/step	-	loss:	4.0037e-04	-	mae:
0.0378537/660						
1s	9ms/step	-	loss:	4.0028e-04	-	mae:
0.0378544/660						
1s	9ms/step	-	loss:	4.0019e-04	-	mae:
0.0378551/660						
1s	9ms/step	-	loss:	4.0011e-04	-	mae:
0.0378558/660						

Battery SoC Estimation Project Report

0s	9ms/step	-	loss:	4.0004e-04	-	mae:	
0.0378565/660	0s	9ms/step	-	loss:	3.9996e-04	-	mae:
0.0378570/660	0s	9ms/step	-	loss:	3.9990e-04	-	mae:
0.0378576/660	0s	9ms/step	-	loss:	3.9983e-04	-	mae:
0.0378582/660	0s	9ms/step	-	loss:	3.9974e-04	-	mae:
0.0378589/660	0s	9ms/step	-	loss:	3.9964e-04	-	mae:
0.0378596/660	0s	9ms/step	-	loss:	3.9953e-04	-	mae:
0.0378602/660	0s	9ms/step	-	loss:	3.9944e-04	-	mae:
0.0377609/660	0s	9ms/step	-	loss:	3.9934e-04	-	mae:
0.0377615/660	0s	9ms/step	-	loss:	3.9925e-04	-	mae:
0.0377622/660	0s	9ms/step	-	loss:	3.9914e-04	-	mae:
0.0377629/660	0s	9ms/step	-	loss:	3.9903e-04	-	mae:
0.0377636/660	0s	9ms/step	-	loss:	3.9892e-04	-	mae:
0.0377643/660	0s	9ms/step	-	loss:	3.9881e-04	-	mae:
0.0377650/660	0s	9ms/step	-	loss:	3.9869e-04	-	mae:
0.0377657/660	0s	9ms/step	-	loss:	3.9856e-04	-	mae:
0.0377660/660							

7s 10ms/step - loss: 3.9849e-04 - mae: 0.0377 - val_loss: 2.6142e-04 - val_mae: 0.0246
 Epoch 67/200

1/660	38:44	4s/step	-	loss:	2.3750e-04	-	mae:
0.0224	6/660						
7s	12ms/step	-	loss:	2.2454e-04	-	mae:	0.0210
	11/660						
7s	12ms/step	-	loss:	2.4502e-04	-	mae:	
0.0230	16/660						
7s	12ms/step	-	loss:	2.6307e-04	-	mae:	
0.0248	21/660						
7s	12ms/step	-	loss:	2.7663e-04	-	mae:	
0.0262	26/660						
7s	12ms/step	-	loss:	2.8746e-04	-	mae:	
0.0272	31/660						
7s	11ms/step	-	loss:	2.9514e-04	-	mae:	
0.0280	38/660						
6s	11ms/step	-	loss:	3.0608e-04	-	mae:	
0.0291	45/660						
6s	10ms/step	-	loss:	3.1670e-04	-	mae:	
0.0301	52/660						
6s	10ms/step	-	loss:	3.2591e-04	-	mae:	
0.0310	58/660						
5s	10ms/step	-	loss:	3.3291e-04	-	mae:	
0.0317	64/660						
5s	10ms/step	-	loss:	3.3855e-04	-	mae:	
0.0322	70/660						
5s	10ms/step	-	loss:	3.4294e-04	-	mae:	
0.0327	76/660						
5s	10ms/step	-	loss:	3.4633e-04	-	mae:	
0.0330	82/660						
5s	10ms/step	-	loss:	3.4929e-04	-	mae:	
0.0333	88/660						
5s	9ms/step	-	loss:	3.5180e-04	-	mae:	0.0335
	94/660						

Battery SoC Estimation Project Report

5s 0.0337101/660	9ms/step	-	loss:	3.5396e-04	-	mae:
5s 0.0339108/660	9ms/step	-	loss:	3.5600e-04	-	mae:
5s 0.0341115/660	9ms/step	-	loss:	3.5767e-04	-	mae:
5s 0.0342121/660	9ms/step	-	loss:	3.5911e-04	-	mae:
4s 0.0344127/660	9ms/step	-	loss:	3.6038e-04	-	mae:
4s 0.0345134/660	9ms/step	-	loss:	3.6145e-04	-	mae:
4s 0.0345139/660	9ms/step	-	loss:	3.6229e-04	-	mae:
4s 0.0346143/660	9ms/step	-	loss:	3.6274e-04	-	mae:
4s 0.0346147/660	9ms/step	-	loss:	3.6303e-04	-	mae:
4s 0.0346152/660	9ms/step	-	loss:	3.6333e-04	-	mae:
4s 0.0347157/660	9ms/step	-	loss:	3.6365e-04	-	mae:
4s 0.0347161/660	10ms/step	-	loss:	3.6388e-04	-	mae:
4s 0.0347165/660	10ms/step	-	loss:	3.6397e-04	-	mae:
4s 0.0347170/660	10ms/step	-	loss:	3.6401e-04	-	mae:
4s 0.0347175/660	10ms/step	-	loss:	3.6413e-04	-	mae:
4s 0.0347179/660	10ms/step	-	loss:	3.6419e-04	-	mae:
4s 0.0347184/660	10ms/step	-	loss:	3.6413e-04	-	mae:
4s 0.0347189/660	10ms/step	-	loss:	3.6398e-04	-	mae:
4s 0.0347194/660	10ms/step	-	loss:	3.6383e-04	-	mae:
4s 0.0346198/660	10ms/step	-	loss:	3.6369e-04	-	mae:
4s 0.0346203/660	10ms/step	-	loss:	3.6357e-04	-	mae:
4s 0.0346208/660	10ms/step	-	loss:	3.6341e-04	-	mae:
4s 0.0346213/660	10ms/step	-	loss:	3.6328e-04	-	mae:
4s 0.0346218/660	10ms/step	-	loss:	3.6311e-04	-	mae:
4s 0.0346223/660	10ms/step	-	loss:	3.6301e-04	-	mae:
4s 0.0346228/660	10ms/step	-	loss:	3.6297e-04	-	mae:
4s 0.0346232/660	10ms/step	-	loss:	3.6293e-04	-	mae:
4s 0.0346237/660	10ms/step	-	loss:	3.6290e-04	-	mae:
4s 0.0346242/660	10ms/step	-	loss:	3.6286e-04	-	mae:
4s 0.0346247/660	10ms/step	-	loss:	3.6285e-04	-	mae:
4s 0.0346252/660	10ms/step	-	loss:	3.6281e-04	-	mae:
4s 0.0346256/660	11ms/step	-	loss:	3.6275e-04	-	mae:
4s 0.0346260/660	11ms/step	-	loss:	3.6268e-04	-	mae:

Battery SoC Estimation Project Report						
0.0345264/660	4s	11ms/step	-	loss:	3.6262e-04	- mae:
0.0345269/660	4s	11ms/step	-	loss:	3.6260e-04	- mae:
0.0345273/660	4s	11ms/step	-	loss:	3.6257e-04	- mae:
0.0345278/660	4s	11ms/step	-	loss:	3.6255e-04	- mae:
0.0345283/660	4s	11ms/step	-	loss:	3.6251e-04	- mae:
0.0345287/660	4s	11ms/step	-	loss:	3.6243e-04	- mae:
0.0345291/660	3s	11ms/step	-	loss:	3.6234e-04	- mae:
0.0345295/660	3s	11ms/step	-	loss:	3.6226e-04	- mae:
0.0345300/660	3s	11ms/step	-	loss:	3.6216e-04	- mae:
0.0345304/660	3s	11ms/step	-	loss:	3.6203e-04	- mae:
0.0345308/660	3s	11ms/step	-	loss:	3.6194e-04	- mae:
0.0345312/660	3s	11ms/step	-	loss:	3.6185e-04	- mae:
0.0345315/660	3s	11ms/step	-	loss:	3.6175e-04	- mae:
0.0345319/660	3s	11ms/step	-	loss:	3.6168e-04	- mae:
0.0345325/660	3s	11ms/step	-	loss:	3.6159e-04	- mae:
0.0344332/660	3s	11ms/step	-	loss:	3.6146e-04	- mae:
0.0344339/660	3s	11ms/step	-	loss:	3.6132e-04	- mae:
0.0344346/660	3s	11ms/step	-	loss:	3.6115e-04	- mae:
0.0344353/660	3s	11ms/step	-	loss:	3.6096e-04	- mae:
0.0344360/660	3s	11ms/step	-	loss:	3.6076e-04	- mae:
0.0343367/660	3s	11ms/step	-	loss:	3.6053e-04	- mae:
0.0343374/660	3s	11ms/step	-	loss:	3.6029e-04	- mae:
0.0343380/660	2s	11ms/step	-	loss:	3.6002e-04	- mae:
0.0343387/660	2s	11ms/step	-	loss:	3.5978e-04	- mae:
0.0342393/660	2s	11ms/step	-	loss:	3.5951e-04	- mae:
0.0342399/660	2s	10ms/step	-	loss:	3.5926e-04	- mae:
0.0342406/660	2s	10ms/step	-	loss:	3.5867e-04	- mae:
0.0342413/660	2s	10ms/step	-	loss:	3.5834e-04	- mae:
0.0341419/660	2s	10ms/step	-	loss:	3.5805e-04	- mae:
0.0341426/660	2s	10ms/step	-	loss:	3.5775e-04	- mae:
0.0341433/660	2s	10ms/step	-	loss:	3.5746e-04	- mae:
0.0341438/660	2s	10ms/step	-	loss:	3.5726e-04	- mae:
0.0340444/660						

Battery SoC Estimation Project Report

2s	10ms/step	-	loss:	3.5702e-04	-	mae:
0.0340451/660						
2s	10ms/step	-	loss:	3.5676e-04	-	mae:
0.0340457/660						
2s	10ms/step	-	loss:	3.5655e-04	-	mae:
0.0340463/660						
2s	10ms/step	-	loss:	3.5635e-04	-	mae:
0.0340470/660						
1s	10ms/step	-	loss:	3.5611e-04	-	mae:
0.0339476/660						
1s	10ms/step	-	loss:	3.5590e-04	-	mae:
0.0339482/660						
1s	10ms/step	-	loss:	3.5567e-04	-	mae:
0.0339488/660						
1s	10ms/step	-	loss:	3.5543e-04	-	mae:
0.0339495/660						
1s	10ms/step	-	loss:	3.5514e-04	-	mae:
0.0338501/660						
1s	10ms/step	-	loss:	3.5489e-04	-	mae:
0.0338508/660						
1s	10ms/step	-	loss:	3.5462e-04	-	mae:
0.0338514/660						
1s	10ms/step	-	loss:	3.5439e-04	-	mae:
0.0338521/660						
1s	10ms/step	-	loss:	3.5411e-04	-	mae:
0.0337528/660						
1s	10ms/step	-	loss:	3.5382e-04	-	mae:
0.0337535/660						
1s	10ms/step	-	loss:	3.5351e-04	-	mae:
0.0337542/660						
1s	10ms/step	-	loss:	3.5321e-04	-	mae:
0.0337548/660						
1s	10ms/step	-	loss:	3.5295e-04	-	mae:
0.0336555/660						
1s	10ms/step	-	loss:	3.5267e-04	-	mae:
0.0336560/660						
0s	10ms/step	-	loss:	3.5247e-04	-	mae:
0.0336567/660						
0s	10ms/step	-	loss:	3.5218e-04	-	mae:
0.0336573/660						
0s	10ms/step	-	loss:	3.5194e-04	-	mae:
0.0335580/660						
0s	10ms/step	-	loss:	3.5165e-04	-	mae:
0.0335587/660						
0s	10ms/step	-	loss:	3.5137e-04	-	mae:
0.0335593/660						
0s	10ms/step	-	loss:	3.5112e-04	-	mae:
0.0335600/660						
0s	10ms/step	-	loss:	3.5085e-04	-	mae:
0.0334607/660						
0s	10ms/step	-	loss:	3.5058e-04	-	mae:
0.0334614/660						
0s	10ms/step	-	loss:	3.5031e-04	-	mae:
0.0334620/660						
0s	10ms/step	-	loss:	3.5008e-04	-	mae:
0.0334627/660						
0s	10ms/step	-	loss:	3.4982e-04	-	mae:
0.0333633/660						
0s	10ms/step	-	loss:	3.4960e-04	-	mae:
0.0333640/660						
0s	10ms/step	-	loss:	3.4936e-04	-	mae:
0.0333646/660						
0s	10ms/step	-	loss:	3.4915e-04	-	mae:
0.0333653/660						
0s	10ms/step	-	loss:	3.4890e-04	-	mae:
0.0333659/660						

Battery SoC Estimation Project Report

0s	10ms/step	-	loss:	3.4869e-04	-	mae:
0.0332660/660						
11s 11ms/step - loss: 3.4862e-04 - mae: 0.0332 - val_loss: 2.9239e-04 - val_mae: 0.0282						
Epoch 68/200						
0.0121	1/660	35:13	3s/step	-	loss:	1.4030e-04
	6/660					-
	8s		12ms/step	-	loss:	1.7492e-04
	11/660					mae: 0.0160
0.0181	7s		12ms/step	-	loss:	1.9425e-04
	16/660					-
0.0202	7s		12ms/step	-	loss:	2.1497e-04
	21/660					-
0.0219	7s		11ms/step	-	loss:	2.3168e-04
	26/660					-
0.0233	7s		11ms/step	-	loss:	2.4514e-04
	31/660					-
0.0243	6s		11ms/step	-	loss:	2.5506e-04
	37/660					-
0.0254	6s		11ms/step	-	loss:	2.6630e-04
	43/660					-
0.0267	6s		11ms/step	-	loss:	2.7909e-04
	49/660					-
0.0277	6s		10ms/step	-	loss:	2.8913e-04
	56/660					-
0.0287	6s		10ms/step	-	loss:	2.9926e-04
	62/660					-
0.0295	5s		10ms/step	-	loss:	3.0692e-04
	68/660					-
0.0301	5s		10ms/step	-	loss:	3.1247e-04
	75/660					-
0.0306	5s		10ms/step	-	loss:	3.1781e-04
	82/660					-
	5s		9ms/step	-	loss:	3.2213e-04
	88/660					mae: 0.0310
0.0313	5s		9ms/step	-	loss:	3.2504e-04
	95/660					-
0.0316101/660	5s		9ms/step	-	loss:	3.2755e-04
						-
0.0317107/660	5s		9ms/step	-	loss:	3.2902e-04
						-
0.0319114/660	4s		9ms/step	-	loss:	3.3034e-04
						-
0.0320120/660	4s		9ms/step	-	loss:	3.3167e-04
						-
0.0321126/660	4s		9ms/step	-	loss:	3.3288e-04
						-
0.0322133/660	4s		9ms/step	-	loss:	3.3403e-04
						-
0.0323140/660	4s		9ms/step	-	loss:	3.3497e-04
						-
0.0324147/660	4s		9ms/step	-	loss:	3.3568e-04
						-
0.0325154/660	4s		9ms/step	-	loss:	3.3616e-04
						-
0.0325160/660	4s		9ms/step	-	loss:	3.3653e-04
						-
0.0325165/660	4s		9ms/step	-	loss:	3.3672e-04
						-
0.0325171/660	4s		9ms/step	-	loss:	3.3675e-04
						-
0.0325178/660	4s		9ms/step	-	loss:	3.3680e-04
						-
0.0325185/660	4s		9ms/step	-	loss:	3.3675e-04
						-
0.0325192/660	4s		9ms/step	-	loss:	3.3654e-04
						mae:

Battery SoC Estimation Project Report						
0.0325198/660	4s	9ms/step	-	loss:	3.3637e-04	- mae:
0.0325205/660	4s	9ms/step	-	loss:	3.3619e-04	- mae:
0.0324212/660	4s	9ms/step	-	loss:	3.3599e-04	- mae:
0.0324218/660	3s	9ms/step	-	loss:	3.3580e-04	- mae:
0.0324224/660	3s	9ms/step	-	loss:	3.3572e-04	- mae:
0.0324230/660	3s	9ms/step	-	loss:	3.3573e-04	- mae:
0.0324236/660	3s	9ms/step	-	loss:	3.3573e-04	- mae:
0.0324242/660	3s	9ms/step	-	loss:	3.3575e-04	- mae:
0.0324249/660	3s	9ms/step	-	loss:	3.3581e-04	- mae:
0.0324255/660	3s	9ms/step	-	loss:	3.3588e-04	- mae:
0.0324262/660	3s	9ms/step	-	loss:	3.3591e-04	- mae:
0.0324269/660	3s	9ms/step	-	loss:	3.3599e-04	- mae:
0.0324276/660	3s	9ms/step	-	loss:	3.3612e-04	- mae:
0.0325283/660	3s	9ms/step	-	loss:	3.3625e-04	- mae:
0.0325288/660	3s	9ms/step	-	loss:	3.3634e-04	- mae:
0.0325295/660	3s	9ms/step	-	loss:	3.3638e-04	- mae:
0.0325302/660	3s	9ms/step	-	loss:	3.3642e-04	- mae:
0.0325309/660	3s	9ms/step	-	loss:	3.3644e-04	- mae:
0.0325315/660	2s	9ms/step	-	loss:	3.3645e-04	- mae:
0.0325322/660	2s	9ms/step	-	loss:	3.3643e-04	- mae:
0.0324329/660	2s	9ms/step	-	loss:	3.3641e-04	- mae:
0.0324336/660	2s	9ms/step	-	loss:	3.3638e-04	- mae:
0.0324342/660	2s	9ms/step	-	loss:	3.3634e-04	- mae:
0.0324348/660	2s	9ms/step	-	loss:	3.3628e-04	- mae:
0.0324354/660	2s	9ms/step	-	loss:	3.3621e-04	- mae:
0.0324361/660	2s	9ms/step	-	loss:	3.3610e-04	- mae:
0.0324368/660	2s	9ms/step	-	loss:	3.3597e-04	- mae:
0.0324375/660	2s	9ms/step	-	loss:	3.3582e-04	- mae:
0.0323382/660	2s	9ms/step	-	loss:	3.3566e-04	- mae:
0.0323387/660	2s	9ms/step	-	loss:	3.3555e-04	- mae:
0.0323392/660	2s	9ms/step	-	loss:	3.3543e-04	- mae:
0.0323396/660	2s	9ms/step	-	loss:	3.3532e-04	- mae:
0.0323401/660						

Battery SoC Estimation Project Report						
0.0323405/660	2s	9ms/step	-	loss:	3.3517e-04	- mae:
0.0323409/660	2s	9ms/step	-	loss:	3.3504e-04	- mae:
0.0322413/660	2s	9ms/step	-	loss:	3.3491e-04	- mae:
0.0322417/660	2s	9ms/step	-	loss:	3.3478e-04	- mae:
0.0322422/660	2s	9ms/step	-	loss:	3.3464e-04	- mae:
0.0322426/660	2s	9ms/step	-	loss:	3.3447e-04	- mae:
0.0322430/660	2s	9ms/step	-	loss:	3.3434e-04	- mae:
0.0322435/660	2s	9ms/step	-	loss:	3.3422e-04	- mae:
0.0321440/660	1s	9ms/step	-	loss:	3.3390e-04	- mae:
0.0321445/660	1s	9ms/step	-	loss:	3.3374e-04	- mae:
0.0321450/660	1s	9ms/step	-	loss:	3.3359e-04	- mae:
0.0321455/660	1s	9ms/step	-	loss:	3.3343e-04	- mae:
0.0321459/660	1s	9ms/step	-	loss:	3.3331e-04	- mae:
0.0320469/660	1s	9ms/step	-	loss:	3.3316e-04	- mae:
0.0320474/660	1s	9ms/step	-	loss:	3.3301e-04	- mae:
0.0320479/660	1s	9ms/step	-	loss:	3.3286e-04	- mae:
0.0320484/660	1s	9ms/step	-	loss:	3.3269e-04	- mae:
0.0320489/660	1s	9ms/step	-	loss:	3.3252e-04	- mae:
0.0320493/660	1s	9ms/step	-	loss:	3.3235e-04	- mae:
0.0319497/660	1s	9ms/step	-	loss:	3.3221e-04	- mae:
0.0319502/660	1s	9ms/step	-	loss:	3.3207e-04	- mae:
0.0319507/660	1s	9ms/step	-	loss:	3.3189e-04	- mae:
0.0319511/660	1s	9ms/step	-	loss:	3.3173e-04	- mae:
0.0319515/660	1s	9ms/step	-	loss:	3.3160e-04	- mae:
0.0319519/660	1s	10ms/step	-	loss:	3.3131e-04	- mae:
0.0318523/660	1s	10ms/step	-	loss:	3.3116e-04	- mae:
0.0318528/660	1s	10ms/step	-	loss:	3.3098e-04	- mae:
0.0318532/660	1s	10ms/step	-	loss:	3.3082e-04	- mae:
0.0318537/660	1s	10ms/step	-	loss:	3.3063e-04	- mae:
0.0318541/660	1s	10ms/step	-	loss:	3.3047e-04	- mae:
0.0318545/660	1s	10ms/step	-	loss:	3.3032e-04	- mae:
0.0317550/660						

Battery SoC Estimation Project Report

0.0317554/660	1s	10ms/step	-	loss:	3.3012e-04	-	mae:
	1s	10ms/step	-	loss:	3.2998e-04	-	mae:
0.0317558/660	0s	10ms/step	-	loss:	3.2983e-04	-	mae:
0.0317562/660	0s	10ms/step	-	loss:	3.2968e-04	-	mae:
0.0317566/660	0s	10ms/step	-	loss:	3.2953e-04	-	mae:
0.0317570/660	0s	10ms/step	-	loss:	3.2939e-04	-	mae:
0.0316576/660	0s	10ms/step	-	loss:	3.2918e-04	-	mae:
0.0316581/660	0s	10ms/step	-	loss:	3.2900e-04	-	mae:
0.0316587/660	0s	10ms/step	-	loss:	3.2878e-04	-	mae:
0.0316593/660	0s	10ms/step	-	loss:	3.2857e-04	-	mae:
0.0316600/660	0s	10ms/step	-	loss:	3.2833e-04	-	mae:
0.0315606/660	0s	10ms/step	-	loss:	3.2814e-04	-	mae:
0.0315612/660	0s	10ms/step	-	loss:	3.2794e-04	-	mae:
0.0315619/660	0s	10ms/step	-	loss:	3.2772e-04	-	mae:
0.0315625/660	0s	10ms/step	-	loss:	3.2752e-04	-	mae:
0.0315632/660	0s	10ms/step	-	loss:	3.2731e-04	-	mae:
0.0314639/660	0s	10ms/step	-	loss:	3.2712e-04	-	mae:
0.0314646/660	0s	10ms/step	-	loss:	3.2692e-04	-	mae:
0.0314652/660	0s	10ms/step	-	loss:	3.2675e-04	-	mae:
0.0314658/660	0s	10ms/step	-	loss:	3.2658e-04	-	mae:
0.0314660/660							

10s 11ms/step - loss: 3.2650e-04 - mae: 0.0314 - val_loss: 2.4558e-04 - val_mae: 0.0235
 Best LSTM model retraining complete and saved.

--- Training XGBoost Corrector (Stage 2) ---

1/660	1:37	148ms/step	12/660
2s	5ms/step		23/660
2s	5ms/step		35/660
2s	5ms/step		47/660
2s	5ms/step		59/660
2s	4ms/step		75/660
2s	4ms/step		91/660
2s	4ms/step	107/660	
2s	4ms/step	124/660	
2s	4ms/step	144/660	
1s	4ms/step	164/660	
1s	3ms/step	184/660	
1s	3ms/step	204/660	
1s	3ms/step	223/660	
1s	3ms/step	243/660	
1s	3ms/step	263/660	
1s	3ms/step	283/660	
1s	3ms/step	303/660	
1s	3ms/step	323/660	
1s	3ms/step	342/660	
0s	3ms/step	362/660	
0s	3ms/step	378/660	

0s 3ms/step397/660
0s 3ms/step415/660
0s 3ms/step433/660
0s 3ms/step453/660
0s 3ms/step473/660
0s 3ms/step493/660
0s 3ms/step513/660
0s 3ms/step532/660
0s 3ms/step552/660
0s 3ms/step572/660
0s 3ms/step591/660
0s 3ms/step609/660
0s 3ms/step629/660
0s 3ms/step649/660
0s 3ms/step660/660
0s 3ms/step660/660

2s 3ms/step

[DEBUG] Residuals_train (before filtering) stats:

Min: -97.2634, Max: 101.7761, Mean: 0.0537, Std: 10.6923

XGBoost Sample Weights (by bin based on XGBOOST_MID_SOC_WEIGHT):

- Mid-SoC (30.0-80.0%): weight x 1.5

- Other regions: weight x 1.0

1/97 1s 17ms/step20/97
0s 3ms/step 40/97
0s 3ms/step60/97
0s 3ms/step80/97
0s 3ms/step97/97

0s 3ms/step

1/97 1s 18ms/step20/97
0s 3ms/step 40/97
0s 3ms/step59/97
0s 3ms/step79/97
0s 3ms/step97/97

0s 3ms/step

[DEBUG] Residuals_train_filtered (after filtering) stats:

Shape: (21097,)

Min: -97.2634, Max: 101.7761, Mean: 0.0537, Std: 10.6923

Using residual learning mode for XGBoost (predicting errors).

XGBoost Corrector model saved to: xgboost_corrector.json

--- Phase 3: Evaluating the Trained Model ---

1/97 1s 17ms/step21/97
0s 3ms/step 38/97
0s 3ms/step54/97
0s 3ms/step74/97
0s 3ms/step93/97
0s 3ms/step97/97

0s 3ms/step

--- Debugging Evaluation Values (Post-Inverse Transform) ---

y_true_unscaled stats: Min=0.0000, Max=91.2527, Mean=41.8099

y_pred_lstm_unscaled (clipped) stats: Min=0.0000, Max=92.0961, Mean=41.2706

--- Performance for Scenario: LSTM Only ---

Mean Absolute Error (MAE): 4.62 %SoC (0.046155 0-1 Scale)

Root Mean Squared Error (RMSE): 14.72 %SoC (0.147185 0-1 Scale)

R-squared (R^2): 0.8716

--- Classification Metrics for LSTM Only ---

True samples per bin (for LSTM Only): {'Low': 1531, 'Mid': 123, 'High': 1423}

F1-Score (binned SoC, weighted average): 0.9520

Confusion Matrix plot for LSTM Only saved.

--- Performance for Scenario: LSTM + XGBoost Corrected ---

XGBoost correction applied as residual learning.

Battery SoC Estimation Project Report

[DEBUG] LSTM base prediction (raw unclipped): [31.23491 31.131947 31.024944 30.929655 30.853355]

[DEBUG] XGBoost predicted residual: [0.16295551 0.16295551 0.16295551 0.16295551 0.16295551]

[DEBUG] Final corrected prediction (clipped): [31.397865 31.294903 31.1879 31.092611 31.016312]

Mean Absolute Error (MAE): 3.46 %SoC (0.034610 0-1 Scale)

Root Mean Squared Error (RMSE): 10.70 %SoC (0.106958 0-1 Scale)

R-squared (R²): 0.9322

--- Classification Metrics for LSTM + XGBoost Corrected ---

True samples per bin (for LSTM + XGBoost Corrected): {'Low': 1531, 'Mid': 123, 'High': 1423}

F1-Score (binned SoC, weighted average): 0.9588

Confusion Matrix plot for LSTM + XGBoost Corrected saved.

--- Visualizing Model Performance Plots ---

--- Visualizing Predicted SoC vs. Input Features (Characteristic Curves) ---

--- Visualizing Prediction Error vs. Input Features ---

--- Visualizing Error Distribution (Histogram of Residuals) ---

--- Phase 4: Demonstrating Rolling Prediction (100 steps) ---

[DEBUG] Feature min range:

Current_A 0.000000e+00
Voltage_V 4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.326515e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage -1.169900e-01
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

[DEBUG] Feature max range:

Current_A 0.000000e+00
Voltage_V 4.188490e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.332626e+06
Capacity_Ah 2.347170e+00
Energy_Wh 9.269990e+00
Count_# 7.000000e+00
Delta_Voltage 8.400000e-04
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188490e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

1/1 0s 40ms/step1/1

0s 60ms/step

[DEBUG] Feature min range:

Current_A 0.000000e+00

Battery SoC Estimation Project Report

```
Voltage_V           4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.326515e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -1.169900e-01
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A           0.000000e+00
Voltage_V           4.188490e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.332626e+06
Capacity_Ah         2.347170e+00
Energy_Wh           9.269990e+00
Count_#             7.000000e+00
Delta_Voltage       8.400000e-04
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188490e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A           0.000000e+00
Voltage_V           4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.326575e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -1.169900e-01
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A           0.000000e+00
Voltage_V           4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
```

Battery SoC Estimation Project Report

```
Time_Seconds      3.332686e+06
Capacity_Ah       2.347170e+00
Energy_Wh         9.269990e+00
Count_#          7.000000e+00
Delta_Voltage     8.400000e-04
Delta_Current     0.000000e+00
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188405e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

1/1 0s 30ms/step1/1

0s 51ms/step

[DEBUG] Feature min range:

```
Current_A        0.000000e+00
Voltage_V        4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.326575e+06
Capacity_Ah     0.000000e+00
Energy_Wh       0.000000e+00
Count_#         7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A        0.000000e+00
Voltage_V        4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.332686e+06
Capacity_Ah     2.347170e+00
Energy_Wh       9.269990e+00
Count_#         7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188405e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A        0.000000e+00
Voltage_V        4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.326635e+06
```

```

Capacity_Ah      0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A       0.000000e+00
Voltage_V       4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.332746e+06
Capacity_Ah     2.347170e+00
Energy_Wh       9.269990e+00
Count_#        7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188320e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

1/1 0s 33ms/step1/1
0s 54ms/step

[DEBUG] Feature min range:

```

Current_A       0.000000e+00
Voltage_V       4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.326635e+06
Capacity_Ah     0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A       0.000000e+00
Voltage_V       4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.332746e+06
Capacity_Ah     2.347170e+00

```

```

Energy_Wh      9.269990e+00
Count_#        7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188320e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.326695e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W        0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      0.000000e+00
Voltage_V      4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.332806e+06
Capacity_Ah    2.347170e+00
Energy_Wh      9.269990e+00
Count_#        7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188320e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

1/1 Os 21ms/step1/1

Os 32ms/step

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.326695e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00

```

```

Count_#      7.000000e+00
Delta_Voltage -1.169900e-01
Delta_Current 0.000000e+00
Power_W      0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      0.000000e+00
Voltage_V       4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.332806e+06
Capacity_Ah    2.347170e+00
Energy_Wh      9.269990e+00
Count_#        7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188320e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V       4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.326755e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W        0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      0.000000e+00
Voltage_V       4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.332866e+06
Capacity_Ah    2.347170e+00
Energy_Wh      9.269990e+00
Count_#        7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00

```

```

Power_W          0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188320e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1           0s      20ms/step1/1
0s 32ms/step
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.326755e+06
Capacity_Ah      0.000000e+00
Energy_Wh        0.000000e+00
Count_#          7.000000e+00
Delta_Voltage    -1.169900e-01
Delta_Current    0.000000e+00
Power_W          0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A        0.000000e+00
Voltage_V        4.188320e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.332866e+06
Capacity_Ah      2.347170e+00
Energy_Wh        9.269990e+00
Count_#          7.000000e+00
Delta_Voltage    8.400000e-04
Delta_Current    0.000000e+00
Power_W          0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188320e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.326815e+06
Capacity_Ah      0.000000e+00
Energy_Wh        0.000000e+00
Count_#          7.000000e+00
Delta_Voltage    -1.169900e-01
Delta_Current    0.000000e+00
Power_W          0.000000e+00

```

```

Voltage_Temp_Corrected      3.951088e+00
Delta_Cell_Temperature     -1.682540e+00
Rolling_Avg_Voltage_V      4.071876e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332926e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188235e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
0s 29ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.326815e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332926e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00

```

```

Delta_Cell_Temperature    3.680550e+00
Rolling_Avg_Voltage_V    4.188235e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

```

[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.326875e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

```

[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332986e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

1/1 Os 17ms/step1/1

Os 29ms/step

```

[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.326875e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00

```

```

Rolling_Avg_Voltage_V      4.071876e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

```

[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332986e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

```

[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.326935e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

```

[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333046e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00

```

Battery SoC Estimation Project Report

```
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
0s 34ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.326935e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current       0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333046e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current       0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.326995e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current       0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
```

Battery SoC Estimation Project Report

```
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 0.000000e+00
Voltage_V 4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.333106e+06
Capacity_Ah 2.347170e+00
Energy_Wh 9.269990e+00
Count_# 7.000000e+00
Delta_Voltage 8.400000e-04
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1 Os 27ms/step1/1
Os 40ms/step
[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.326995e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage -1.169900e-01
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202087e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 0.000000e+00
Voltage_V 4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.333106e+06
Capacity_Ah 2.347170e+00
Energy_Wh 9.269990e+00
Count_# 7.000000e+00
Delta_Voltage 8.400000e-04
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
```

Battery SoC Estimation Project Report

```
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.327055e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202003e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333166e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1 Os 17ms/step1/1
Os 29ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.327055e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202003e+00
Last_Current_Sign_Change 0.000000e+00
```

```

dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.188150e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333166e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current       0.000000e+00
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188150e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.327115e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current       0.000000e+00
Power_W             0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202003e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.187990e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333226e+06
Capacity_Ah        2.347170e+00
Energy_Wh          9.269990e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current       0.000000e+00
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.188070e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
0s 29ms/step

```

Battery SoC Estimation Project Report

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.070830e+00
Cell_Temperature_C	-5.257900e-01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.327115e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-1.169900e-01
Delta_Current	0.000000e+00
Power_W	0.000000e+00
Voltage_Temp_Corrected	3.951088e+00
Delta_Cell_Temperature	-1.682540e+00
Rolling_Avg_Voltage_V	4.071876e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	-2.202003e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	0.000000e+00
Voltage_V	4.187990e+00
Cell_Temperature_C	2.418646e+01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.333226e+06
Capacity_Ah	2.347170e+00
Energy_Wh	9.269990e+00
Count_#	7.000000e+00
Delta_Voltage	8.400000e-04
Delta_Current	0.000000e+00
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.074692e+00
Delta_Cell_Temperature	3.680550e+00
Rolling_Avg_Voltage_V	4.188070e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	9.865077e+01
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.070830e+00
Cell_Temperature_C	-5.257900e-01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.327175e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-1.169900e-01
Delta_Current	0.000000e+00
Power_W	0.000000e+00
Voltage_Temp_Corrected	3.951088e+00
Delta_Cell_Temperature	-1.682540e+00
Rolling_Avg_Voltage_V	4.071876e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	-2.202003e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	0.000000e+00
Voltage_V	4.187990e+00

```

Cell_Temperature_C      2.418646e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.333286e+06
Capacity_Ah            2.347170e+00
Energy_Wh              9.269990e+00
Count_#                7.000000e+00
Delta_Voltage           8.400000e-04
Delta_Current           0.000000e+00
Power_W                 0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature  3.680550e+00
Rolling_Avg_Voltage_V  4.187990e+00
Rolling_Avg_Current_A   0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

1/1 0s 16ms/step1/1

0s 28ms/step

[DEBUG] Feature min range:

```

Current_A               0.000000e+00
Voltage_V               4.070830e+00
Cell_Temperature_C      -5.257900e-01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.327175e+06
Capacity_Ah            0.000000e+00
Energy_Wh              0.000000e+00
Count_#                7.000000e+00
Delta_Voltage           -1.169900e-01
Delta_Current           0.000000e+00
Power_W                 0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature  -1.682540e+00
Rolling_Avg_Voltage_V  4.071876e+00
Rolling_Avg_Current_A   0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202003e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A               0.000000e+00
Voltage_V               4.187990e+00
Cell_Temperature_C      2.418646e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.333286e+06
Capacity_Ah            2.347170e+00
Energy_Wh              9.269990e+00
Count_#                7.000000e+00
Delta_Voltage           8.400000e-04
Delta_Current           0.000000e+00
Power_W                 0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature  3.680550e+00
Rolling_Avg_Voltage_V  4.187990e+00
Rolling_Avg_Current_A   0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A               0.000000e+00
Voltage_V               4.070830e+00
Cell_Temperature_C      -5.257900e-01

```

Battery SoC Estimation Project Report

```
Ambient_Temperature_C      0.000000e+00
Time_Seconds              3.327235e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage             -1.169900e-01
Delta_Current              0.000000e+00
Power_W                    0.000000e+00
Voltage_Temp_Corrected    3.951088e+00
Delta_Cell_Temperature     -1.682540e+00
Rolling_Avg_Voltage_V     4.071876e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202003e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  0.000000e+00
Voltage_V                  4.187990e+00
Cell_Temperature_C          2.418646e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.333346e+06
Capacity_Ah                2.347170e+00
Energy_Wh                  9.269990e+00
Count_#                   7.000000e+00
Delta_Voltage             8.400000e-04
Delta_Current              0.000000e+00
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.074692e+00
Delta_Cell_Temperature     3.680550e+00
Rolling_Avg_Voltage_V     4.187990e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

1/1 Os 16ms/step1/1

Os 28ms/step

[DEBUG] Feature min range:

```
Current_A                  0.000000e+00
Voltage_V                  4.070830e+00
Cell_Temperature_C          -5.257900e-01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.327235e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage             -1.169900e-01
Delta_Current              0.000000e+00
Power_W                    0.000000e+00
Voltage_Temp_Corrected    3.951088e+00
Delta_Cell_Temperature     -1.682540e+00
Rolling_Avg_Voltage_V     4.071876e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.202003e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  0.000000e+00
Voltage_V                  4.187990e+00
Cell_Temperature_C          2.418646e+01
Ambient_Temperature_C       0.000000e+00
```

```

Time_Seconds      3.333346e+06
Capacity_Ah       2.347170e+00
Energy_Wh         9.269990e+00
Count_#          7.000000e+00
Delta_Voltage     8.400000e-04
Delta_Current     0.000000e+00
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.187990e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V         4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.327295e+06
Capacity_Ah       0.000000e+00
Energy_Wh         0.000000e+00
Count_#          7.000000e+00
Delta_Voltage     -1.169900e-01
Delta_Current     0.000000e+00
Power_W           0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.201914e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A        0.000000e+00
Voltage_V         4.187990e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.333406e+06
Capacity_Ah       2.347170e+00
Energy_Wh         9.269990e+00
Count_#          7.000000e+00
Delta_Voltage     8.400000e-04
Delta_Current     0.000000e+00
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.187990e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1 Os 16ms/step1/1
Os 28ms/step
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V         4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.327295e+06

```

```

Capacity_Ah      0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.201914e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      0.000000e+00
Voltage_V       4.187990e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.333406e+06
Capacity_Ah     2.347170e+00
Energy_Wh       9.269990e+00
Count_#        7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.187990e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V       4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.327355e+06
Capacity_Ah     0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.201914e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      0.000000e+00
Voltage_V       4.187820e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.333466e+06
Capacity_Ah     2.347170e+00
Energy_Wh       9.269990e+00
Count_#        7.000000e+00

```

```

Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W           0.000000e+00
Voltage_Temp_Corrected  4.074692e+00
Delta_Cell_Temperature  3.680550e+00
Rolling_Avg_Voltage_V   4.187905e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  0.000000e+00
Voltage_x_Cell_Temperature  9.865077e+01
Last_Current_Sign_Change    0.000000e+00
dtype: float64
1/1 Os 16ms/step1/1
Os 29ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C  0.000000e+00
Time_Seconds       3.327355e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected  3.951088e+00
Delta_Cell_Temperature  -1.682540e+00
Rolling_Avg_Voltage_V   4.071876e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  0.000000e+00
Voltage_x_Cell_Temperature  -2.201914e+00
Last_Current_Sign_Change    0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.187820e+00
Cell_Temperature_C  2.418646e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds       3.333466e+06
Capacity_Ah         2.347170e+00
Energy_Wh           9.269990e+00
Count_#             7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected  4.074692e+00
Delta_Cell_Temperature  3.680550e+00
Rolling_Avg_Voltage_V   4.187905e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  0.000000e+00
Voltage_x_Cell_Temperature  9.865077e+01
Last_Current_Sign_Change    0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C  0.000000e+00
Time_Seconds       3.327355e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage      -1.169900e-01

```

```

Delta_Current      0.000000e+00
Power_W           0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.201914e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A        0.000000e+00
Voltage_V        4.187820e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.333526e+06
Capacity_Ah     2.347170e+00
Energy_Wh       9.269990e+00
Count_#         7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.187820e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

1/1 Os 21ms/step1/1

Os 37ms/step

[DEBUG] Feature min range:

```

Current_A        0.000000e+00
Voltage_V        4.070830e+00
Cell_Temperature_C -5.257900e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.327355e+06
Capacity_Ah     0.000000e+00
Energy_Wh       0.000000e+00
Count_#         7.000000e+00
Delta_Voltage   -1.169900e-01
Delta_Current   0.000000e+00
Power_W         0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature -2.201914e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A        0.000000e+00
Voltage_V        4.187820e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.333526e+06
Capacity_Ah     2.347170e+00
Energy_Wh       9.269990e+00
Count_#         7.000000e+00
Delta_Voltage   8.400000e-04
Delta_Current   0.000000e+00

```

```

Power_W          0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.187820e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C 1.051590e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330046e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.951088e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071876e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.280844e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.079260e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333586e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      8.400000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.129325e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

1/1 Os 17ms/step1/1
Os 29ms/step

[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.070830e+00
Cell_Temperature_C 1.051590e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330046e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -1.169900e-01
Delta_Current      0.000000e+00
Power_W            0.000000e+00

```

Battery SoC Estimation Project Report

```
Voltage_Temp_Corrected      3.951088e+00
Delta_Cell_Temperature     -1.682540e+00
Rolling_Avg_Voltage_V      4.071876e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.280844e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V           4.079260e+00
Cell_Temperature_C  2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333586e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       8.400000e-04
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V  4.129325e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.071340e+00
Cell_Temperature_C  4.206340e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330106e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 3.967372e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V  4.071085e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.712544e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V           4.079260e+00
Cell_Temperature_C  2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333586e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       8.400000e-04
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V  4.079260e+00
```

```

Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
1/1 Os 16ms/step1/1
Os 28ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.071340e+00
Cell_Temperature_C  4.206340e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330106e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 3.967372e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071085e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.712544e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V           4.079260e+00
Cell_Temperature_C  2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333586e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       8.400000e-04
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.074692e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.865077e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.071840e+00
Cell_Temperature_C  7.676570e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330166e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 3.985223e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071590e+00
Rolling_Avg_Current_A 0.000000e+00

```

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```
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 3.125776e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334186e+06
Capacity_Ah        3.213700e-01
Energy_Wh          1.347650e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.103366e+00
Rolling_Avg_Current_A 1.282160e-01
Cumulative_Capacity_Window 1.210929e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
1/1                  0s           20ms/step1/1
0s 32ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.071840e+00
Cell_Temperature_C 7.676570e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330166e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 3.985223e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.071590e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 3.125776e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334186e+06
Capacity_Ah        3.213700e-01
Energy_Wh          1.347650e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.103366e+00
Rolling_Avg_Current_A 1.282160e-01
Cumulative_Capacity_Window 1.210929e-02
```

```

Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.072350e+00
Cell_Temperature_C 1.114680e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330226e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.003084e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.072095e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.539367e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334246e+06
Capacity_Ah        3.310100e-01
Energy_Wh          1.388140e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.127472e+00
Rolling_Avg_Current_A 2.324240e-01
Cumulative_Capacity_Window 2.195116e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
0s 31ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.072350e+00
Cell_Temperature_C 1.114680e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330226e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.003084e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.072095e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00

```

```

Voltage_x_Cell_Temperature 4.539367e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.334246e+06
Capacity_Ah 3.310100e-01
Energy_Wh 1.388140e+00
Count_# 7.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.127472e+00
Rolling_Avg_Current_A 2.324240e-01
Cumulative_Capacity_Window 2.195116e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.073020e+00
Cell_Temperature_C 1.482735e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.330286e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current -1.200400e-01
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.022157e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.072685e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 6.039209e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.334306e+06
Capacity_Ah 3.388700e-01
Energy_Wh 1.421130e+00
Count_# 7.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 3.680550e+00
Rolling_Avg_Voltage_V 4.151578e+00
Rolling_Avg_Current_A 3.177320e-01
Cumulative_Capacity_Window 3.000802e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 18ms/step1/1
 0s 32ms/step
 [DEBUG] Feature min range:
 Current_A 0.000000e+00
 Voltage_V 4.073020e+00
 Cell_Temperature_C 1.482735e+01
 Ambient_Temperature_C 0.000000e+00
 Time_Seconds 3.330286e+06
 Capacity_Ah 0.000000e+00
 Energy_Wh 0.000000e+00
 Count_# 7.000000e+00
 Delta_Voltage 0.000000e+00
 Delta_Current -1.200400e-01
 Power_W 0.000000e+00
 Voltage_Temp_Corrected 4.022157e+00
 Delta_Cell_Temperature -1.682540e+00
 Rolling_Avg_Voltage_V 4.072685e+00
 Rolling_Avg_Current_A 0.000000e+00
 Cumulative_Capacity_Window 0.000000e+00
 Current_x_Cell_Temperature 0.000000e+00
 Voltage_x_Cell_Temperature 6.039209e+01
 Last_Current_Sign_Change 0.000000e+00
 dtype: float64

[DEBUG] Feature max range:
 Current_A 6.410800e-01
 Voltage_V 4.199790e+00
 Cell_Temperature_C 2.429162e+01
 Ambient_Temperature_C 0.000000e+00
 Time_Seconds 3.334306e+06
 Capacity_Ah 3.388700e-01
 Energy_Wh 1.421130e+00
 Count_# 7.000000e+00
 Delta_Voltage 1.205300e-01
 Delta_Current 6.410800e-01
 Power_W 2.692401e+00
 Voltage_Temp_Corrected 4.196248e+00
 Delta_Cell_Temperature 3.680550e+00
 Rolling_Avg_Voltage_V 4.151578e+00
 Rolling_Avg_Current_A 3.177320e-01
 Cumulative_Capacity_Window 3.000802e-02
 Current_x_Cell_Temperature 1.557287e+01
 Voltage_x_Cell_Temperature 1.020197e+02
 Last_Current_Sign_Change 1.000000e+00
 dtype: float64

[DEBUG] Feature min range:
 Current_A 0.000000e+00
 Voltage_V 4.073530e+00
 Cell_Temperature_C 1.808727e+01
 Ambient_Temperature_C 0.000000e+00
 Time_Seconds 3.330346e+06
 Capacity_Ah 0.000000e+00
 Energy_Wh 0.000000e+00
 Count_# 7.000000e+00
 Delta_Voltage 0.000000e+00
 Delta_Current -1.200400e-01
 Power_W 0.000000e+00
 Voltage_Temp_Corrected 4.038966e+00
 Delta_Cell_Temperature -1.682540e+00
 Rolling_Avg_Voltage_V 4.073275e+00
 Rolling_Avg_Current_A 0.000000e+00
 Cumulative_Capacity_Window 0.000000e+00
 Current_x_Cell_Temperature 0.000000e+00
 Voltage_x_Cell_Temperature 7.367904e+01
 Last_Current_Sign_Change 0.000000e+00
 dtype: float64

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334366e+06
Capacity_Ah        3.453200e-01
Energy_Wh          1.448240e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 3.259920e+00
Rolling_Avg_Voltage_V 4.175684e+00
Rolling_Avg_Current_A 3.882260e-01
Cumulative_Capacity_Window 3.666579e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 18ms/step1/1
0s 31ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.073530e+00
Cell_Temperature_C 1.808727e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330346e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.038966e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.073275e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 7.367904e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334366e+06
Capacity_Ah        3.453200e-01
Energy_Wh          1.448240e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 3.259920e+00
Rolling_Avg_Voltage_V 4.175684e+00
Rolling_Avg_Current_A 3.882260e-01
Cumulative_Capacity_Window 3.666579e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00

```

```

Voltage_V           4.074370e+00
Cell_Temperature_C 1.955949e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330406e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.047677e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.073950e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 7.970257e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334426e+06
Capacity_Ah         3.506800e-01
Energy_Wh           1.470760e+00
Count_#             7.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.998010e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 4.221383e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 17ms/step1/1

0s 30ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.074370e+00
Cell_Temperature_C 1.955949e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330406e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.047677e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.073950e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 7.970257e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00

```

```

Cell_Temperature_C      2.429162e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds            3.334426e+06
Capacity_Ah             3.506800e-01
Energy_Wh                1.470760e+00
Count_#                  7.000000e+00
Delta_Voltage            1.205300e-01
Delta_Current             6.410800e-01
Power_W                  2.692401e+00
Voltage_Temp_Corrected   4.196248e+00
Delta_Cell_Temperature    1.998010e+00
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 4.221383e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A                0.000000e+00
Voltage_V                 4.074880e+00
Cell_Temperature_C        1.955949e+01
Ambient_Temperature_C     0.000000e+00
Time_Seconds              3.330466e+06
Capacity_Ah               0.000000e+00
Energy_Wh                 0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage              0.000000e+00
Delta_Current              -1.200400e-01
Power_W                   0.000000e+00
Voltage_Temp_Corrected   4.047677e+00
Delta_Cell_Temperature    -1.682540e+00
Rolling_Avg_Voltage_V     4.074625e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 7.970257e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A                6.410800e-01
Voltage_V                 4.199790e+00
Cell_Temperature_C        2.429162e+01
Ambient_Temperature_C     0.000000e+00
Time_Seconds              3.334486e+06
Capacity_Ah               3.551800e-01
Energy_Wh                 1.489640e+00
Count_#                   7.000000e+00
Delta_Voltage              1.205300e-01
Delta_Current              6.410800e-01
Power_W                  2.692401e+00
Voltage_Temp_Corrected   4.196248e+00
Delta_Cell_Temperature    1.998010e+00
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 4.689356e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

1/1 0s 19ms/step1/1

0s 32ms/step

[DEBUG] Feature min range:

```

Current_A                0.000000e+00
Voltage_V                 4.074880e+00
Cell_Temperature_C        1.955949e+01

```

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```
Ambient_Temperature_C      0.000000e+00
Time_Seconds              3.330466e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage              0.000000e+00
Delta_Current              -1.200400e-01
Power_W                     0.000000e+00
Voltage_Temp_Corrected    4.047677e+00
Delta_Cell_Temperature     -1.682540e+00
Rolling_Avg_Voltage_V     4.074625e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 7.970257e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  6.410800e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.429162e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.334486e+06
Capacity_Ah                3.551800e-01
Energy_Wh                  1.489640e+00
Count_#                   7.000000e+00
Delta_Voltage              1.205300e-01
Delta_Current              6.410800e-01
Power_W                     2.692401e+00
Voltage_Temp_Corrected    4.196248e+00
Delta_Cell_Temperature     1.998010e+00
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 4.689356e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A                  0.000000e+00
Voltage_V                  4.075550e+00
Cell_Temperature_C          1.966465e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.330526e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage              0.000000e+00
Delta_Current              -1.200400e-01
Power_W                     0.000000e+00
Voltage_Temp_Corrected    4.048873e+00
Delta_Cell_Temperature     -1.682540e+00
Rolling_Avg_Voltage_V     4.075215e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.014426e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  6.410800e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.429162e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.334546e+06
Capacity_Ah                3.589700e-01
```

```

Energy_Wh      1.505570e+00
Count_#        7.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W         2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.998010e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.084964e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 24ms/step1/1

0s 42ms/step

[DEBUG] Feature min range:

```

Current_A        0.000000e+00
Voltage_V        4.075550e+00
Cell_Temperature_C 1.966465e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.330526e+06
Capacity_Ah     0.000000e+00
Energy_Wh        0.000000e+00
Count_#          7.000000e+00
Delta_Voltage    0.000000e+00
Delta_Current    -1.200400e-01
Power_W          0.000000e+00
Voltage_Temp_Corrected 4.048873e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.075215e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.014426e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A        6.410800e-01
Voltage_V        4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.334546e+06
Capacity_Ah     3.589700e-01
Energy_Wh        1.505570e+00
Count_#          7.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.998010e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.084964e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A        0.000000e+00
Voltage_V        4.076060e+00
Cell_Temperature_C 2.113686e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.330586e+06
Capacity_Ah     0.000000e+00
Energy_Wh        0.000000e+00

```

```

Count_#      7.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current -1.200400e-01
Power_W      0.000000e+00
Voltage_Temp_Corrected 4.057584e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.075805e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.617286e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.334606e+06
Capacity_Ah    3.621900e-01
Energy_Wh      1.519080e+00
Count_#        7.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.998010e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.417843e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 18ms/step1/1

0s 33ms/step

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.076060e+00
Cell_Temperature_C 2.113686e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.330586e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   0.000000e+00
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.057584e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.075805e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.617286e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.334606e+06
Capacity_Ah    3.621900e-01
Energy_Wh      1.519080e+00
Count_#        7.000000e+00

```

```

Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W           2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature  1.998010e+00
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window  5.417843e-02
Current_x_Cell_Temperature  1.557287e+01
Voltage_x_Cell_Temperature  1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.076560e+00
Cell_Temperature_C 2.113686e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330646e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected  4.057584e+00
Delta_Cell_Temperature  -1.682540e+00
Rolling_Avg_Voltage_V  4.076310e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  0.000000e+00
Voltage_x_Cell_Temperature  8.617286e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334666e+06
Capacity_Ah        3.649500e-01
Energy_Wh          1.530660e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature  1.682530e+00
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window  5.707316e-02
Current_x_Cell_Temperature  1.557287e+01
Voltage_x_Cell_Temperature  1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

1/1 0s 23ms/step1/1

0s 42ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.076560e+00
Cell_Temperature_C 2.113686e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330646e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00

```

```

Delta_Current      -1.200400e-01
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.057584e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.076310e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.617286e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334666e+06
Capacity_Ah        3.649500e-01
Energy_Wh          1.530660e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.682530e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.707316e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.076900e+00
Cell_Temperature_C 2.113686e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330706e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current       -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.057584e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.076730e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.617286e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334726e+06
Capacity_Ah        3.673400e-01
Energy_Wh          1.540700e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00

```

```

Delta_Cell_Temperature    1.682530e+00
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A    4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
1/1 0s 18ms/step1/1
0s 31ms/step
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.076900e+00
Cell_Temperature_C 2.113686e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.330706e+06
Capacity_Ah      0.000000e+00
Energy_Wh        0.000000e+00
Count_#          7.000000e+00
Delta_Voltage    0.000000e+00
Delta_Current    -1.200400e-01
Power_W          0.000000e+00
Voltage_Temp_Corrected 4.057584e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.076730e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.617286e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A        6.410800e-01
Voltage_V        4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.334726e+06
Capacity_Ah      3.673400e-01
Energy_Wh        1.540700e+00
Count_#          7.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.682530e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.077070e+00
Cell_Temperature_C 2.176782e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.330766e+06
Capacity_Ah      0.000000e+00
Energy_Wh        0.000000e+00
Count_#          7.000000e+00
Delta_Voltage    0.000000e+00
Delta_Current    -1.200400e-01
Power_W          0.000000e+00
Voltage_Temp_Corrected 4.060909e+00
Delta_Cell_Temperature -1.682540e+00

```

```

Rolling_Avg_Voltage_V      4.076985e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.874893e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

```

[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.334786e+06
Capacity_Ah         3.694200e-01
Energy_Wh           1.549450e+00
Count_#             7.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.682530e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

1/1 0s 17ms/step1/1
0s 29ms/step

```

[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.077070e+00
Cell_Temperature_C  2.176782e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.330766e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.060909e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.076985e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.874893e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

```

[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.334786e+06
Capacity_Ah         3.694200e-01
Energy_Wh           1.549450e+00
Count_#             7.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.682530e+00
Rolling_Avg_Voltage_V 4.199790e+00

```

```

Rolling_Avg_Current_A      4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.077410e+00
Cell_Temperature_C 2.208329e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330826e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.063156e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.077240e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.004991e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334846e+06
Capacity_Ah        3.712400e-01
Energy_Wh          1.557110e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.682530e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
1/1 Os 18ms/step1/1
Os 34ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.077410e+00
Cell_Temperature_C 2.208329e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330826e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.063156e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.077240e+00
Rolling_Avg_Current_A 0.000000e+00

```

```

Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.004991e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334846e+06
Capacity_Ah        3.712400e-01
Energy_Wh          1.557110e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.682530e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.077580e+00
Cell_Temperature_C 2.208329e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330886e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.063156e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.077495e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.004991e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334906e+06
Capacity_Ah        3.728500e-01
Energy_Wh          1.563870e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02

```

```
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 16ms/step1/1
0s 29ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.077580e+00
Cell_Temperature_C 2.208329e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330886e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.063156e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.077495e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.004991e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334906e+06
Capacity_Ah        3.728500e-01
Energy_Wh          1.563870e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.077740e+00
Cell_Temperature_C 2.208329e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330946e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.063156e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.077660e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.004991e+01
Last_Current_Sign_Change 0.000000e+00
```

Battery SoC Estimation Project Report

```
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334966e+06
Capacity_Ah        3.742700e-01
Energy_Wh          1.569830e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1                 0s           25ms/step1/1
0s 43ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.077740e+00
Cell_Temperature_C 2.208329e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.330946e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.063156e+00
Delta_Cell_Temperature -1.682540e+00
Rolling_Avg_Voltage_V 4.077660e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.004991e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334966e+06
Capacity_Ah        3.742700e-01
Energy_Wh          1.569830e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

Battery SoC Estimation Project Report

[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.077910e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.331006e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current -1.200400e-01
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.077825e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.335026e+06
Capacity_Ah 3.755300e-01
Energy_Wh 1.575100e+00
Count_# 7.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

1/1 0s 18ms/step1/1

0s 32ms/step

[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.077910e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.331006e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current -1.200400e-01
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.077825e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

[DEBUG] Feature max range:

Battery SoC Estimation Project Report

```
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335026e+06
Capacity_Ah        3.755300e-01
Energy_Wh          1.575100e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078080e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331066e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.077995e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335086e+06
Capacity_Ah        3.766400e-01
Energy_Wh          1.579790e+00
Count_#            7.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 18ms/step1/1
Os 30ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
```

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```
Voltage_V           4.078080e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331066e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.077995e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335086e+06
Capacity_Ah         3.766400e-01
Energy_Wh           1.579790e+00
Count_#             7.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 1.261910e+00
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.078250e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331126e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.078165e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
```

```

Time_Seconds      3.335146e+06
Capacity_Ah       3.776600e-01
Energy_Wh         1.584050e+00
Count_#          7.000000e+00
Delta_Voltage     1.205300e-01
Delta_Current     6.410800e-01
Power_W           2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 8.412700e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
0s 30ms/step
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V         4.078250e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.331126e+06
Capacity_Ah       0.000000e+00
Energy_Wh         0.000000e+00
Count_#          7.000000e+00
Delta_Voltage     0.000000e+00
Delta_Current     -1.200400e-01
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.078165e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A        6.410800e-01
Voltage_V         4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.335146e+06
Capacity_Ah       3.776600e-01
Energy_Wh         1.584050e+00
Count_#          7.000000e+00
Delta_Voltage     1.205300e-01
Delta_Current     6.410800e-01
Power_W           2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 8.412700e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V         4.078250e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.331186e+06

```

```

Capacity_Ah      0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   0.000000e+00
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.078250e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A       6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.335206e+06
Capacity_Ah     3.785800e-01
Energy_Wh       1.587930e+00
Count_#        7.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 8.412700e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

```

1/1           0s       26ms/step1/1
0s 39ms/step

```

[DEBUG] Feature min range:

```

Current_A       0.000000e+00
Voltage_V       4.078250e+00
Cell_Temperature_C 2.260908e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.331186e+06
Capacity_Ah     0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   0.000000e+00
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.066295e+00
Delta_Cell_Temperature -1.472220e+00
Rolling_Avg_Voltage_V 4.078250e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.220548e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A       6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.335206e+06
Capacity_Ah     3.785800e-01

```

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```
Energy_Wh      1.587930e+00
Count_#        7.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 8.412700e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.963014e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A      0.000000e+00
Voltage_V      4.078250e+00
Cell_Temperature_C 2.281940e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.331246e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   0.000000e+00
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.067347e+00
Delta_Cell_Temperature -8.412700e-01
Rolling_Avg_Voltage_V 4.078250e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.306322e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.335233e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        7.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 8.412700e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.914784e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
```

1/1 Os 17ms/step1/1

Os 29ms/step

[DEBUG] Feature min range:

```
Current_A      0.000000e+00
Voltage_V      4.078250e+00
Cell_Temperature_C 2.281940e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.331246e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
```

```

Count_#      7.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current -1.200400e-01
Power_W      0.000000e+00
Voltage_Temp_Corrected 4.067347e+00
Delta_Cell_Temperature -8.412700e-01
Rolling_Avg_Voltage_V 4.078250e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.306322e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.335233e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        7.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 8.412700e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.914784e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V      4.078420e+00
Cell_Temperature_C 2.292456e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.331306e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.068213e+00
Delta_Cell_Temperature -8.412700e-01
Rolling_Avg_Voltage_V 4.078335e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.349988e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.335293e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01

```

```

Power_W           2.692401e+00
Voltage_Temp_Corrected   4.196248e+00
Delta_Cell_Temperature   8.412700e-01
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 5.914784e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
1/1 Os 17ms/step1/1
Os 29ms/step

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.078420e+00
Cell_Temperature_C 2.292456e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331306e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.068213e+00
Delta_Cell_Temperature -8.412700e-01
Rolling_Avg_Voltage_V 4.078335e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 9.349988e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335293e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 8.412700e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.914784e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.078420e+00
Cell_Temperature_C 2.292456e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331366e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W            0.000000e+00

```

```

Voltage_Temp_Corrected    4.068213e+00
Delta_Cell_Temperature   -8.412700e-01
Rolling_Avg_Voltage_V    4.078420e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  0.000000e+00
Voltage_x_Cell_Temperature  9.349988e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds    3.335293e+06
Capacity_Ah     3.789700e-01
Energy_Wh        1.589570e+00
Count_#         8.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature  6.309500e-01
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A    4.469700e-01
Cumulative_Capacity_Window  5.827093e-02
Current_x_Cell_Temperature  1.557287e+01
Voltage_x_Cell_Temperature  1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
1/1 0s 21ms/step1/1
0s 41ms/step
[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V       4.078420e+00
Cell_Temperature_C  2.292456e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds    3.331366e+06
Capacity_Ah     0.000000e+00
Energy_Wh        0.000000e+00
Count_#         7.000000e-03
Delta_Voltage    -2.870000e-03
Delta_Current    -1.200400e-01
Power_W          0.000000e+00
Voltage_Temp_Corrected  4.068213e+00
Delta_Cell_Temperature  -8.412700e-01
Rolling_Avg_Voltage_V    4.078420e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  0.000000e+00
Voltage_x_Cell_Temperature  9.349988e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds    3.335293e+06
Capacity_Ah     3.789700e-01
Energy_Wh        1.589570e+00
Count_#         8.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected  4.196248e+00

```

```

Delta_Cell_Temperature    6.309500e-01
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A    4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.078590e+00
Cell_Temperature_C 1.787695e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.331426e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage  -2.870000e-03
Delta_Current  -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.068213e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.078505e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 7.501311e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.335353e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage  1.205300e-01
Delta_Current  6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

1/1 0s 17ms/step1/1

0s 39ms/step

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.078590e+00
Cell_Temperature_C 1.787695e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.331426e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage  -2.870000e-03
Delta_Current  -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.068213e+00
Delta_Cell_Temperature -5.994040e+00

```

```

Rolling_Avg_Voltage_V      4.078505e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 7.501311e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335353e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#              8.000000e+00
Delta_Voltage        1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.078590e+00
Cell_Temperature_C  1.493251e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331486e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#              7.000000e+00
Delta_Voltage        -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.068213e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078590e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 6.264531e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335413e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#              8.000000e+00
Delta_Voltage        1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02

```

```

Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 18ms/step1/1
0s 30ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078590e+00
Cell_Temperature_C 1.493251e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331486e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.068213e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078590e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 6.264531e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335413e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078590e+00
Cell_Temperature_C 1.272418e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331546e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.068739e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078590e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00

```

```

Voltage_x_Cell_Temperature 5.337234e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.335473e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
Os 29ms/step
[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.078590e+00
Cell_Temperature_C 1.272418e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.331546e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -1.200400e-01
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.068739e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078590e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 5.337234e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.335473e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02

```

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```
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078760e+00
Cell_Temperature_C 1.041069e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331606e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.069434e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078675e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.366129e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335533e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 19ms/step1/1
Os 32ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078760e+00
Cell_Temperature_C 1.041069e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331606e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.069434e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078675e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.366129e+01
Last_Current_Sign_Change 0.000000e+00
```

```

dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335533e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 6.309500e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078760e+00
Cell_Temperature_C 8.412680e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331666e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.069434e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078760e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 3.527899e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335593e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 17ms/step1/1
Os 29ms/step

```

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.078760e+00
Cell_Temperature_C	8.412680e+00
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.331666e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.069434e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.078760e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	3.527899e+01
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00
Cell_Temperature_C	2.429162e+01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.335593e+06
Capacity_Ah	3.789700e-01
Energy_Wh	1.589570e+00
Count_#	8.000000e+00
Delta_Voltage	1.205300e-01
Delta_Current	6.410800e-01
Power_W	2.692401e+00
Voltage_Temp_Corrected	4.196248e+00
Delta_Cell_Temperature	5.257900e-01
Rolling_Avg_Voltage_V	4.199790e+00
Rolling_Avg_Current_A	4.469700e-01
Cumulative_Capacity_Window	5.827093e-02
Current_x_Cell_Temperature	1.557287e+01
Voltage_x_Cell_Temperature	1.020197e+02
Last_Current_Sign_Change	1.000000e+00

dtype: float64

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.078760e+00
Cell_Temperature_C	6.309510e+00
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.331726e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.069434e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.078760e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	2.645603e+01
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00

```

Cell_Temperature_C      2.429162e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds            3.335653e+06
Capacity_Ah             3.789700e-01
Energy_Wh               1.589570e+00
Count_#                8.000000e+00
Delta_Voltage            1.205300e-01
Delta_Current            6.410800e-01
Power_W                 2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature   5.257900e-01
Rolling_Avg_Voltage_V   4.199790e+00
Rolling_Avg_Current_A   4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 16ms/step1/1

0s 29ms/step

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V       4.078760e+00
Cell_Temperature_C 6.309510e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.331726e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage  -2.870000e-03
Delta_Current  -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.069434e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078760e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 2.645603e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.335653e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage  1.205300e-01
Delta_Current  6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V       4.078760e+00
Cell_Temperature_C 4.732130e+00

```

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```
Ambient_Temperature_C      0.000000e+00
Time_Seconds              3.331786e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -1.200400e-01
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.069434e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.078760e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.983964e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  6.410800e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.429162e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.335713e+06
Capacity_Ah                3.789700e-01
Energy_Wh                  1.589570e+00
Count_#                   8.000000e+00
Delta_Voltage             1.205300e-01
Delta_Current              6.410800e-01
Power_W                    2.692401e+00
Voltage_Temp_Corrected    4.196248e+00
Delta_Cell_Temperature     5.257900e-01
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
```

1/1 0s 17ms/step1/1

0s 30ms/step

[DEBUG] Feature min range:

```
Current_A                  0.000000e+00
Voltage_V                  4.078760e+00
Cell_Temperature_C          4.732130e+00
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.331786e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -1.200400e-01
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.069434e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.078760e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.983964e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  6.410800e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.429162e+01
Ambient_Temperature_C       0.000000e+00
```

Battery SoC Estimation Project Report

```
Time_Seconds      3.335713e+06
Capacity_Ah       3.789700e-01
Energy_Wh         1.589570e+00
Count_#          8.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.078760e+00
Cell_Temperature_C 3.259910e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.331846e+06
Capacity_Ah      0.000000e+00
Energy_Wh         0.000000e+00
Count_#          7.000000e+00
Delta_Voltage    -2.870000e-03
Delta_Current    -1.200400e-01
Power_W          0.000000e+00
Voltage_Temp_Corrected 4.069434e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078760e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.366675e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A        6.410800e-01
Voltage_V        4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.335773e+06
Capacity_Ah      3.789700e-01
Energy_Wh         1.589570e+00
Count_#          8.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 27ms/step1/1
Os 46ms/step
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.078760e+00
Cell_Temperature_C 3.259910e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.331846e+06
```

```

Capacity_Ah      0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.069434e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078760e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.366675e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.335773e+06
Capacity_Ah     3.789700e-01
Energy_Wh       1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W         2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V       4.078760e+00
Cell_Temperature_C 2.523800e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.331906e+06
Capacity_Ah     0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.069434e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078760e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.057985e+01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.335833e+06
Capacity_Ah     3.789700e-01
Energy_Wh       1.589570e+00
Count_#        8.000000e+00

```

Battery SoC Estimation Project Report

```
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W           2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature  5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window  5.827093e-02
Current_x_Cell_Temperature  1.557287e+01
Voltage_x_Cell_Temperature  1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
Os 30ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078760e+00
Cell_Temperature_C 2.523800e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331906e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W           0.000000e+00
Voltage_Temp_Corrected  4.069434e+00
Delta_Cell_Temperature  -5.994040e+00
Rolling_Avg_Voltage_V  4.078760e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  0.000000e+00
Voltage_x_Cell_Temperature  1.057985e+01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335833e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W           2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature  5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window  5.827093e-02
Current_x_Cell_Temperature  1.557287e+01
Voltage_x_Cell_Temperature  1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078760e+00
Cell_Temperature_C 2.103170e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331966e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
```

Battery SoC Estimation Project Report

```
Delta_Current      -1.200400e-01
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.070646e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078760e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.815837e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

```
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335893e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

1/1 0s 17ms/step1/1

0s 30ms/step

```
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078760e+00
Cell_Temperature_C 2.103170e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.331966e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.070646e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078760e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 8.815837e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

```
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335893e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
```

```

Power_W           2.692401e+00
Voltage_Temp_Corrected   4.196248e+00
Delta_Cell_Temperature   5.257900e-01
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.078920e+00
Cell_Temperature_C 1.577380e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332026e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.070646e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078840e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 6.611636e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335953e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

1/1 0s 18ms/step1/1

0s 34ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.078920e+00
Cell_Temperature_C 1.577380e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332026e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W            0.000000e+00

```

Battery SoC Estimation Project Report

```
Voltage_Temp_Corrected      4.070646e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V      4.078840e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 6.611636e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335953e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.078920e+00
Cell_Temperature_C  1.261900e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332086e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.070646e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 5.289077e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336013e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
```

```

Rolling_Avg_Current_A    4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 17ms/step1/1

0s 29ms/step

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.078920e+00
Cell_Temperature_C	1.261900e+00
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.332086e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.070646e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.078920e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	5.289077e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00
Cell_Temperature_C	2.429162e+01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.336013e+06
Capacity_Ah	3.789700e-01
Energy_Wh	1.589570e+00
Count_#	8.000000e+00
Delta_Voltage	1.205300e-01
Delta_Current	6.410800e-01
Power_W	2.692401e+00
Voltage_Temp_Corrected	4.196248e+00
Delta_Cell_Temperature	5.257900e-01
Rolling_Avg_Voltage_V	4.199790e+00
Rolling_Avg_Current_A	4.469700e-01
Cumulative_Capacity_Window	5.827093e-02
Current_x_Cell_Temperature	1.557287e+01
Voltage_x_Cell_Temperature	1.020197e+02
Last_Current_Sign_Change	1.000000e+00

dtype: float64

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.078920e+00
Cell_Temperature_C	1.051590e+00
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.332146e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.070646e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.078920e+00
Rolling_Avg_Current_A	0.000000e+00

```

Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.407413e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336073e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 18ms/step1/1
0s 30ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078920e+00
Cell_Temperature_C 1.051590e+00
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332146e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.070646e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.407413e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336073e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02

```

```

Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078920e+00
Cell_Temperature_C 7.361100e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332206e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.069871e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 3.085177e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336133e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 16ms/step1/1
0s 28ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.078920e+00
Cell_Temperature_C 7.361100e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332206e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.069871e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00

```

```

Voltage_x_Cell_Temperature 3.085177e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.336133e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.078920e+00
Cell_Temperature_C 4.206300e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.332266e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -1.200400e-01
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.068293e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.762940e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.336193e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 17ms/step1/1
 0s 31ms/step
 [DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.078920e+00
Cell_Temperature_C	4.206300e-01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.332266e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.068293e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.078920e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	1.762940e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00
Cell_Temperature_C	2.429162e+01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.336193e+06
Capacity_Ah	3.789700e-01
Energy_Wh	1.589570e+00
Count_#	8.000000e+00
Delta_Voltage	1.205300e-01
Delta_Current	6.410800e-01
Power_W	2.692401e+00
Voltage_Temp_Corrected	4.196248e+00
Delta_Cell_Temperature	5.257900e-01
Rolling_Avg_Voltage_V	4.199790e+00
Rolling_Avg_Current_A	4.469700e-01
Cumulative_Capacity_Window	5.827093e-02
Current_x_Cell_Temperature	1.557287e+01
Voltage_x_Cell_Temperature	1.020197e+02
Last_Current_Sign_Change	1.000000e+00

dtype: float64

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.078920e+00
Cell_Temperature_C	3.154800e-01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.332326e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.067597e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.078920e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	0.000000e+00
Voltage_x_Cell_Temperature	1.322183e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336253e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W             2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1                 0s           23ms/step1/1
0s 36ms/step
[DEBUG] Feature min range:

```

```

Current_A          0.000000e+00
Voltage_V          4.078920e+00
Cell_Temperature_C 3.154800e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332326e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.067597e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.322183e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:

```

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336253e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W             2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:

```

```

Current_A          0.000000e+00

```

Battery SoC Estimation Project Report

```
Voltage_V           4.078920e+00
Cell_Temperature_C 3.154800e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.332386e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.067597e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.322183e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A           6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.336313e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

1/1 Os 16ms/step1/1

Os 28ms/step

[DEBUG] Feature min range:

```
Current_A           0.000000e+00
Voltage_V           4.078920e+00
Cell_Temperature_C 3.154800e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.332386e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.067597e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.078920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 1.322183e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A           6.410800e-01
Voltage_V           4.199790e+00
```

```

Cell_Temperature_C      2.429162e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.336313e+06
Capacity_Ah            3.789700e-01
Energy_Wh              1.589570e+00
Count_#                8.000000e+00
Delta_Voltage           1.205300e-01
Delta_Current           6.410800e-01
Power_W                 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature  5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A               0.000000e+00
Voltage_V               4.079090e+00
Cell_Temperature_C      1.051600e-01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.332446e+06
Capacity_Ah             0.000000e+00
Energy_Wh               0.000000e+00
Count_#                7.000000e+00
Delta_Voltage           -2.870000e-03
Delta_Current           -1.200400e-01
Power_W                 0.000000e+00
Voltage_Temp_Corrected 4.066376e+00
Delta_Cell_Temperature  -5.994040e+00
Rolling_Avg_Voltage_V  4.079005e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.407098e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A               6.410800e-01
Voltage_V               4.199790e+00
Cell_Temperature_C      2.429162e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.336373e+06
Capacity_Ah            3.789700e-01
Energy_Wh              1.589570e+00
Count_#                8.000000e+00
Delta_Voltage           1.205300e-01
Delta_Current           6.410800e-01
Power_W                 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature  5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 17ms/step1/1

0s 29ms/step

[DEBUG] Feature min range:

```

Current_A               0.000000e+00
Voltage_V               4.079090e+00
Cell_Temperature_C      1.051600e-01

```

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```
Ambient_Temperature_C      0.000000e+00
Time_Seconds              3.332446e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -1.200400e-01
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.066376e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.079005e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.407098e-01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  6.410800e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.429162e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.336373e+06
Capacity_Ah                3.789700e-01
Energy_Wh                  1.589570e+00
Count_#                   8.000000e+00
Delta_Voltage             1.205300e-01
Delta_Current              6.410800e-01
Power_W                    2.692401e+00
Voltage_Temp_Corrected    4.196248e+00
Delta_Cell_Temperature     5.257900e-01
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A                  0.000000e+00
Voltage_V                  4.079090e+00
Cell_Temperature_C          1.051600e-01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.332506e+06
Capacity_Ah                0.000000e+00
Energy_Wh                  0.000000e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -1.200400e-01
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.066376e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.079090e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.407098e-01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  6.410800e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.429162e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.336433e+06
Capacity_Ah                3.789700e-01
```

```

Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W         2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 20ms/step1/1

0s 38ms/step

[DEBUG] Feature min range:

```

Current_A        0.000000e+00
Voltage_V        4.079090e+00
Cell_Temperature_C 1.051600e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.332506e+06
Capacity_Ah     0.000000e+00
Energy_Wh        0.000000e+00
Count_#         7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.066376e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.407098e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A        6.410800e-01
Voltage_V        4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.336433e+06
Capacity_Ah     3.789700e-01
Energy_Wh        1.589570e+00
Count_#         8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W         2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A        0.000000e+00
Voltage_V        4.079090e+00
Cell_Temperature_C 1.051600e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.332566e+06
Capacity_Ah     0.000000e+00
Energy_Wh        0.000000e+00

```

```

Count_#      7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -1.200400e-01
Power_W      0.000000e+00
Voltage_Temp_Corrected 4.066206e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.079090e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.406919e-01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.336493e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

1/1 Os 19ms/step1/1
Os 31ms/step

[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V      4.079090e+00
Cell_Temperature_C 1.051600e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.332566e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.066206e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.079090e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature 0.000000e+00
Voltage_x_Cell_Temperature 4.406919e-01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.336493e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00

```

```

Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W           2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature  5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window  5.827093e-02
Current_x_Cell_Temperature  1.557287e+01
Voltage_x_Cell_Temperature  1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -1.051600e-01
Ambient_Temperature_C  0.000000e+00
Time_Seconds       3.332626e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected  4.065154e+00
Delta_Cell_Temperature  -5.994040e+00
Rolling_Avg_Voltage_V  4.079090e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  -0.000000e+00
Voltage_x_Cell_Temperature  -4.406919e-01
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds       3.336553e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected  4.196248e+00
Delta_Cell_Temperature  5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window  5.827093e-02
Current_x_Cell_Temperature  1.557287e+01
Voltage_x_Cell_Temperature  1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

1/1 0s 16ms/step1/1

0s 28ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -1.051600e-01
Ambient_Temperature_C  0.000000e+00
Time_Seconds       3.332626e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03

```

```

Delta_Current      -1.200400e-01
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.065154e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -4.406919e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336553e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332686e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.064628e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336613e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00

```

```

Delta_Cell_Temperature      5.257900e-01
Rolling_Avg_Voltage_V      4.199790e+00
Rolling_Avg_Current_A       4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

```
1/1          0s        23ms/step1/1
```

```
Os 36ms/step
```

```
[DEBUG] Feature min range:
```

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332686e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.064628e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

```
[DEBUG] Feature max range:
```

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336613e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

```
[DEBUG] Feature min range:
```

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332746e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.064628e+00
Delta_Cell_Temperature -5.994040e+00

```

Battery SoC Estimation Project Report

```
Rolling_Avg_Voltage_V      4.079090e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

```
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336673e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
```

```
1/1 0s 18ms/step1/1
0s 30ms/step
```

```
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332746e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.064628e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change  0.000000e+00
dtype: float64
```

```
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336673e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
```

Battery SoC Estimation Project Report

```
Rolling_Avg_Current_A      4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332806e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.064628e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336733e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
1/1 0s 18ms/step1/1
Os 31ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332806e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.064628e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
```

Battery SoC Estimation Project Report

```
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336733e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332866e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.064458e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336793e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
```

```
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 27ms/step1/1
0s 46ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332866e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.064458e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336793e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332926e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.064458e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
```

```

dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336853e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 18ms/step1/1
Os 31ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332926e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.064458e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336853e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332986e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.064298e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336913e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       1.205300e-01
Delta_Current        6.410800e-01
Power_W              2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 17ms/step1/1

0s 29ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.332986e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -1.200400e-01
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.064298e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

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```
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336913e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333046e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.064298e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336973e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 17ms/step1/1
Os 29ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
```

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```
Voltage_V           4.079090e+00
Cell_Temperature_C -2.103200e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333046e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.064298e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -8.813838e-01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A           6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.336973e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W             2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A           0.000000e+00
Voltage_V           4.079090e+00
Cell_Temperature_C -3.154800e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333106e+06
Capacity_Ah         0.000000e+00
Energy_Wh           0.000000e+00
Count_#             7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.063773e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.321972e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A           6.410800e-01
Voltage_V           4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
```

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```
Time_Seconds      3.337033e+06
Capacity_Ah       3.789700e-01
Energy_Wh         1.589570e+00
Count_#          8.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
Os 31ms/step
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.079090e+00
Cell_Temperature_C -3.154800e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.333106e+06
Capacity_Ah       0.000000e+00
Energy_Wh         0.000000e+00
Count_#          7.000000e+00
Delta_Voltage    -2.870000e-03
Delta_Current    -1.200400e-01
Power_W          0.000000e+00
Voltage_Temp_Corrected 4.063773e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.321972e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A        6.410800e-01
Voltage_V        4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.337033e+06
Capacity_Ah       3.789700e-01
Energy_Wh         1.589570e+00
Count_#          8.000000e+00
Delta_Voltage    1.205300e-01
Delta_Current    6.410800e-01
Power_W          2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V        4.079090e+00
Cell_Temperature_C -3.154800e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.333166e+06
```

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```
Capacity_Ah      0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.063603e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.321972e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A       6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.337093e+06
Capacity_Ah     3.789700e-01
Energy_Wh       1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W         2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
```

1/1 0s 25ms/step1/1
0s 44ms/step

[DEBUG] Feature min range:

```
Current_A       0.000000e+00
Voltage_V       4.079090e+00
Cell_Temperature_C -3.154800e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.333166e+06
Capacity_Ah     0.000000e+00
Energy_Wh       0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.063603e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.321972e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A       6.410800e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.337093e+06
Capacity_Ah     3.789700e-01
```

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```
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A      0.000000e+00
Voltage_V      4.079090e+00
Cell_Temperature_C -4.206300e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.333226e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.063077e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.762515e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.337153e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

1/1 Os 17ms/step1/1

Os 30ms/step

[DEBUG] Feature min range:

```
Current_A      0.000000e+00
Voltage_V      4.079090e+00
Cell_Temperature_C -4.206300e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.333226e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
```

```

Count_#      7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -1.200400e-01
Power_W      0.000000e+00
Voltage_Temp_Corrected 4.063077e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.079090e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.762515e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.337153e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V      4.079090e+00
Cell_Temperature_C -4.206300e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.333286e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.063077e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.079090e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.762515e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.337213e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   1.205300e-01
Delta_Current   6.410800e-01

```

```

Power_W           2.692401e+00
Voltage_Temp_Corrected   4.196248e+00
Delta_Cell_Temperature   5.257900e-01
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A     4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
1/1              0s      32ms/step1/1
0s 47ms/step

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -4.206300e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333286e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.063077e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079090e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.762515e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337213e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079090e+00
Cell_Temperature_C -4.206300e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333346e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00

```

```
Voltage_Temp_Corrected    4.063077e+00
Delta_Cell_Temperature   -5.994040e+00
Rolling_Avg_Voltage_V    4.079090e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -1.762515e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00
Cell_Temperature_C	2.429162e+01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.337273e+06
Capacity_Ah	3.789700e-01
Energy_Wh	1.589570e+00
Count_#	8.000000e+00
Delta_Voltage	1.205300e-01
Delta_Current	6.410800e-01
Power_W	2.692401e+00
Voltage_Temp_Corrected	4.196248e+00
Delta_Cell_Temperature	5.257900e-01
Rolling_Avg_Voltage_V	4.199790e+00
Rolling_Avg_Current_A	4.469700e-01
Cumulative_Capacity_Window	5.827093e-02
Current_x_Cell_Temperature	1.557287e+01
Voltage_x_Cell_Temperature	1.020197e+02
Last_Current_Sign_Change	1.000000e+00

dtype: float64

1/1 0s 20ms/step1/1

0s 36ms/step

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.079090e+00
Cell_Temperature_C	-4.206300e-01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.333346e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.063077e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.079090e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	-0.000000e+00
Voltage_x_Cell_Temperature	-1.762515e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00
Cell_Temperature_C	2.429162e+01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.337273e+06
Capacity_Ah	3.789700e-01
Energy_Wh	1.589570e+00
Count_#	8.000000e+00
Delta_Voltage	1.205300e-01
Delta_Current	6.410800e-01
Power_W	2.692401e+00
Voltage_Temp_Corrected	4.196248e+00

```

Delta_Cell_Temperature      5.257900e-01
Rolling_Avg_Voltage_V      4.199790e+00
Rolling_Avg_Current_A      4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333406e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079175e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337333e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

1/1 Os 17ms/step1/1

Os 29ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333406e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00

```

```

Rolling_Avg_Voltage_V      4.079175e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337333e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W             2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333466e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -1.200400e-01
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337393e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current       6.410800e-01
Power_W             2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02

```

Battery SoC Estimation Project Report

```
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1          0s      20ms/step1/1
0s 33ms/step
[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V      4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.333466e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage  -2.870000e-03
Delta_Current  -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.337393e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage  1.205300e-01
Delta_Current  6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V      4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.333526e+06
Capacity_Ah    0.000000e+00
Energy_Wh      0.000000e+00
Count_#        7.000000e+00
Delta_Voltage  -2.870000e-03
Delta_Current  -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
```

```

Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.337453e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 18ms/step1/1
Os 30ms/step
[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.333526e+06
Capacity_Ah 0.000000e+00
Energy_Wh 0.000000e+00
Count_# 7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -1.200400e-01
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 6.410800e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.337453e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 1.205300e-01
Delta_Current 6.410800e-01
Power_W 2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02

```

Battery SoC Estimation Project Report

```
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333586e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337513e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1                 0s           24ms/step1/1
0s 42ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333586e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
```

```

dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337513e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.079260e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.333586e+06
Capacity_Ah        0.000000e+00
Energy_Wh          0.000000e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -1.200400e-01
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.079260e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          6.410800e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337573e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      1.205300e-01
Delta_Current      6.410800e-01
Power_W            2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.469700e-01
Cumulative_Capacity_Window 5.827093e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 16ms/step1/1
Os 28ms/step

```

Battery SoC Estimation Project Report

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.079260e+00
Cell_Temperature_C	-6.309500e-01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.333586e+06
Capacity_Ah	0.000000e+00
Energy_Wh	0.000000e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.062025e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.079260e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	-0.000000e+00
Voltage_x_Cell_Temperature	-2.643794e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00
Cell_Temperature_C	2.429162e+01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.337573e+06
Capacity_Ah	3.789700e-01
Energy_Wh	1.589570e+00
Count_#	8.000000e+00
Delta_Voltage	1.205300e-01
Delta_Current	6.410800e-01
Power_W	2.692401e+00
Voltage_Temp_Corrected	4.196248e+00
Delta_Cell_Temperature	5.257900e-01
Rolling_Avg_Voltage_V	4.199790e+00
Rolling_Avg_Current_A	4.469700e-01
Cumulative_Capacity_Window	5.827093e-02
Current_x_Cell_Temperature	1.557287e+01
Voltage_x_Cell_Temperature	1.020197e+02
Last_Current_Sign_Change	1.000000e+00

dtype: float64

[DEBUG] Feature min range:

Current_A	0.000000e+00
Voltage_V	4.190010e+00
Cell_Temperature_C	-6.309500e-01
Ambient_Temperature_C	0.000000e+00
Time_Seconds	3.334186e+06
Capacity_Ah	3.213700e-01
Energy_Wh	1.347650e+00
Count_#	7.000000e+00
Delta_Voltage	-2.870000e-03
Delta_Current	-1.200400e-01
Power_W	0.000000e+00
Voltage_Temp_Corrected	4.062025e+00
Delta_Cell_Temperature	-5.994040e+00
Rolling_Avg_Voltage_V	4.139525e+00
Rolling_Avg_Current_A	0.000000e+00
Cumulative_Capacity_Window	0.000000e+00
Current_x_Cell_Temperature	-0.000000e+00
Voltage_x_Cell_Temperature	-2.643794e+00
Last_Current_Sign_Change	0.000000e+00

dtype: float64

[DEBUG] Feature max range:

Current_A	6.410800e-01
Voltage_V	4.199790e+00

```

Cell_Temperature_C      2.429162e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.337633e+06
Capacity_Ah            3.789700e-01
Energy_Wh              1.589570e+00
Count_#                8.000000e+00
Delta_Voltage          1.205300e-01
Delta_Current          6.410800e-01
Power_W                2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window 5.914784e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 19ms/step1/1

0s 32ms/step

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.190010e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.334186e+06
Capacity_Ah    3.213700e-01
Energy_Wh      1.347650e+00
Count_#        7.000000e+00
Delta_Voltage  -2.870000e-03
Delta_Current  -1.200400e-01
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.139525e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      6.410800e-01
Voltage_V      4.199790e+00
Cell_Temperature_C 2.429162e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.337633e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage  1.205300e-01
Delta_Current  6.410800e-01
Power_W        2.692401e+00
Voltage_Temp_Corrected 4.196248e+00
Delta_Cell_Temperature 5.257900e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  4.469700e-01
Cumulative_Capacity_Window 5.914784e-02
Current_x_Cell_Temperature 1.557287e+01
Voltage_x_Cell_Temperature 1.020197e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.189840e+00
Cell_Temperature_C -6.309500e-01

```

Battery SoC Estimation Project Report

```
Ambient_Temperature_C      0.000000e+00
Time_Seconds              3.334246e+06
Capacity_Ah                3.310100e-01
Energy_Wh                  1.388140e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -1.200400e-01
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.062025e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.189976e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  5.210400e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.418646e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.337693e+06
Capacity_Ah                3.789700e-01
Energy_Wh                  1.589570e+00
Count_#                   8.000000e+00
Delta_Voltage             0.000000e+00
Delta_Current              0.000000e+00
Power_W                    2.188259e+00
Voltage_Temp_Corrected    4.195722e+00
Delta_Cell_Temperature     2.103200e-01
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     5.810600e-01
Cumulative_Capacity_Window 5.125562e-02
Current_x_Cell_Temperature 1.254732e+01
Voltage_x_Cell_Temperature 1.015781e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
```

1/1 0s 22ms/step1/1

0s 36ms/step

[DEBUG] Feature min range:

```
Current_A                  0.000000e+00
Voltage_V                  4.189840e+00
Cell_Temperature_C          -6.309500e-01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.334246e+06
Capacity_Ah                3.310100e-01
Energy_Wh                  1.388140e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -1.200400e-01
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.062025e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.189976e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A                  5.210400e-01
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.418646e+01
Ambient_Temperature_C       0.000000e+00
```

Battery SoC Estimation Project Report

```
Time_Seconds      3.337693e+06
Capacity_Ah       3.789700e-01
Energy_Wh         1.589570e+00
Count_#          8.000000e+00
Delta_Voltage     0.000000e+00
Delta_Current     0.000000e+00
Power_W           2.188259e+00
Voltage_Temp_Corrected 4.195722e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 5.810600e-01
Cumulative_Capacity_Window 5.125562e-02
Current_x_Cell_Temperature 1.254732e+01
Voltage_x_Cell_Temperature 1.015781e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V         4.189840e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.334306e+06
Capacity_Ah       3.388700e-01
Energy_Wh         1.421130e+00
Count_#          7.000000e+00
Delta_Voltage     -2.870000e-03
Delta_Current     -9.450000e-02
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189942e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A        4.265400e-01
Voltage_V         4.199790e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.337753e+06
Capacity_Ah       3.789700e-01
Energy_Wh         1.589570e+00
Count_#          8.000000e+00
Delta_Voltage     0.000000e+00
Delta_Current     0.000000e+00
Power_W           1.791378e+00
Voltage_Temp_Corrected 4.195722e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.737900e-01
Cumulative_Capacity_Window 4.275455e-02
Current_x_Cell_Temperature 1.018193e+01
Voltage_x_Cell_Temperature 1.015781e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 Os 16ms/step1/1
Os 28ms/step
[DEBUG] Feature min range:
Current_A        0.000000e+00
Voltage_V         4.189840e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.334306e+06
```

```

Capacity_Ah      3.388700e-01
Energy_Wh       1.421130e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -9.450000e-02
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189942e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      4.265400e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.337753e+06
Capacity_Ah     3.789700e-01
Energy_Wh       1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   0.000000e+00
Delta_Current   0.000000e+00
Power_W         1.791378e+00
Voltage_Temp_Corrected 4.195722e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.737900e-01
Cumulative_Capacity_Window 4.275455e-02
Current_x_Cell_Temperature 1.018193e+01
Voltage_x_Cell_Temperature 1.015781e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

[DEBUG] Feature min range:
Current_A      0.000000e+00
Voltage_V       4.189840e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.334366e+06
Capacity_Ah     3.453200e-01
Energy_Wh       1.448240e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -7.407000e-02
Power_W         0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189908e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A      3.524700e-01
Voltage_V       4.199790e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds    3.337813e+06
Capacity_Ah     3.789700e-01
Energy_Wh       1.589570e+00
Count_#        8.000000e+00

```

```

Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W           1.480300e+00
Voltage_Temp_Corrected  4.195722e+00
Delta_Cell_Temperature  2.103200e-01
Rolling_Avg_Voltage_V   4.199790e+00
Rolling_Avg_Current_A    3.895050e-01
Cumulative_Capacity_Window  3.595357e-02
Current_x_Cell_Temperature  8.487936e+00
Voltage_x_Cell_Temperature  1.015781e+02
Last_Current_Sign_Change    1.000000e+00
dtype: float64

```

1/1 0s 25ms/step1/1

0s 37ms/step

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.189840e+00
Cell_Temperature_C   -6.309500e-01
Ambient_Temperature_C  0.000000e+00
Time_Seconds    3.334366e+06
Capacity_Ah     3.453200e-01
Energy_Wh       1.448240e+00
Count_#        7.000000e+00
Delta_Voltage    -2.870000e-03
Delta_Current     -7.407000e-02
Power_W         0.000000e+00
Voltage_Temp_Corrected  4.062025e+00
Delta_Cell_Temperature  -5.994040e+00
Rolling_Avg_Voltage_V   4.189908e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature  -0.000000e+00
Voltage_x_Cell_Temperature  -2.643794e+00
Last_Current_Sign_Change    0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      3.524700e-01
Voltage_V      4.199790e+00
Cell_Temperature_C   2.418646e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds    3.337813e+06
Capacity_Ah     3.789700e-01
Energy_Wh       1.589570e+00
Count_#        8.000000e+00
Delta_Voltage    0.000000e+00
Delta_Current     0.000000e+00
Power_W         1.480300e+00
Voltage_Temp_Corrected  4.195722e+00
Delta_Cell_Temperature  2.103200e-01
Rolling_Avg_Voltage_V   4.199790e+00
Rolling_Avg_Current_A    3.895050e-01
Cumulative_Capacity_Window  3.595357e-02
Current_x_Cell_Temperature  8.487936e+00
Voltage_x_Cell_Temperature  1.015781e+02
Last_Current_Sign_Change    1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.189840e+00
Cell_Temperature_C   -6.309500e-01
Ambient_Temperature_C  0.000000e+00
Time_Seconds    3.334426e+06
Capacity_Ah     3.506800e-01
Energy_Wh       1.470760e+00
Count_#        7.000000e+00
Delta_Voltage    -2.870000e-03

```

```

Delta_Current      -5.875000e-02
Power_W           0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189874e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          2.937200e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337873e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              1.233562e+00
Voltage_Temp_Corrected 4.195722e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 3.230950e-01
Cumulative_Capacity_Window 3.047956e-02
Current_x_Cell_Temperature 7.104047e+00
Voltage_x_Cell_Temperature 1.015781e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 Os 16ms/step1/1

Os 27ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.189840e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334426e+06
Capacity_Ah         3.506800e-01
Energy_Wh           1.470760e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -5.875000e-02
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189874e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          2.937200e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.418646e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337873e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00

```

```

Power_W           1.233562e+00
Voltage_Temp_Corrected   4.195722e+00
Delta_Cell_Temperature   2.103200e-01
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A     3.230950e-01
Cumulative_Capacity_Window 3.047956e-02
Current_x_Cell_Temperature 7.104047e+00
Voltage_x_Cell_Temperature 1.015781e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334486e+06
Capacity_Ah        3.551800e-01
Energy_Wh          1.489640e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189806e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          2.477500e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337933e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            1.040498e+00
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 2.707350e-01
Cumulative_Capacity_Window 2.604240e-02
Current_x_Cell_Temperature 5.887984e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

1/1 0s 23ms/step1/1

0s 41ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334486e+06
Capacity_Ah        3.551800e-01
Energy_Wh          1.489640e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00

```

Battery SoC Estimation Project Report

```
Voltage_Temp_Corrected      4.062025e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V      4.189806e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          2.477500e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337933e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              1.040498e+00
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A 2.707350e-01
Cumulative_Capacity_Window 2.604240e-02
Current_x_Cell_Temperature 5.887984e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334546e+06
Capacity_Ah         3.589700e-01
Energy_Wh           1.505570e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -4.853000e-02
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.189772e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          2.094400e-01
Voltage_V           4.199790e+00
Cell_Temperature_C  2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.337993e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              8.796040e-01
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V  4.199790e+00
```

```

Rolling_Avg_Current_A      2.285950e-01
Cumulative_Capacity_Window 2.243473e-02
Current_x_Cell_Temperature 4.977515e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
1/1 Os 16ms/step1/1
Os 28ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.334546e+06
Capacity_Ah         3.589700e-01
Energy_Wh            1.505570e+00
Count_#              7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -4.853000e-02
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189772e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          2.094400e-01
Voltage_V           4.199790e+00
Cell_Temperature_C 2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.337993e+06
Capacity_Ah         3.789700e-01
Energy_Wh            1.589570e+00
Count_#              8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              8.796040e-01
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 2.285950e-01
Cumulative_Capacity_Window 2.243473e-02
Current_x_Cell_Temperature 4.977515e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.334606e+06
Capacity_Ah         3.621900e-01
Energy_Wh            1.519080e+00
Count_#              7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -4.853000e-02
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189738e+00
Rolling_Avg_Current_A 0.000000e+00

```

```

Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 1.762300e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.338053e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current 0.000000e+00
Power_W 7.401290e-01
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.928350e-01
Cumulative_Capacity_Window 1.944891e-02
Current_x_Cell_Temperature 4.225317e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
0s 29ms/step
[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.334606e+06
Capacity_Ah 3.621900e-01
Energy_Wh 1.519080e+00
Count_# 7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -4.853000e-02
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189738e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 1.762300e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.338053e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current 0.000000e+00
Power_W 7.401290e-01
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 2.103200e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.928350e-01
Cumulative_Capacity_Window 1.944891e-02

```

```

Current_x_Cell_Temperature 4.225317e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334666e+06
Capacity_Ah        3.649500e-01
Energy_Wh          1.530660e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189704e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          1.532500e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338113e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            6.436178e-01
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.647400e-01
Cumulative_Capacity_Window 1.700213e-02
Current_x_Cell_Temperature 3.690459e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1                 0s           22ms/step1/1
0s 35ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334666e+06
Capacity_Ah        3.649500e-01
Energy_Wh          1.530660e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189704e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00

```

```

Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 1.532500e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.338113e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current 0.000000e+00
Power_W 6.436178e-01
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.647400e-01
Cumulative_Capacity_Window 1.700213e-02
Current_x_Cell_Temperature 3.690459e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.189670e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.334726e+06
Capacity_Ah 3.673400e-01
Energy_Wh 1.540700e+00
Count_# 7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -4.853000e-02
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.062025e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189670e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A 1.353700e-01
Voltage_V 4.199790e+00
Cell_Temperature_C 2.408130e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.338173e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current 0.000000e+00
Power_W 5.685256e-01
Voltage_Temp_Corrected 4.195196e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.443100e-01
Cumulative_Capacity_Window 1.497018e-02
Current_x_Cell_Temperature 3.259886e+00
Voltage_x_Cell_Temperature 1.011364e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 16ms/step1/1
 0s 29ms/step
 [DEBUG] Feature min range:
 Current_A 0.000000e+00
 Voltage_V 4.189670e+00
 Cell_Temperature_C -6.309500e-01
 Ambient_Temperature_C 0.000000e+00
 Time_Seconds 3.334726e+06
 Capacity_Ah 3.673400e-01
 Energy_Wh 1.540700e+00
 Count_# 7.000000e+00
 Delta_Voltage -2.870000e-03
 Delta_Current -4.853000e-02
 Power_W 0.000000e+00
 Voltage_Temp_Corrected 4.062025e+00
 Delta_Cell_Temperature -5.994040e+00
 Rolling_Avg_Voltage_V 4.189670e+00
 Rolling_Avg_Current_A 0.000000e+00
 Cumulative_Capacity_Window 0.000000e+00
 Current_x_Cell_Temperature -0.000000e+00
 Voltage_x_Cell_Temperature -2.643794e+00
 Last_Current_Sign_Change 0.000000e+00
 dtype: float64

[DEBUG] Feature max range:
 Current_A 1.353700e-01
 Voltage_V 4.199790e+00
 Cell_Temperature_C 2.408130e+01
 Ambient_Temperature_C 0.000000e+00
 Time_Seconds 3.338173e+06
 Capacity_Ah 3.789700e-01
 Energy_Wh 1.589570e+00
 Count_# 8.000000e+00
 Delta_Voltage 0.000000e+00
 Delta_Current 0.000000e+00
 Power_W 5.685256e-01
 Voltage_Temp_Corrected 4.195196e+00
 Delta_Cell_Temperature 1.051600e-01
 Rolling_Avg_Voltage_V 4.199790e+00
 Rolling_Avg_Current_A 1.443100e-01
 Cumulative_Capacity_Window 1.497018e-02
 Current_x_Cell_Temperature 3.259886e+00
 Voltage_x_Cell_Temperature 1.011364e+02
 Last_Current_Sign_Change 1.000000e+00
 dtype: float64

[DEBUG] Feature min range:
 Current_A 0.000000e+00
 Voltage_V 4.189500e+00
 Cell_Temperature_C -6.309500e-01
 Ambient_Temperature_C 0.000000e+00
 Time_Seconds 3.334786e+06
 Capacity_Ah 3.694200e-01
 Energy_Wh 1.549450e+00
 Count_# 7.000000e+00
 Delta_Voltage -2.870000e-03
 Delta_Current -4.853000e-02
 Power_W 0.000000e+00
 Voltage_Temp_Corrected 4.061345e+00
 Delta_Cell_Temperature -5.994040e+00
 Rolling_Avg_Voltage_V 4.189636e+00
 Rolling_Avg_Current_A 0.000000e+00
 Cumulative_Capacity_Window 0.000000e+00
 Current_x_Cell_Temperature -0.000000e+00
 Voltage_x_Cell_Temperature -2.643794e+00
 Last_Current_Sign_Change 0.000000e+00
 dtype: float64

[DEBUG] Feature max range:

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```
Current_A          1.174900e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.397615e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338233e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            4.934333e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.264300e-01
Cumulative_Capacity_Window 1.326994e-02
Current_x_Cell_Temperature 2.804603e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

1/1 0s 26ms/step1/1

Os 45ms/step

[DEBUG] Feature min range:

```
Current_A          0.000000e+00
Voltage_V          4.189500e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.334786e+06
Capacity_Ah        3.694200e-01
Energy_Wh          1.549450e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189636e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A          1.174900e-01
Voltage_V          4.199790e+00
Cell_Temperature_C 2.397615e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338233e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            4.934333e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.264300e-01
Cumulative_Capacity_Window 1.326994e-02
Current_x_Cell_Temperature 2.804603e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A          0.000000e+00
```

```

Voltage_V           4.189500e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.334846e+06
Capacity_Ah         3.712400e-01
Energy_Wh           1.557110e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -4.853000e-02
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189602e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A           1.021600e-01
Voltage_V           4.199790e+00
Cell_Temperature_C 2.397615e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.338293e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              4.290505e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 1.098250e-01
Cumulative_Capacity_Window 1.107205e-02
Current_x_Cell_Temperature 2.438660e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 Os 18ms/step1/1

0s 32ms/step

[DEBUG] Feature min range:

```

Current_A           0.000000e+00
Voltage_V           4.189500e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.334846e+06
Capacity_Ah         3.712400e-01
Energy_Wh           1.557110e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -4.853000e-02
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189602e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A           1.021600e-01
Voltage_V           4.199790e+00

```

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```
Cell_Temperature_C      2.397615e+01
Ambient_Temperature_C   0.000000e+00
Time_Seconds           3.338293e+06
Capacity_Ah            3.789700e-01
Energy_Wh              1.589570e+00
Count_#                8.000000e+00
Delta_Voltage           0.000000e+00
Delta_Current           0.000000e+00
Power_W                 4.290505e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature  1.051600e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A   1.098250e-01
Cumulative_Capacity_Window 1.107205e-02
Current_x_Cell_Temperature 2.438660e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

[DEBUG] Feature min range:

```
Current_A               0.000000e+00
Voltage_V                4.189500e+00
Cell_Temperature_C       -6.309500e-01
Ambient_Temperature_C    0.000000e+00
Time_Seconds             3.334906e+06
Capacity_Ah              3.728500e-01
Energy_Wh                1.563870e+00
Count_#                  7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current             -4.853000e-02
Power_W                  0.000000e+00
Voltage_Temp_Corrected  4.061345e+00
Delta_Cell_Temperature   -5.994040e+00
Rolling_Avg_Voltage_V   4.189568e+00
Rolling_Avg_Current_A    0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A               8.939000e-02
Voltage_V                4.199790e+00
Cell_Temperature_C       2.397615e+01
Ambient_Temperature_C    0.000000e+00
Time_Seconds             3.338353e+06
Capacity_Ah              3.789700e-01
Energy_Wh                1.589570e+00
Count_#                  8.000000e+00
Delta_Voltage             0.000000e+00
Delta_Current             0.000000e+00
Power_W                 3.754192e-01
Voltage_Temp_Corrected  4.194671e+00
Delta_Cell_Temperature  1.051600e-01
Rolling_Avg_Voltage_V   4.199790e+00
Rolling_Avg_Current_A   9.577500e-02
Cumulative_Capacity_Window 9.164473e-03
Current_x_Cell_Temperature 2.143228e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
```

1/1 0s 17ms/step1/1

0s 30ms/step

[DEBUG] Feature min range:

```
Current_A               0.000000e+00
Voltage_V                4.189500e+00
Cell_Temperature_C       -6.309500e-01
```

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```
Ambient_Temperature_C      0.000000e+00
Time_Seconds              3.334906e+06
Capacity_Ah                3.728500e-01
Energy_Wh                  1.563870e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -4.853000e-02
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.061345e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.189568e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A                 8.939000e-02
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.397615e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.338353e+06
Capacity_Ah                3.789700e-01
Energy_Wh                  1.589570e+00
Count_#                   8.000000e+00
Delta_Voltage             0.000000e+00
Delta_Current              0.000000e+00
Power_W                    3.754192e-01
Voltage_Temp_Corrected    4.194671e+00
Delta_Cell_Temperature     1.051600e-01
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     9.577500e-02
Cumulative_Capacity_Window 9.164473e-03
Current_x_Cell_Temperature 2.143228e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A                 0.000000e+00
Voltage_V                  4.189500e+00
Cell_Temperature_C          -6.309500e-01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.334966e+06
Capacity_Ah                3.742700e-01
Energy_Wh                  1.569830e+00
Count_#                   7.000000e+00
Delta_Voltage             -2.870000e-03
Delta_Current              -4.853000e-02
Power_W                    0.000000e+00
Voltage_Temp_Corrected    4.061345e+00
Delta_Cell_Temperature     -5.994040e+00
Rolling_Avg_Voltage_V     4.189534e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A                 7.918000e-02
Voltage_V                  4.199790e+00
Cell_Temperature_C          2.397615e+01
Ambient_Temperature_C       0.000000e+00
Time_Seconds              3.338413e+06
Capacity_Ah                3.789700e-01
```

```

Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   0.000000e+00
Delta_Current   0.000000e+00
Power_W         3.325394e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 8.428500e-02
Cumulative_Capacity_Window 7.505792e-03
Current_x_Cell_Temperature 1.898432e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 24ms/step1/1

0s 36ms/step

[DEBUG] Feature min range:

```

Current_A        0.000000e+00
Voltage_V        4.189500e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.334966e+06
Capacity_Ah      3.742700e-01
Energy_Wh        1.569830e+00
Count_#          7.000000e+00
Delta_Voltage    -2.870000e-03
Delta_Current    -4.853000e-02
Power_W          0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189534e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A        7.918000e-02
Voltage_V        4.199790e+00
Cell_Temperature_C 2.397615e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.338413e+06
Capacity_Ah      3.789700e-01
Energy_Wh        1.589570e+00
Count_#          8.000000e+00
Delta_Voltage    0.000000e+00
Delta_Current    0.000000e+00
Power_W          3.325394e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature 1.051600e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 8.428500e-02
Cumulative_Capacity_Window 7.505792e-03
Current_x_Cell_Temperature 1.898432e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A        0.000000e+00
Voltage_V        4.189500e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds     3.335026e+06
Capacity_Ah      3.755300e-01
Energy_Wh        1.575100e+00

```

```

Count_#      7.000000e+00
Delta_Voltage -2.870000e-03
Delta_Current -4.853000e-02
Power_W      0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.189500e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      7.152000e-02
Voltage_V      4.199790e+00
Cell_Temperature_C 2.397615e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.338473e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00
Delta_Voltage   0.000000e+00
Delta_Current   0.000000e+00
Power_W        3.003690e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V  4.199790e+00
Rolling_Avg_Current_A  7.535000e-02
Cumulative_Capacity_Window 6.054446e-03
Current_x_Cell_Temperature 1.714774e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64

```

1/1 Os 16ms/step1/1

Os 29ms/step

[DEBUG] Feature min range:

```

Current_A      0.000000e+00
Voltage_V      4.189500e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.335026e+06
Capacity_Ah    3.755300e-01
Energy_Wh      1.575100e+00
Count_#        7.000000e+00
Delta_Voltage   -2.870000e-03
Delta_Current   -4.853000e-02
Power_W        0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V  4.189500e+00
Rolling_Avg_Current_A  0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A      7.152000e-02
Voltage_V      4.199790e+00
Cell_Temperature_C 2.397615e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds   3.338473e+06
Capacity_Ah    3.789700e-01
Energy_Wh      1.589570e+00
Count_#        8.000000e+00

```

```

Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W           3.003690e-01
Voltage_Temp_Corrected 4.194671e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 7.535000e-02
Cumulative_Capacity_Window 6.054446e-03
Current_x_Cell_Temperature 1.714774e+00
Voltage_x_Cell_Temperature 1.006948e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335086e+06
Capacity_Ah        3.766400e-01
Energy_Wh          1.579790e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189466e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          6.385000e-02
Voltage_V          4.199790e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338533e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            2.681566e-01
Voltage_Temp_Corrected 4.194145e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 6.768500e-02
Cumulative_Capacity_Window 4.768871e-03
Current_x_Cell_Temperature 1.524163e+00
Voltage_x_Cell_Temperature 1.002531e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64

```

1/1 0s 19ms/step1/1

0s 31ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335086e+06
Capacity_Ah        3.766400e-01
Energy_Wh          1.579790e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03

```

Battery SoC Estimation Project Report

```
Delta_Current      -4.853000e-02
Power_W           0.000000e+00
Voltage_Temp_Corrected  4.061345e+00
Delta_Cell_Temperature   -5.994040e+00
Rolling_Avg_Voltage_V    4.189466e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A          6.385000e-02
Voltage_V           4.199790e+00
Cell_Temperature_C  2.387099e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds        3.338533e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W             2.681566e-01
Voltage_Temp_Corrected  4.194145e+00
Delta_Cell_Temperature  2.103100e-01
Rolling_Avg_Voltage_V    4.199790e+00
Rolling_Avg_Current_A     6.768500e-02
Cumulative_Capacity_Window  4.768871e-03
Current_x_Cell_Temperature  1.524163e+00
Voltage_x_Cell_Temperature  1.002531e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V           4.189330e+00
Cell_Temperature_C  -6.309500e-01
Ambient_Temperature_C  0.000000e+00
Time_Seconds        3.335146e+06
Capacity_Ah         3.776600e-01
Energy_Wh           1.584050e+00
Count_#             7.000000e+00
Delta_Voltage       -2.870000e-03
Delta_Current        -4.853000e-02
Power_W             0.000000e+00
Voltage_Temp_Corrected  4.061345e+00
Delta_Cell_Temperature   -5.994040e+00
Rolling_Avg_Voltage_V    4.189432e+00
Rolling_Avg_Current_A     0.000000e+00
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A          5.874000e-02
Voltage_V           4.199790e+00
Cell_Temperature_C  2.387099e+01
Ambient_Temperature_C  0.000000e+00
Time_Seconds        3.338593e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W             2.466957e-01
Voltage_Temp_Corrected  4.193619e+00
```

```

Delta_Cell_Temperature    2.103100e-01
Rolling_Avg_Voltage_V     4.199790e+00
Rolling_Avg_Current_A     6.129500e-02
Cumulative_Capacity_Window 3.607664e-03
Current_x_Cell_Temperature 1.396005e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

1/1 0s 16ms/step1/1

0s 28ms/step

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335146e+06
Capacity_Ah        3.776600e-01
Energy_Wh          1.584050e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -4.853000e-02
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189432e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64

```

[DEBUG] Feature max range:

```

Current_A          5.874000e-02
Voltage_V          4.199790e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338593e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current       0.000000e+00
Power_W             2.466957e-01
Voltage_Temp_Corrected 4.193619e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 6.129500e-02
Cumulative_Capacity_Window 3.607664e-03
Current_x_Cell_Temperature 1.396005e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64

```

[DEBUG] Feature min range:

```

Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335206e+06
Capacity_Ah        3.785800e-01
Energy_Wh          1.587930e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current       -4.853000e-02
Power_W             0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00

```

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```
Rolling_Avg_Voltage_V      4.189398e+00
Rolling_Avg_Current_A      0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A          5.108000e-02
Voltage_V          4.199790e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338653e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            2.145253e-01
Voltage_Temp_Corrected 4.193619e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 5.491000e-02
Cumulative_Capacity_Window 2.570988e-03
Current_x_Cell_Temperature 1.213959e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change  1.000000e+00
dtype: float64
```

1/1 0s 24ms/step1/1

0s 42ms/step

[DEBUG] Feature min range:

```
Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335206e+06
Capacity_Ah        3.785800e-01
Energy_Wh          1.587930e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189398e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change  0.000000e+00
dtype: float64
```

[DEBUG] Feature max range:

```
Current_A          5.108000e-02
Voltage_V          4.199790e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338653e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            2.145253e-01
Voltage_Temp_Corrected 4.193619e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.199790e+00
```

```

Rolling_Avg_Current_A      5.491000e-02
Cumulative_Capacity_Window 2.570988e-03
Current_x_Cell_Temperature 1.213959e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335233e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189364e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          4.853000e-02
Voltage_V          4.199790e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338713e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            2.038158e-01
Voltage_Temp_Corrected 4.193619e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.980500e-02
Cumulative_Capacity_Window 1.617279e-03
Current_x_Cell_Temperature 1.153356e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change   1.000000e+00
dtype: float64
1/1 0s 16ms/step1/1
Os 28ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335233e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            7.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189364e+00
Rolling_Avg_Current_A 0.000000e+00

```

Battery SoC Estimation Project Report

```
Cumulative_Capacity_Window  0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change   0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          4.853000e-02
Voltage_V          4.199790e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338713e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            2.038158e-01
Voltage_Temp_Corrected 4.193619e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.199790e+00
Rolling_Avg_Current_A 4.980500e-02
Cumulative_Capacity_Window 1.617279e-03
Current_x_Cell_Temperature 1.153356e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335293e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189330e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.196920e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338773e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.191275e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.198355e+00
Rolling_Avg_Current_A 2.426500e-02
Cumulative_Capacity_Window 7.953528e-04
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 1.001846e+02
```

```
Last_Current_Sign_Change 1.000000e+00
dtype: float64
1/1          0s      23ms/step1/1
0s 37ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189330e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335293e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      -2.870000e-03
Delta_Current      -4.853000e-02
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189330e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.196920e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338773e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.191275e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.198355e+00
Rolling_Avg_Current_A 2.426500e-02
Cumulative_Capacity_Window 7.953528e-04
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change 1.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189170e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335293e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      -8.500000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189298e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
```

```

dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.196920e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338833e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.191275e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.196920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1 0s 17ms/step1/1
Os 29ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189170e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335293e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      -8.500000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189298e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.196920e+00
Cell_Temperature_C 2.387099e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338833e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.191275e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.196920e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 1.001846e+02
Last_Current_Sign_Change 0.000000e+00
dtype: float64

```

Battery SoC Estimation Project Report

[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.189170e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.335353e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage -8.500000e-04
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189266e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

[DEBUG] Feature max range:
Current_A 0.000000e+00
Voltage_V 4.196080e+00
Cell_Temperature_C 1.787695e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.338893e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage 0.000000e+00
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.160465e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.196500e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 7.501311e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64

1/1 0s 18ms/step1/1

0s 30ms/step

[DEBUG] Feature min range:
Current_A 0.000000e+00
Voltage_V 4.189170e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds 3.335353e+06
Capacity_Ah 3.789700e-01
Energy_Wh 1.589570e+00
Count_# 8.000000e+00
Delta_Voltage -8.500000e-04
Delta_Current 0.000000e+00
Power_W 0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -5.994040e+00
Rolling_Avg_Voltage_V 4.189266e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64

[DEBUG] Feature max range:

```

Current_A          0.000000e+00
Voltage_V          4.196080e+00
Cell_Temperature_C 1.787695e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338893e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.160465e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.196500e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 7.501311e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature min range:
Current_A          0.000000e+00
Voltage_V          4.189170e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.335413e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      -8.500000e-04
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -2.944440e+00
Rolling_Avg_Voltage_V 4.189234e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
[DEBUG] Feature max range:
Current_A          0.000000e+00
Voltage_V          4.195230e+00
Cell_Temperature_C 1.493251e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds       3.338893e+06
Capacity_Ah        3.789700e-01
Energy_Wh          1.589570e+00
Count_#            8.000000e+00
Delta_Voltage      0.000000e+00
Delta_Current      0.000000e+00
Power_W            0.000000e+00
Voltage_Temp_Corrected 4.144893e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.195655e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 6.264531e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
1/1                 0s           26ms/step1/1
0s 45ms/step
[DEBUG] Feature min range:
Current_A          0.000000e+00

```

```
Voltage_V           4.189170e+00
Cell_Temperature_C -6.309500e-01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.335413e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       -8.500000e-04
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.061345e+00
Delta_Cell_Temperature -2.944440e+00
Rolling_Avg_Voltage_V 4.189234e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature -2.643794e+00
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

```
[DEBUG] Feature max range:
Current_A           0.000000e+00
Voltage_V           4.195230e+00
Cell_Temperature_C 1.493251e+01
Ambient_Temperature_C 0.000000e+00
Time_Seconds        3.338893e+06
Capacity_Ah         3.789700e-01
Energy_Wh           1.589570e+00
Count_#             8.000000e+00
Delta_Voltage       0.000000e+00
Delta_Current        0.000000e+00
Power_W              0.000000e+00
Voltage_Temp_Corrected 4.144893e+00
Delta_Cell_Temperature 2.103100e-01
Rolling_Avg_Voltage_V 4.195655e+00
Rolling_Avg_Current_A 0.000000e+00
Cumulative_Capacity_Window 0.000000e+00
Current_x_Cell_Temperature -0.000000e+00
Voltage_x_Cell_Temperature 6.264531e+01
Last_Current_Sign_Change 0.000000e+00
dtype: float64
```

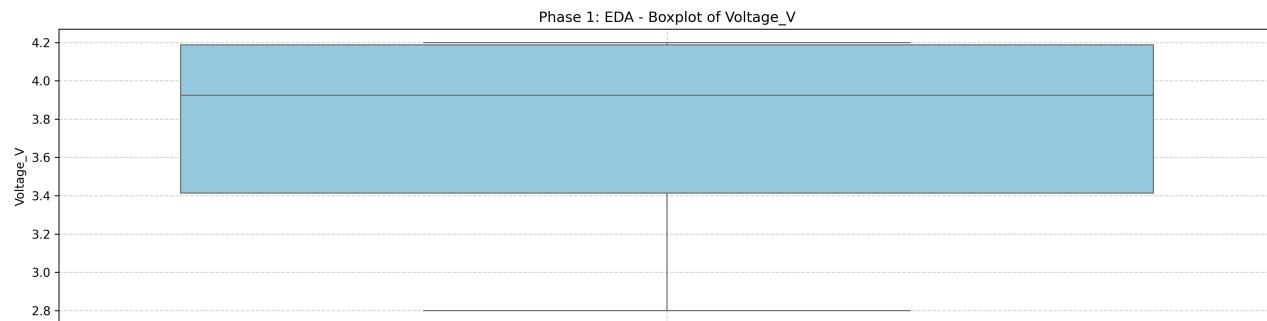
Completed 100 rolling predictions and saved plot.

```
--- Full Pipeline Execution Complete ---
Trained model saved to: soc_prediction_model.keras
Scalers saved to: scaler_X.pkl and scaler_Y.pkl
XGBoost corrector model saved to: xgboost_corrector.json
```

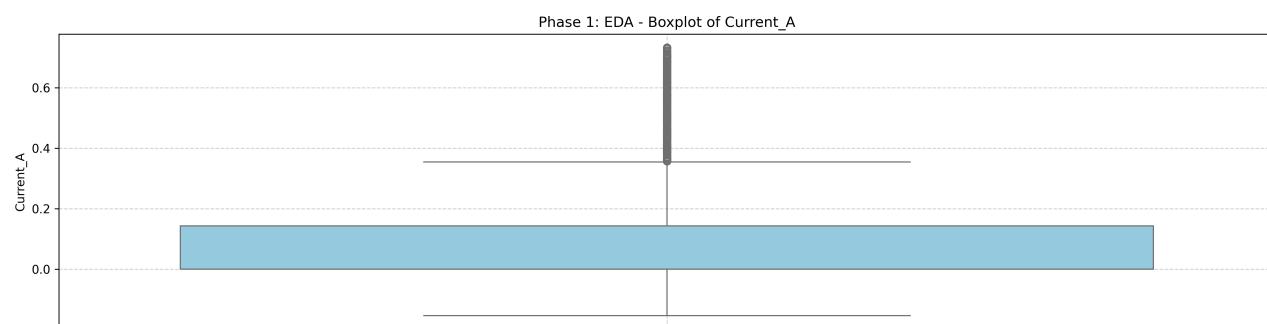
Phase 1: EDA - Data Distribution & Outliers

Phase 1: EDA - Data Distribution & Outliers (Cont.)

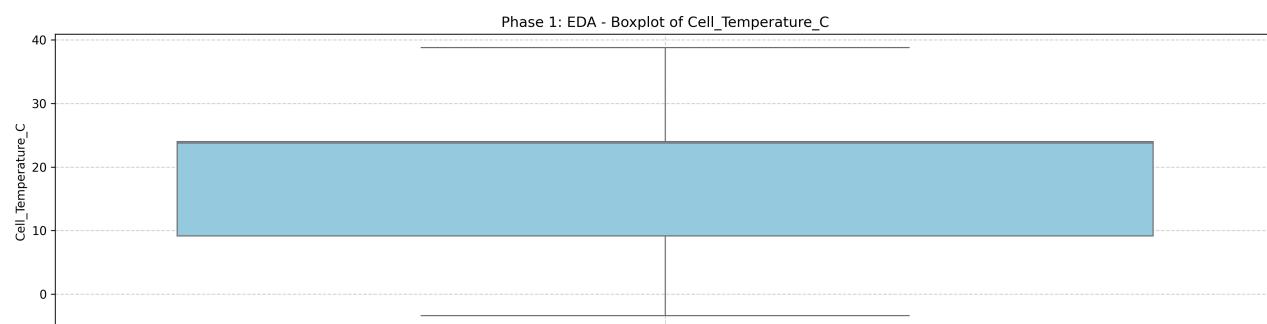
Plot: Boxplot of Voltage_V



Plot: Boxplot of Current_A

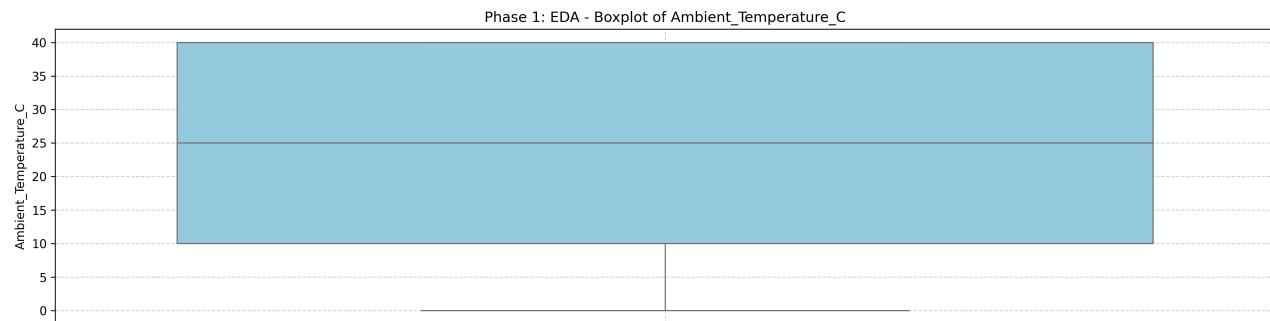


Plot: Boxplot of Cell_Temperature_C

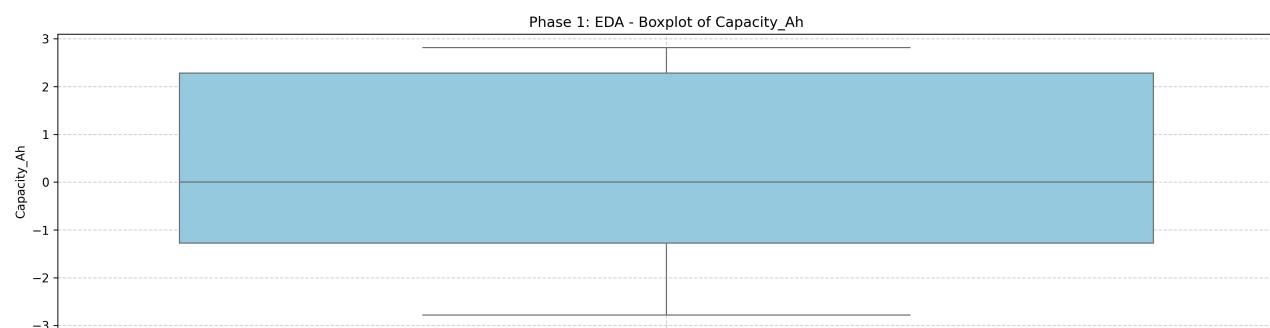


Phase 1: EDA - Data Distribution & Outliers (Cont.)

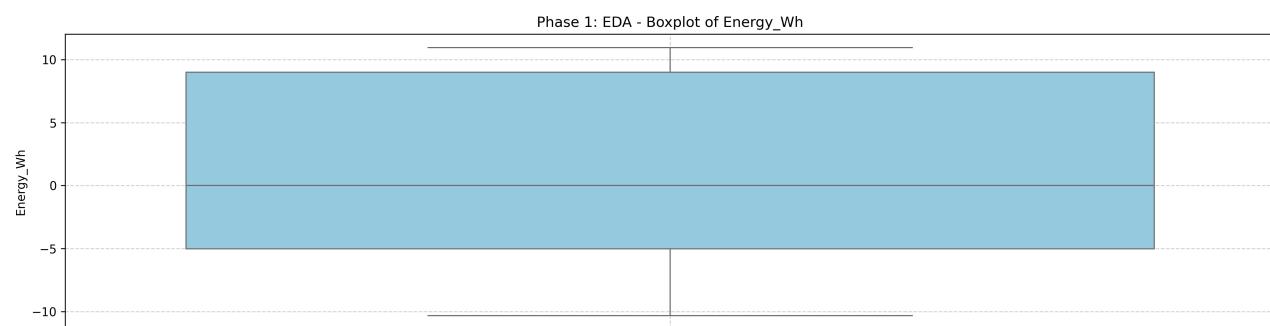
Plot: Boxplot of Ambient_Temperature_C



Plot: Boxplot of Capacity_Ah

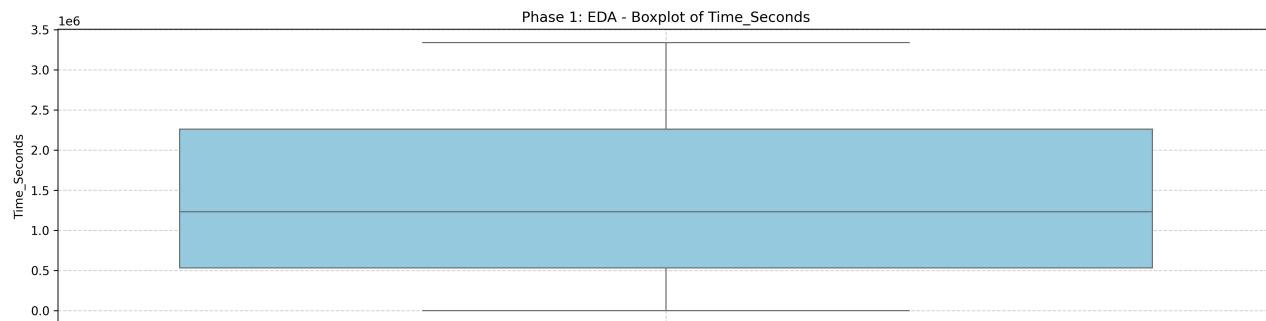


Plot: Boxplot of Energy_Wh

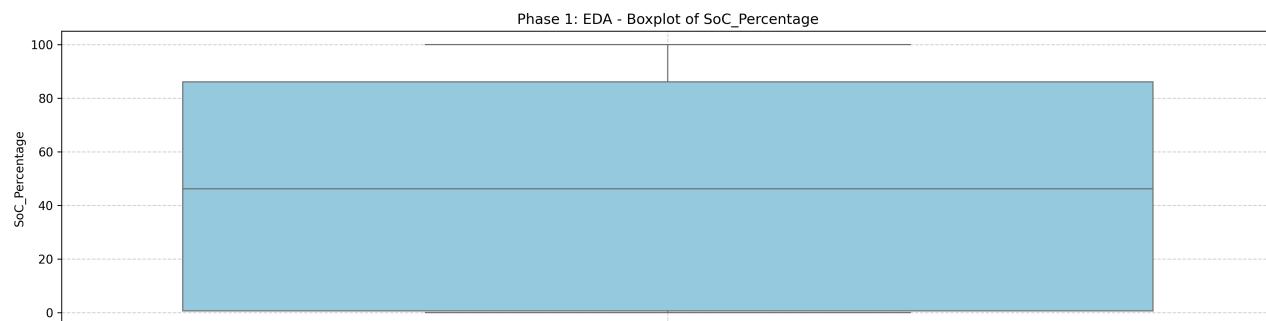


Phase 1: EDA - Data Distribution & Outliers (Cont.)

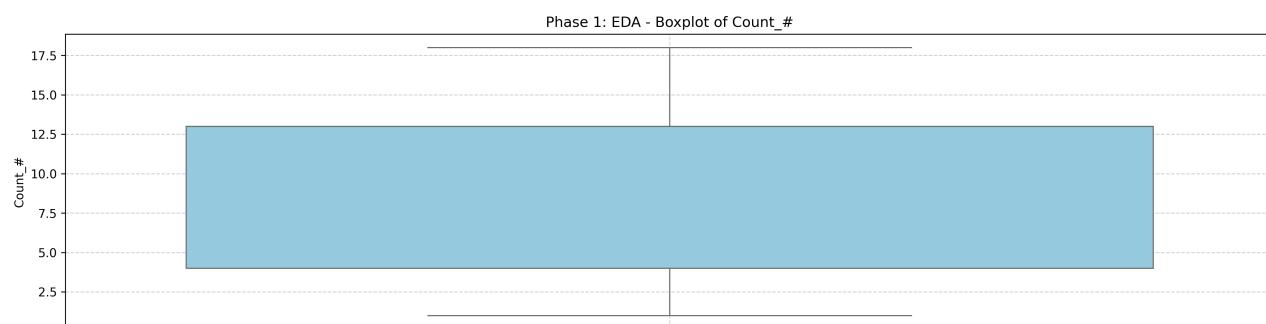
Plot: Boxplot of Time_Seconds



Plot: Boxplot of SoC_Percentage

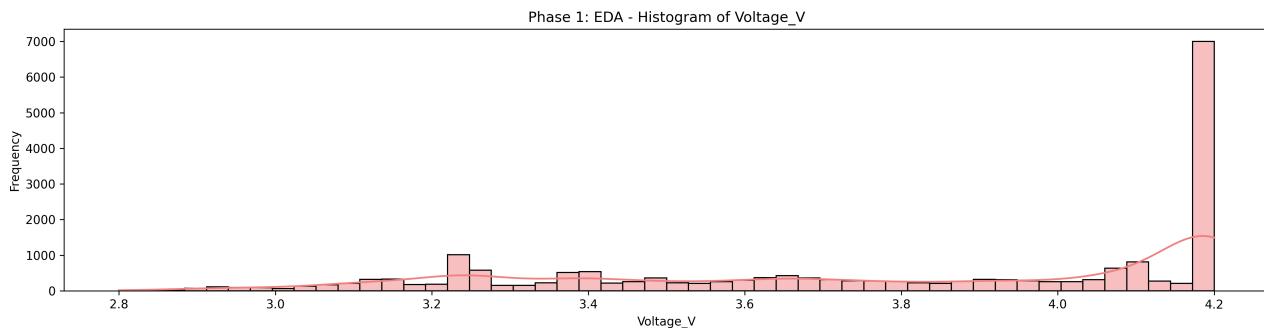


Plot: Boxplot of Count_#

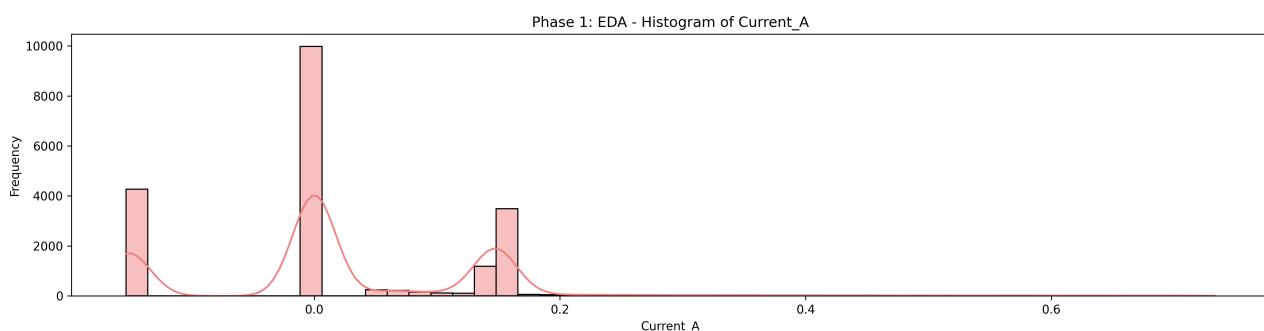


Phase 1: EDA - Data Distribution & Outliers (Cont.)

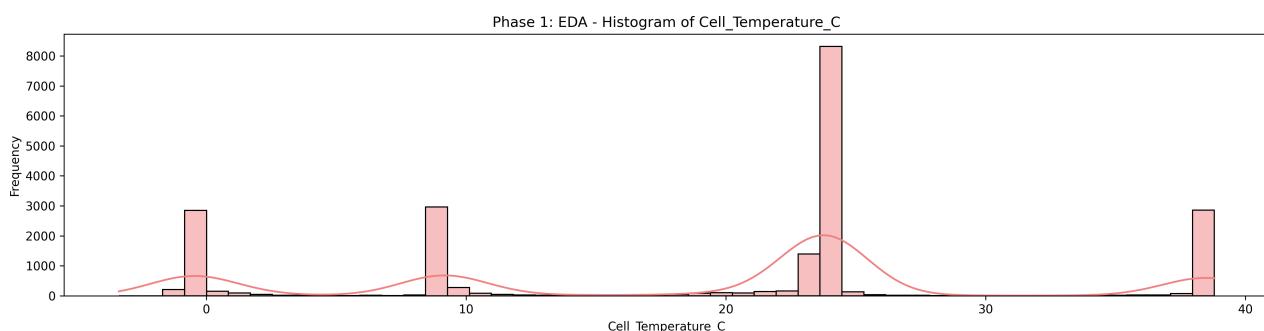
Plot: Histogram of Voltage_V



Plot: Histogram of Current_A

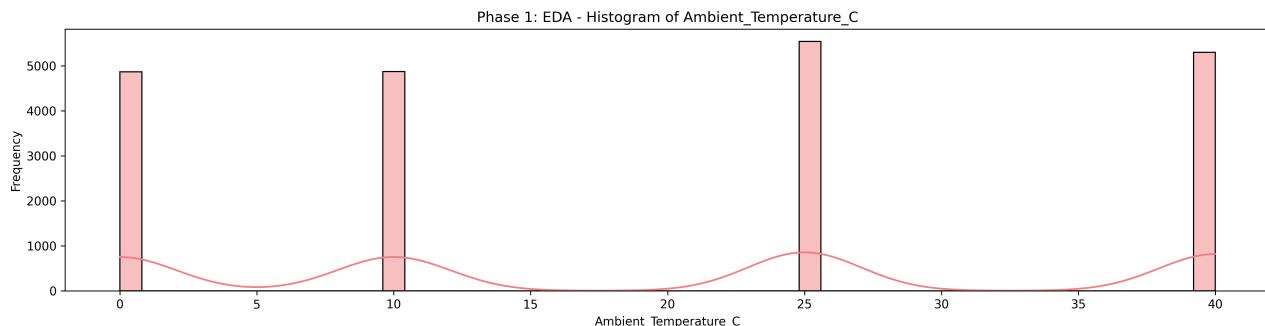


Plot: Histogram of Cell_Temperature_C

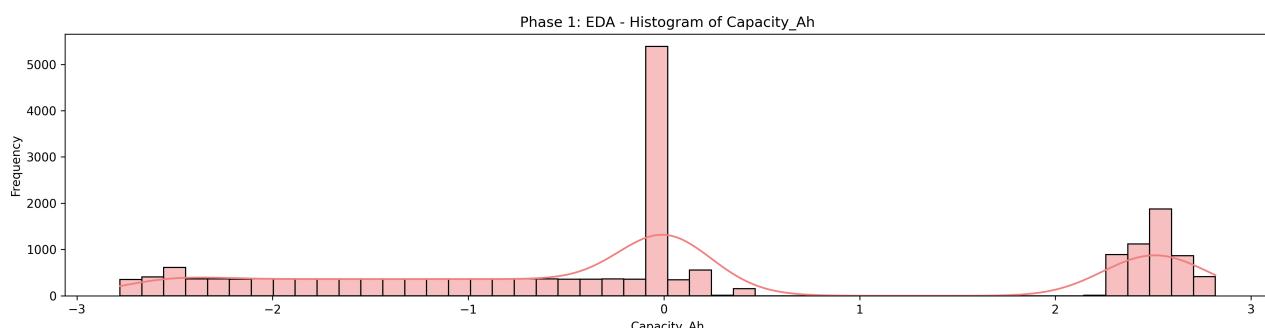


Phase 1: EDA - Data Distribution & Outliers (Cont.)

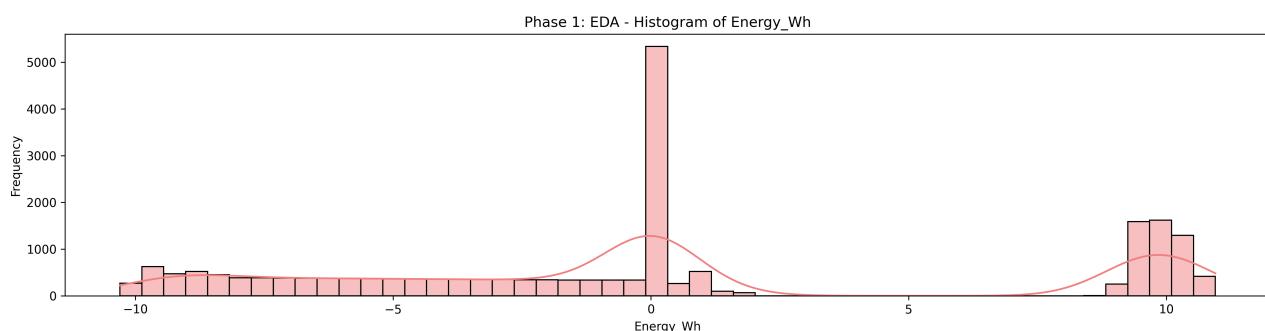
Plot: Histogram of Ambient_Temperature_C



Plot: Histogram of Capacity_Ah

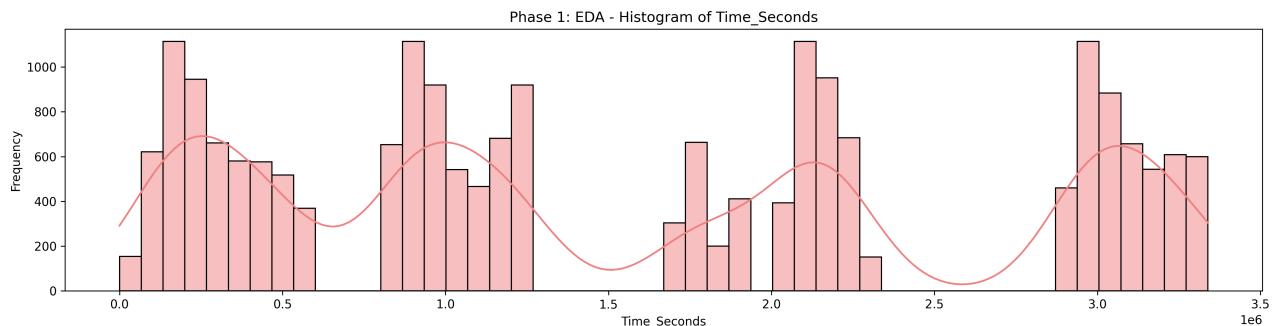


Plot: Histogram of Energy_Wh

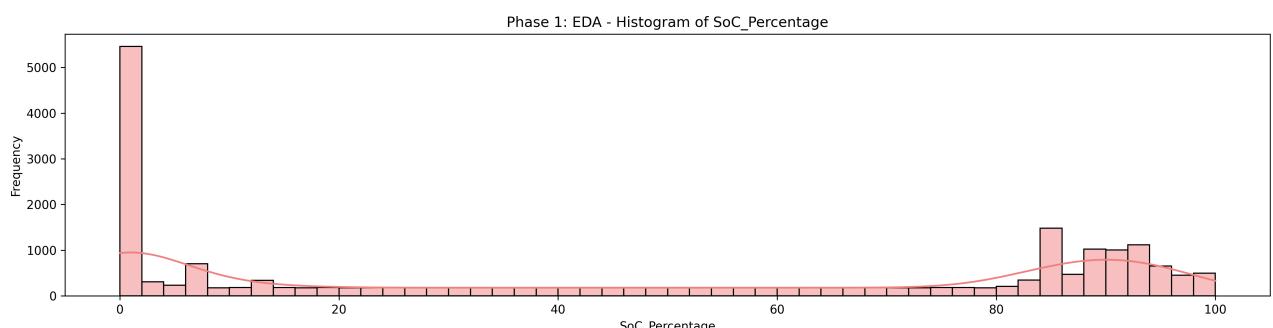


Phase 1: EDA - Data Distribution & Outliers (Cont.)

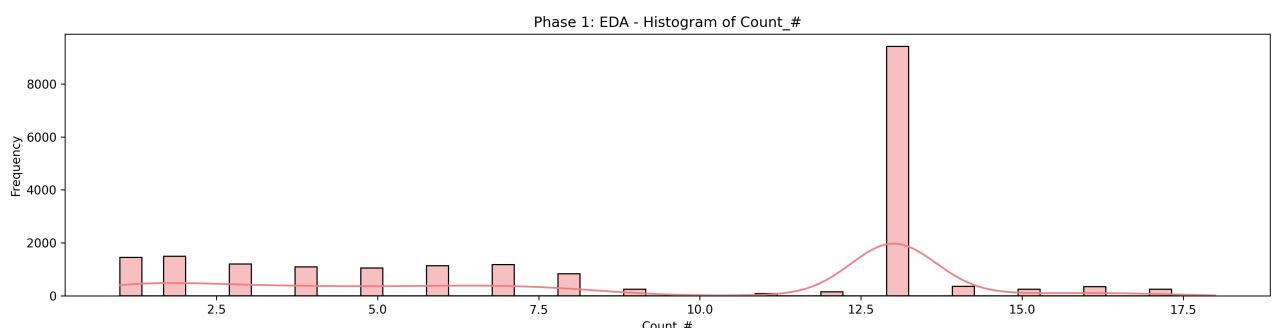
Plot: Histogram of Time_Seconds



Plot: Histogram of SoC_Percentage



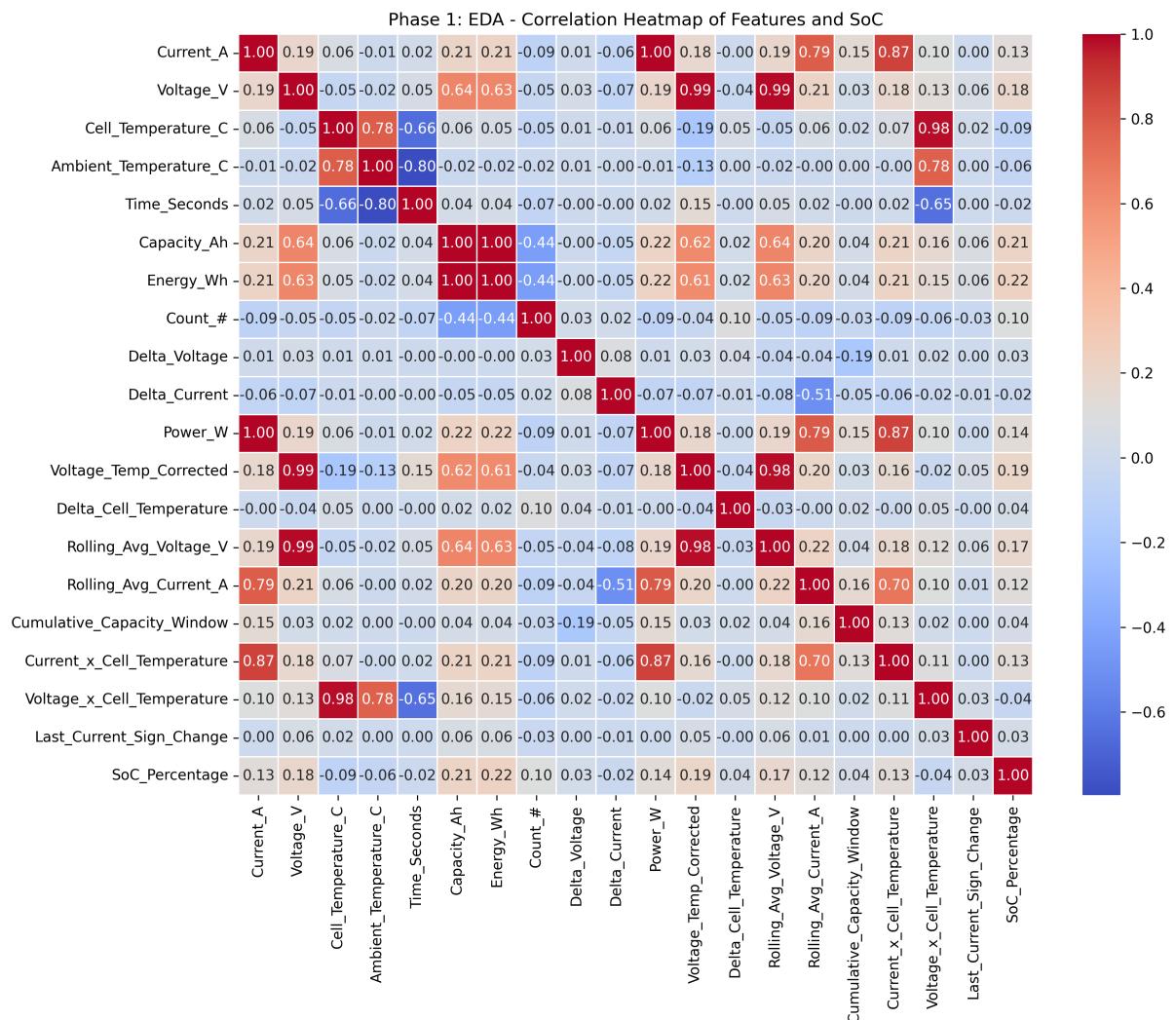
Plot: Histogram of Count_#



Phase 1: EDA - Feature Relationships

Phase 1: EDA - Feature Relationships (Cont.)

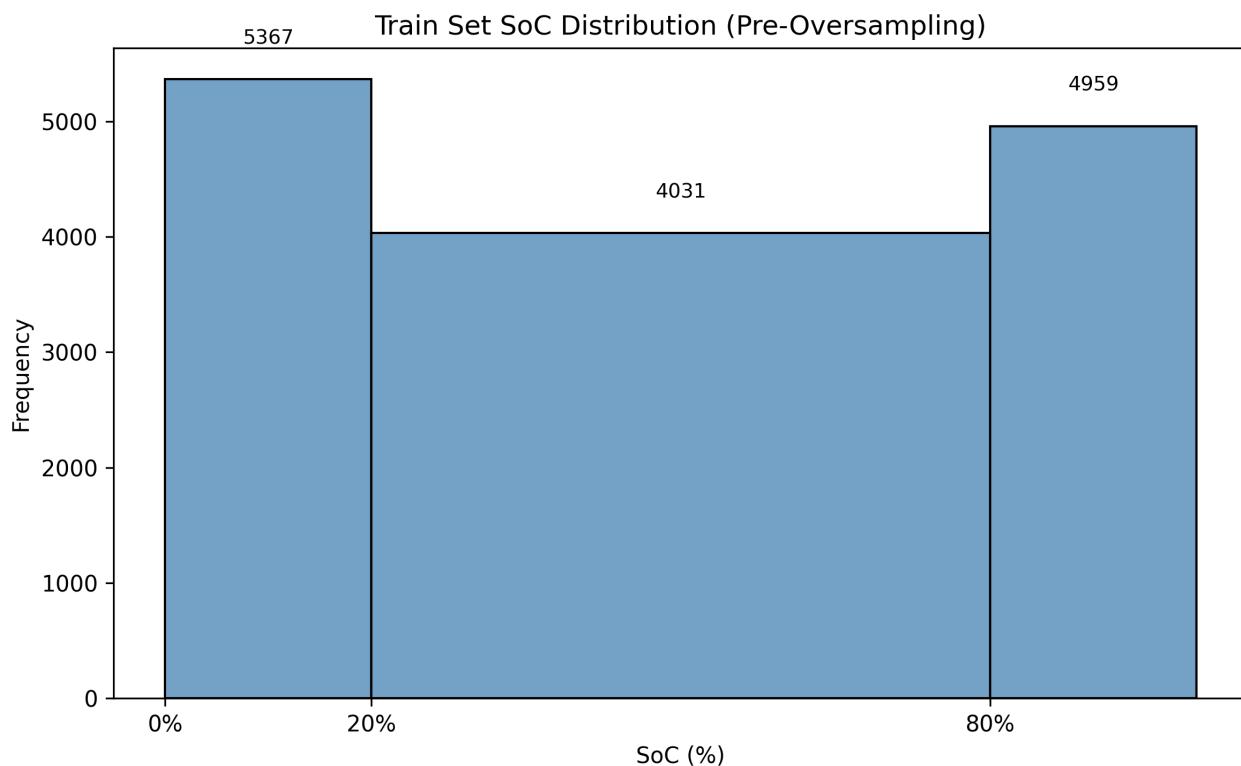
Plot: Correlation Heatmap of Features and SoC



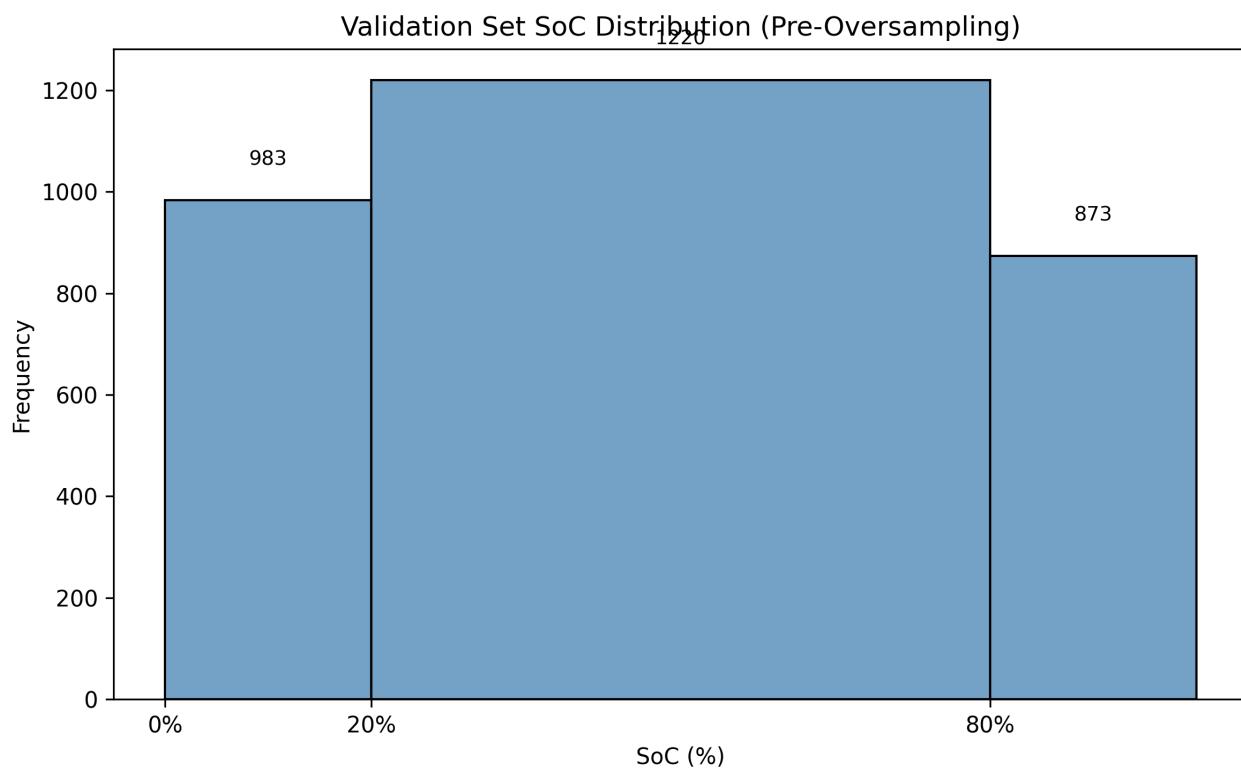
Phase 1: Data Distribution - Train Set

Phase 1: Data Distribution - Train Set (Cont.)

Plot: Train Set SoC Distribution (Pre-Oversampling)

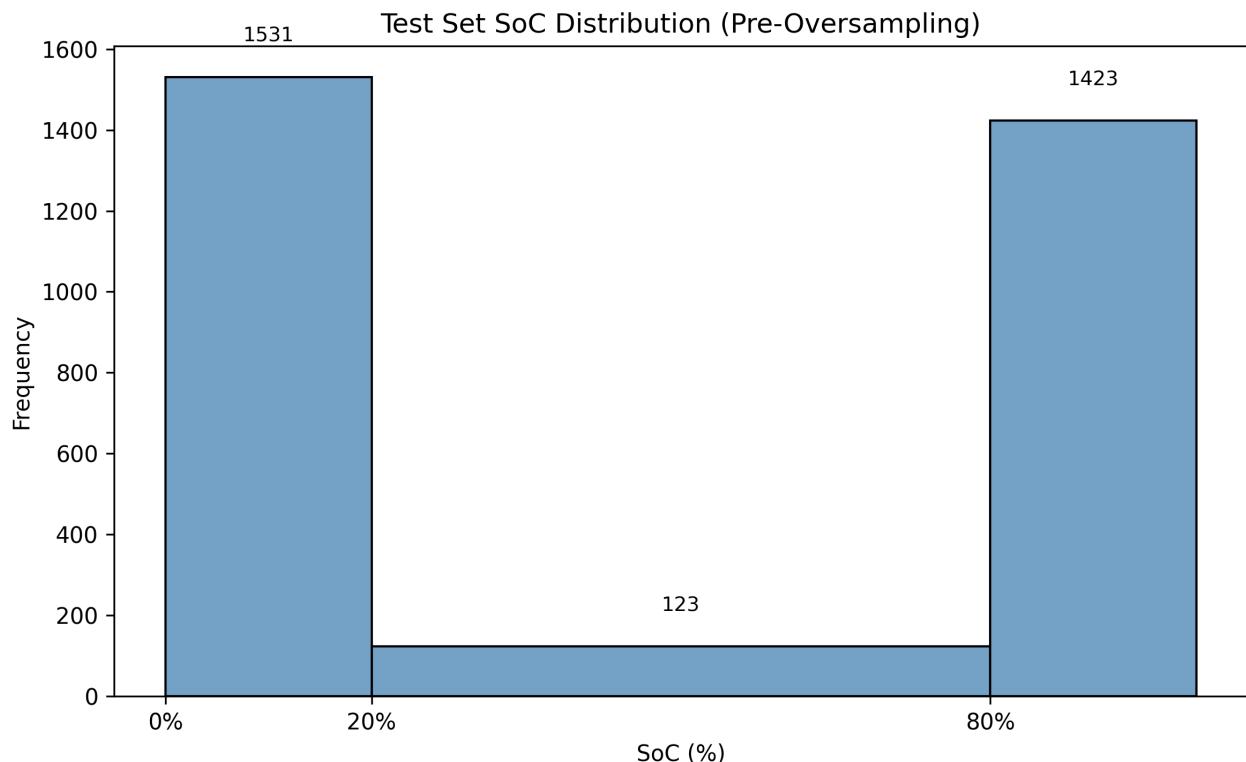


Plot: Validation Set SoC Distribution (Pre-Oversampling)



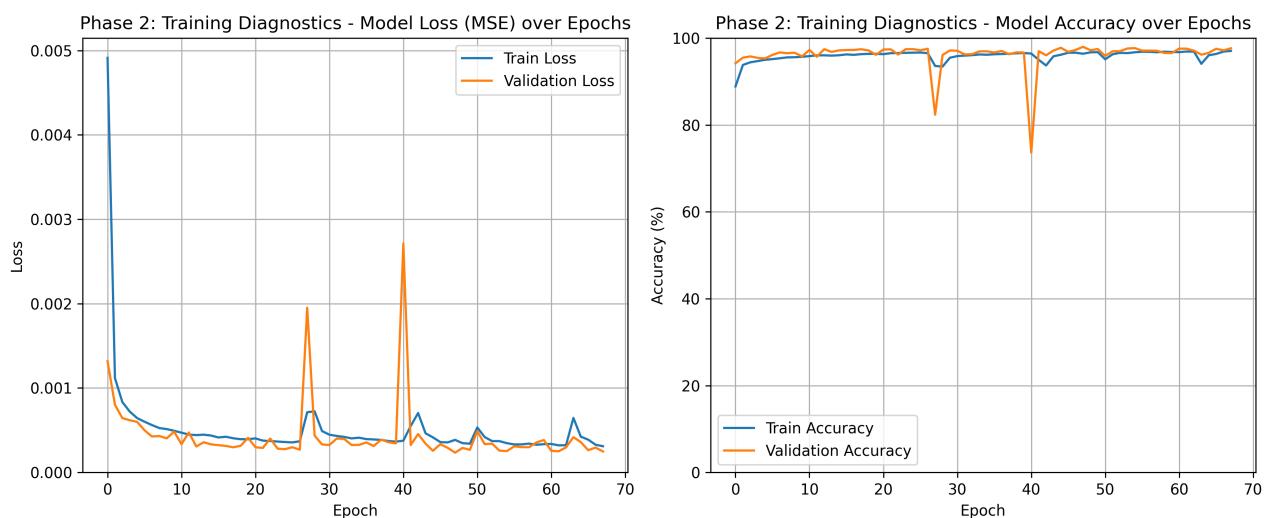
Phase 1: Data Distribution - Train Set (Cont.)

Plot: Test Set SoC Distribution (Pre-Oversampling)



Phase 2: Training Diagnostics

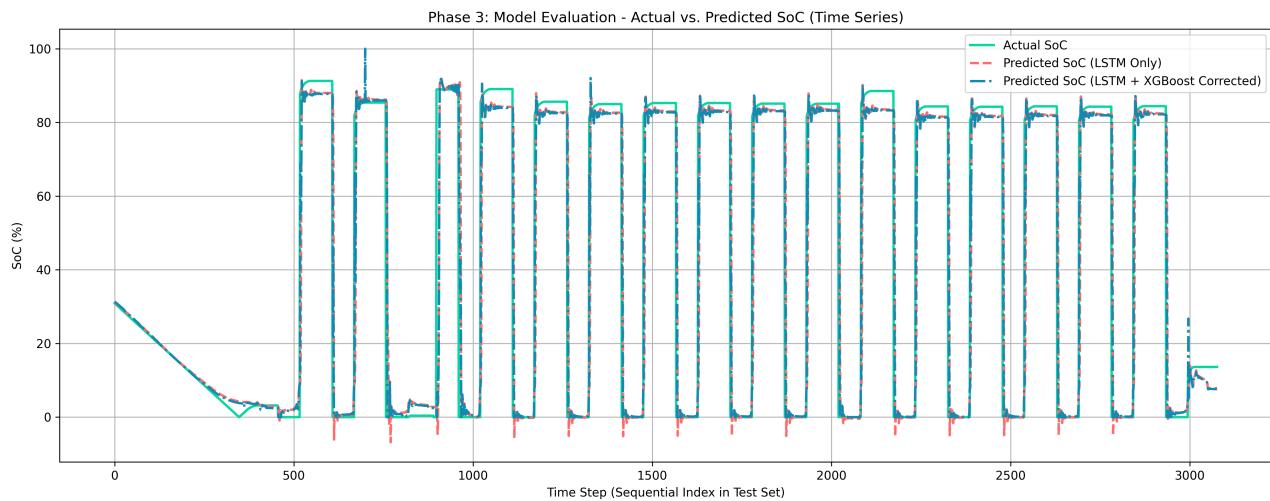
Plot: Model Training History



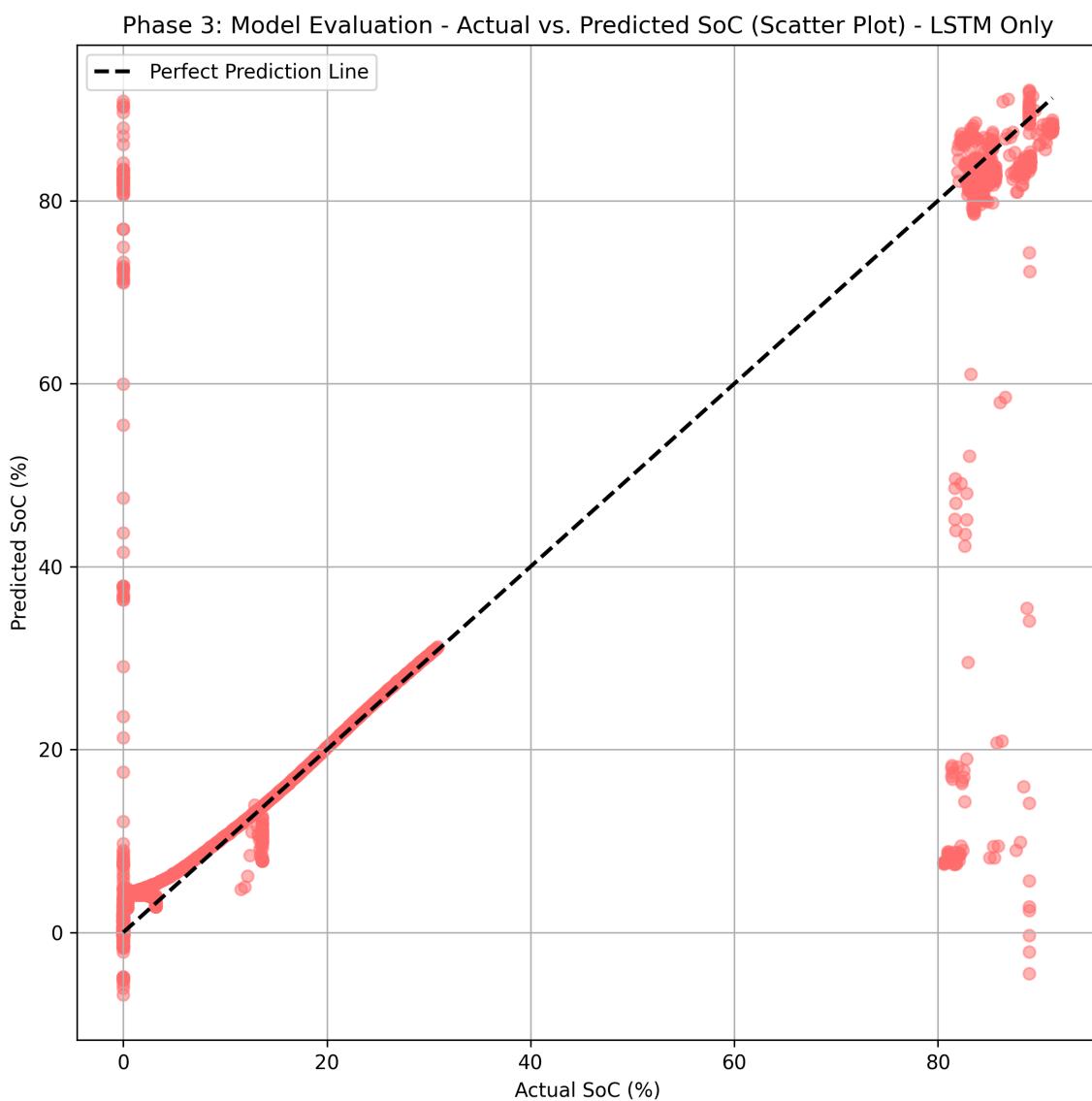
Phase 3: Model Evaluation - Core Performance

Phase 3: Model Evaluation - Core Performance (Cont.)

Plot: Actual vs. Predicted SoC (Time Series) - All Models

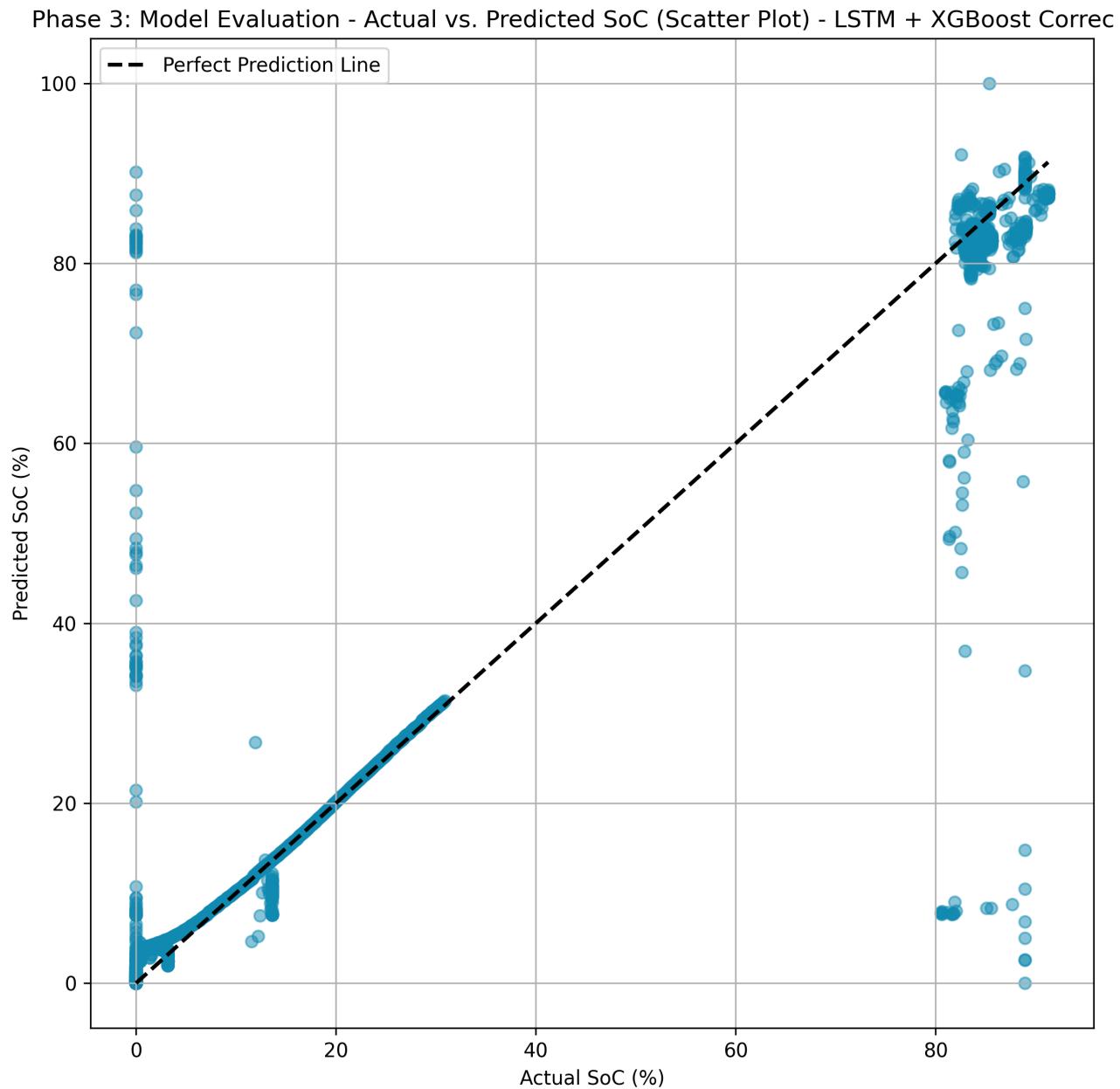


Plot: Actual vs. Predicted SoC (Scatter Plot) - LSTM Only



Phase 3: Model Evaluation - Core Performance (Cont.)

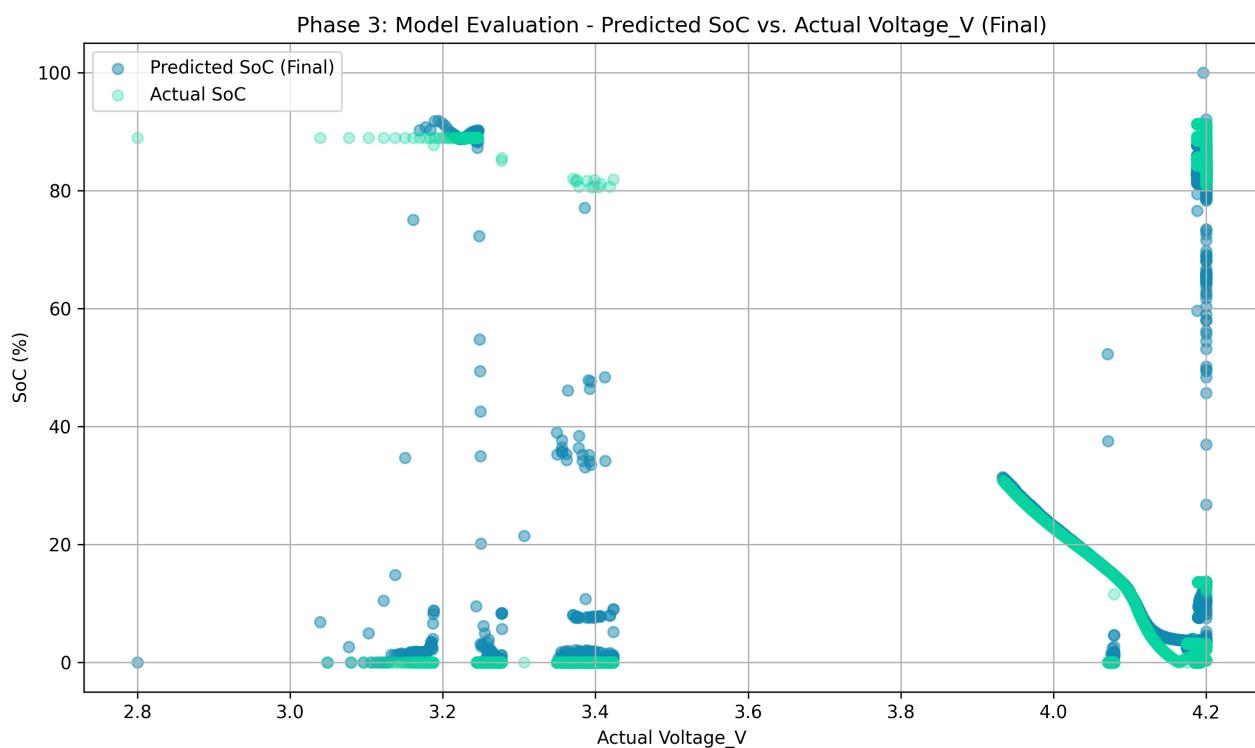
Plot: Actual vs. Predicted SoC (Scatter Plot) - LSTM + XGBoost Corrected



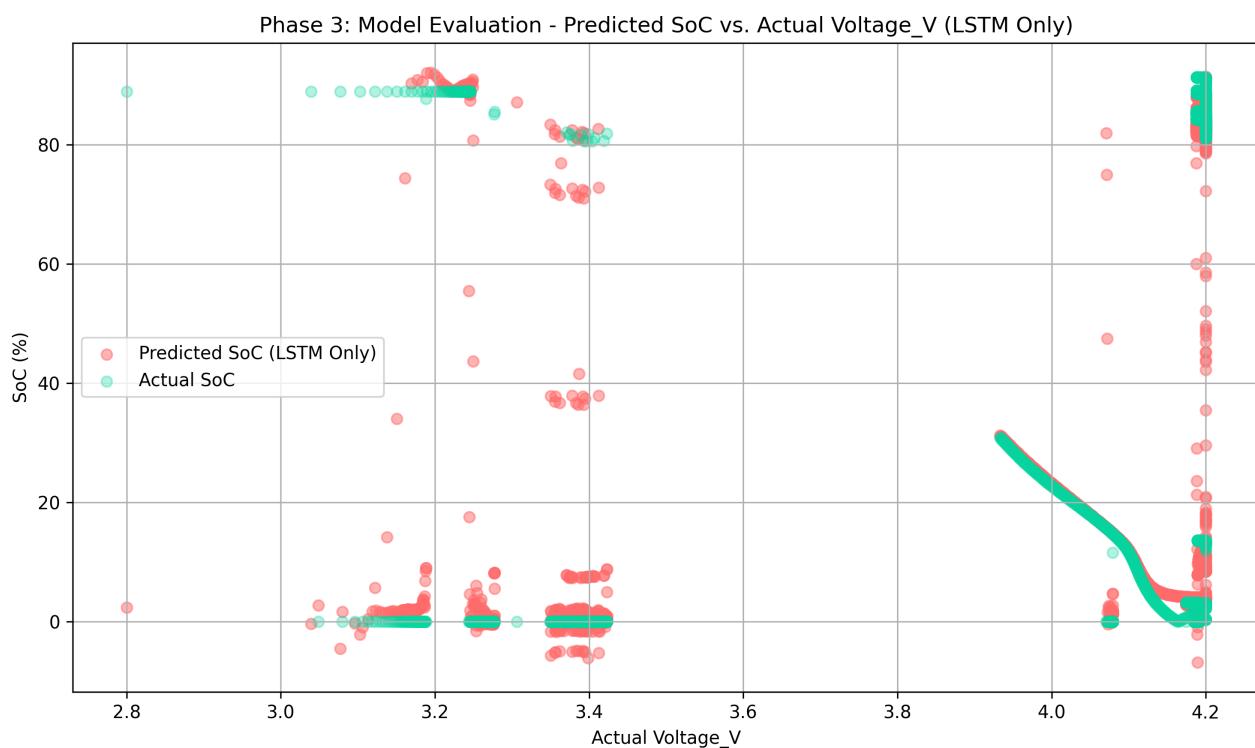
Phase 3: Model Evaluation - Learned Relationships

Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Voltage_V (Final)

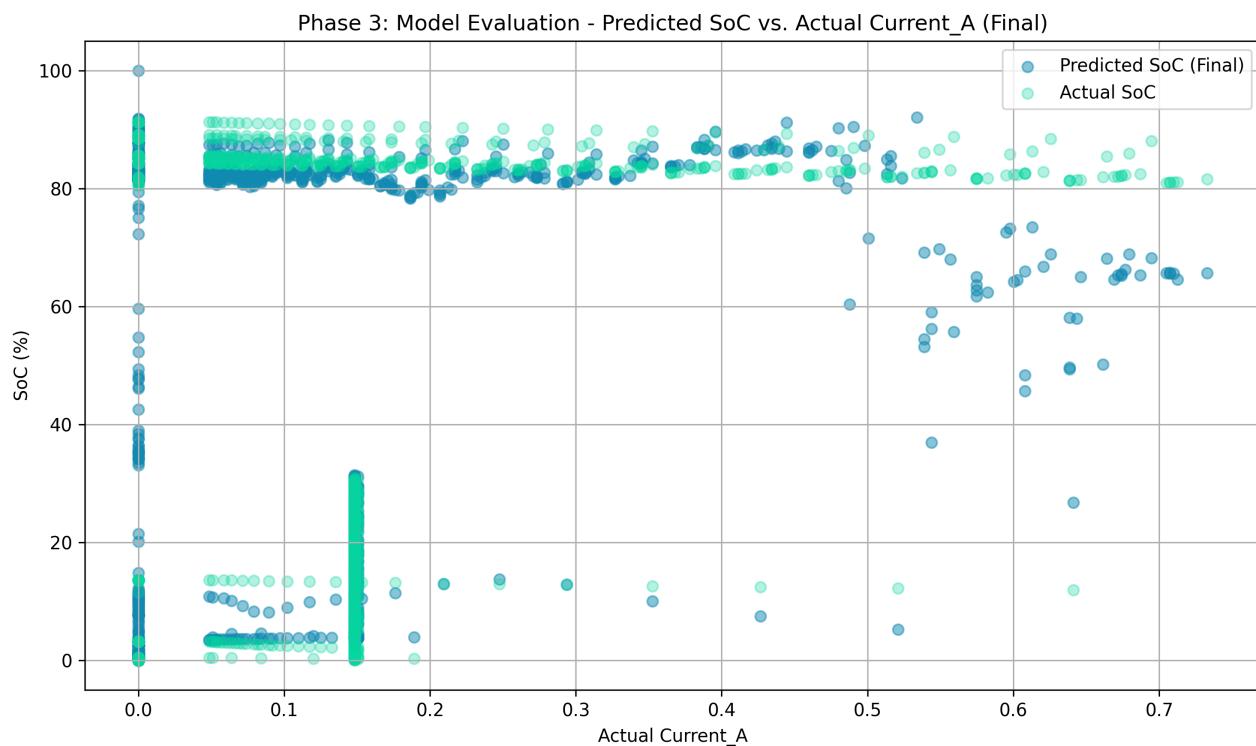


Plot: Predicted SoC vs. Voltage_V (LSTM Only)

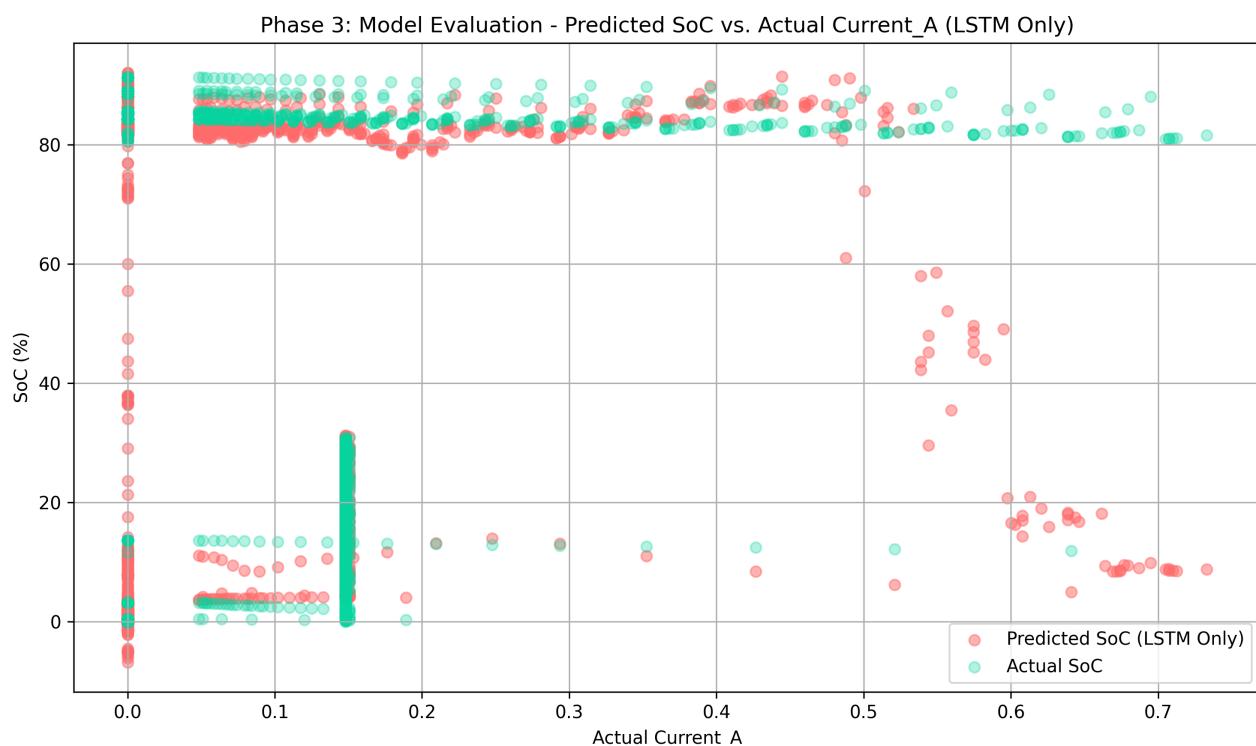


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Current_A (Final)

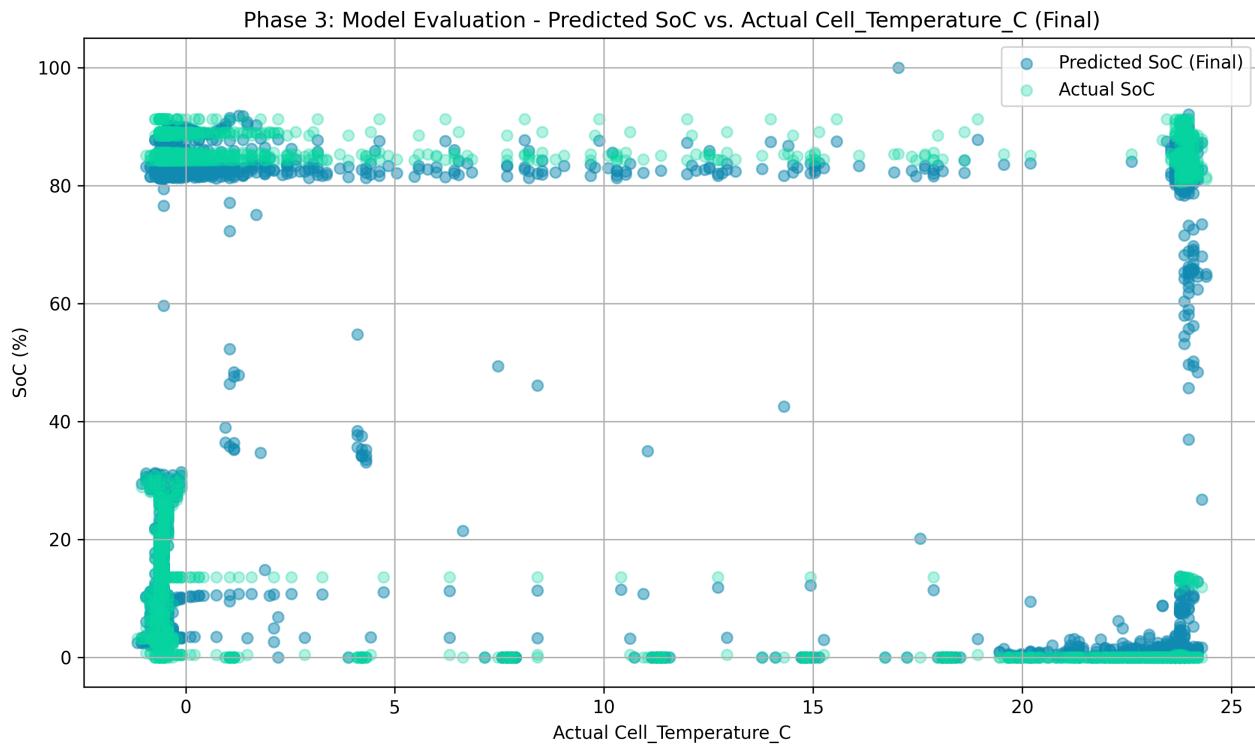


Plot: Predicted SoC vs. Current_A (LSTM Only)

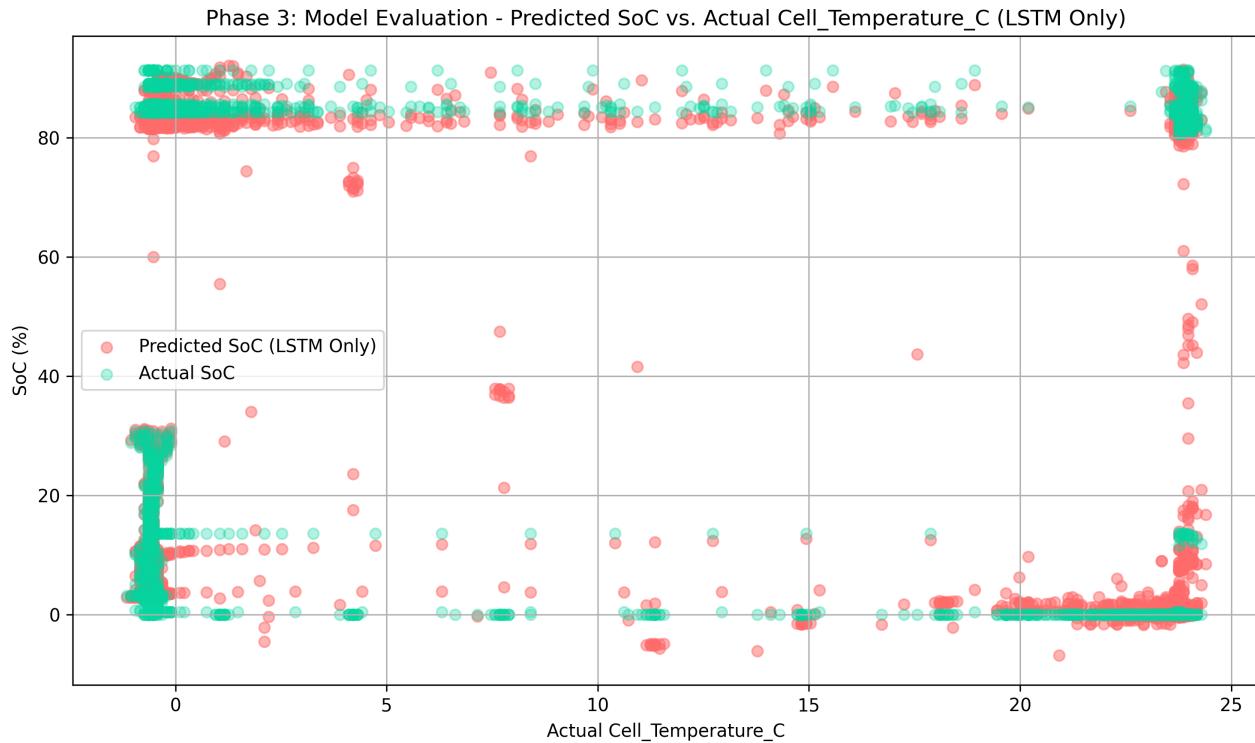


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Cell_Temperature_C (Final)

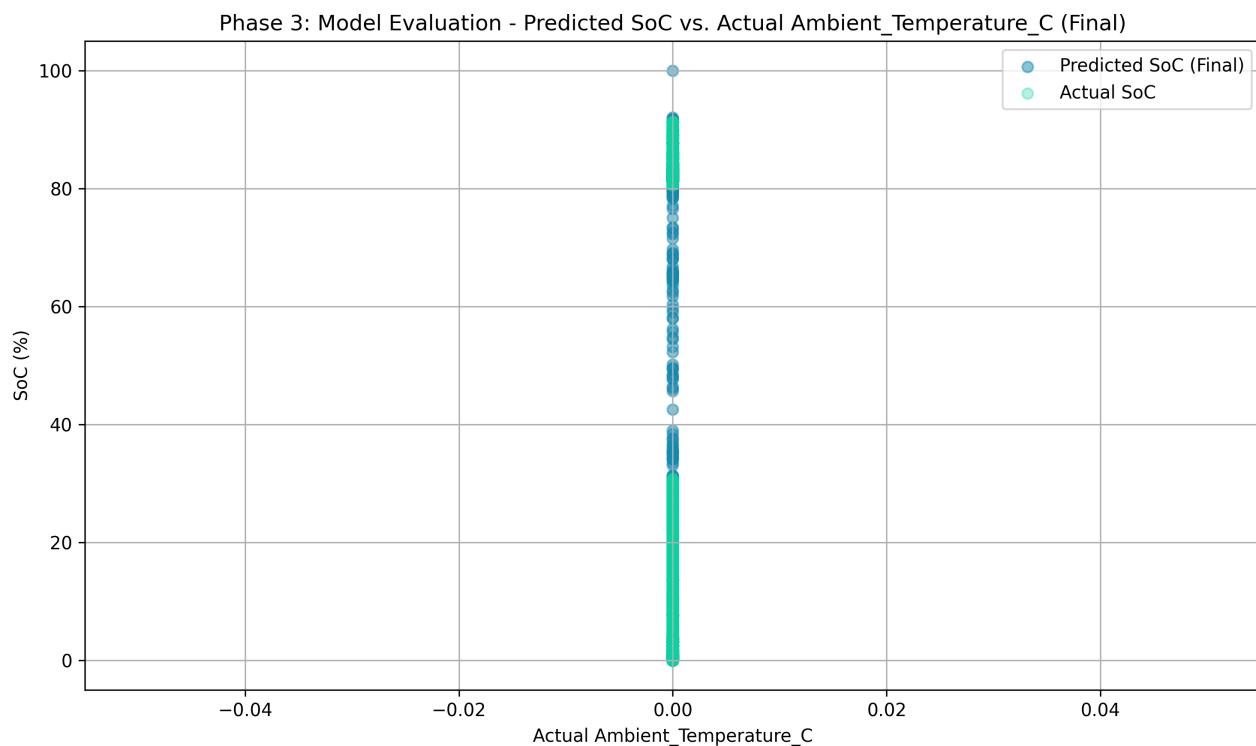


Plot: Predicted SoC vs. Cell_Temperature_C (LSTM Only)

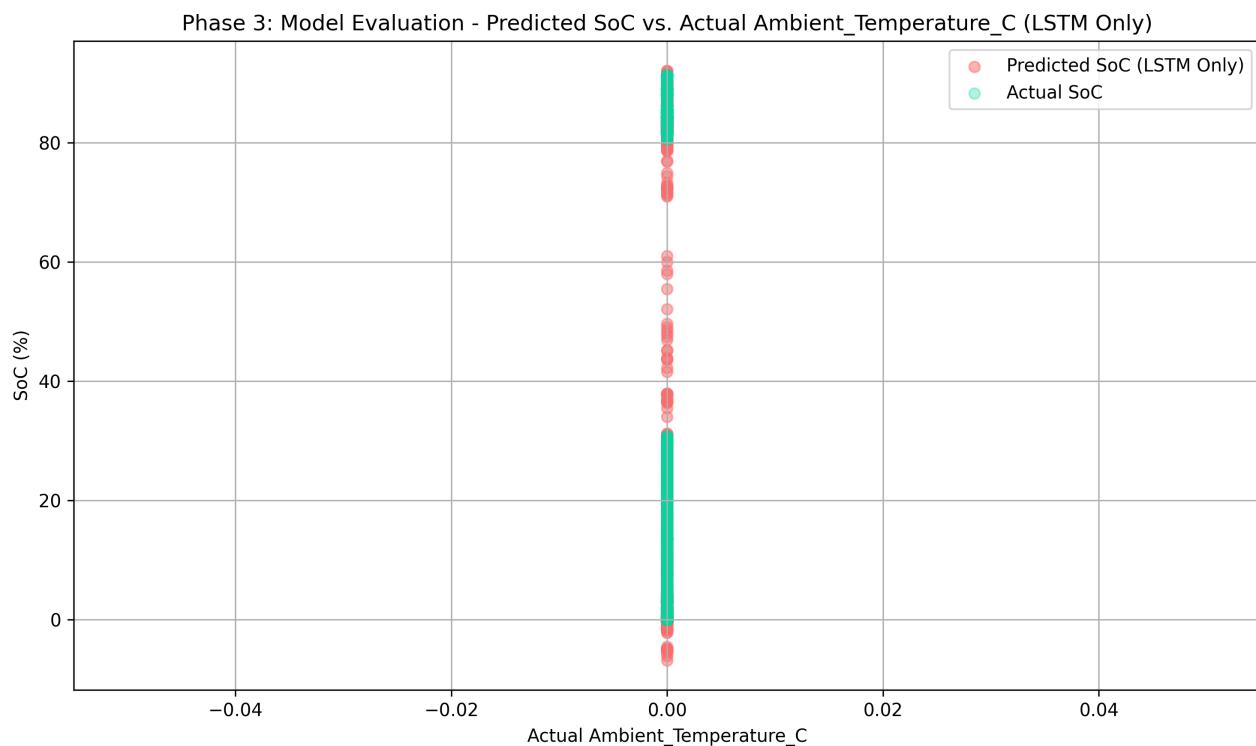


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Ambient_Temperature_C (Final)

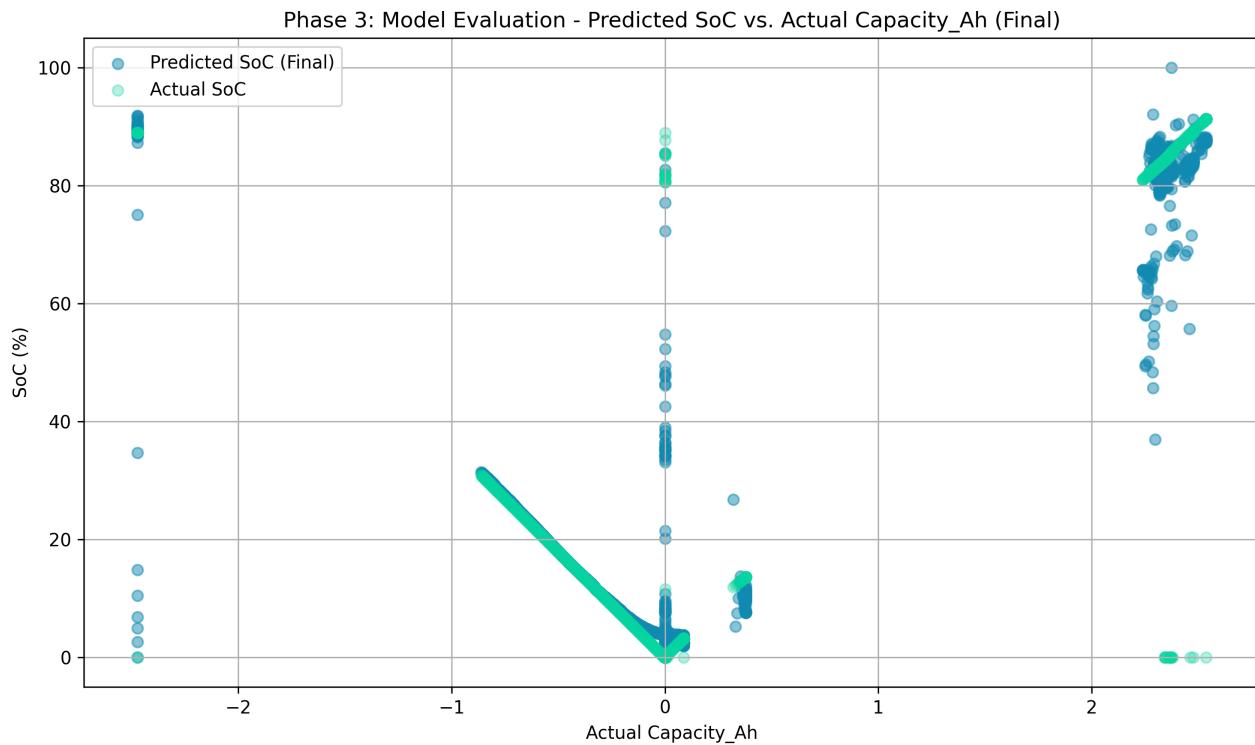


Plot: Predicted SoC vs. Ambient_Temperature_C (LSTM Only)

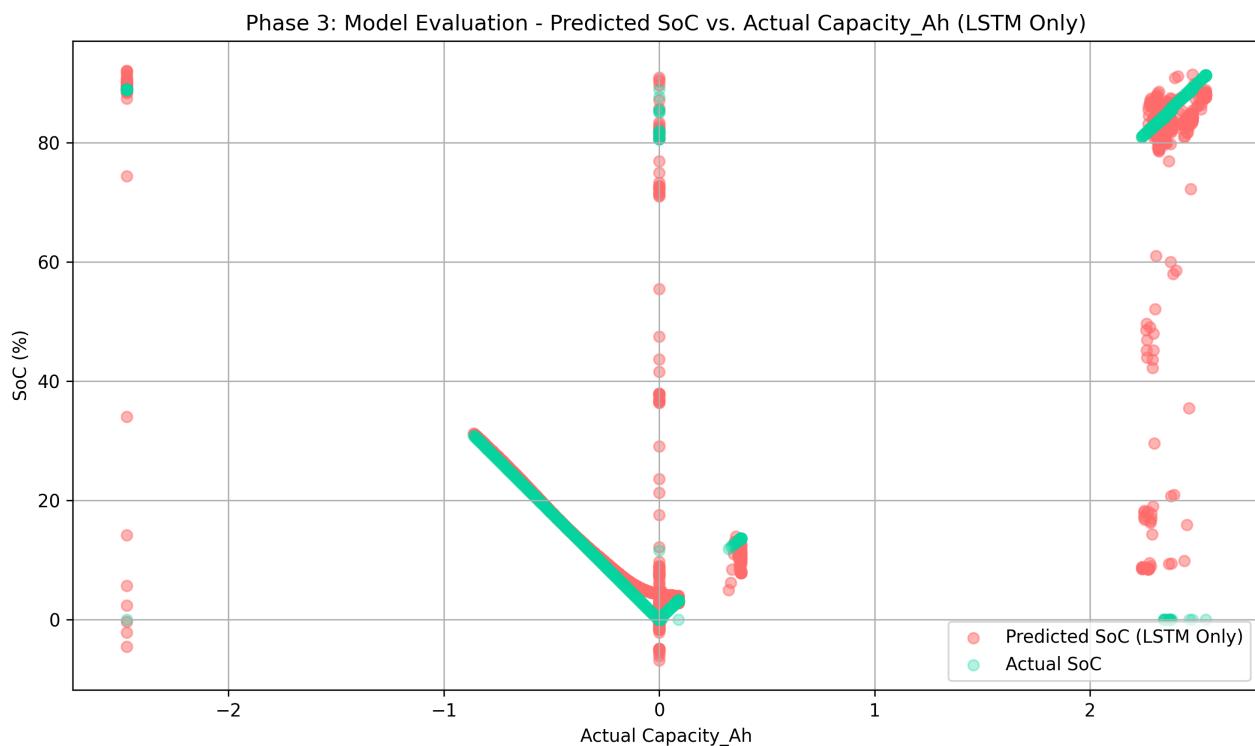


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Capacity_Ah (Final)

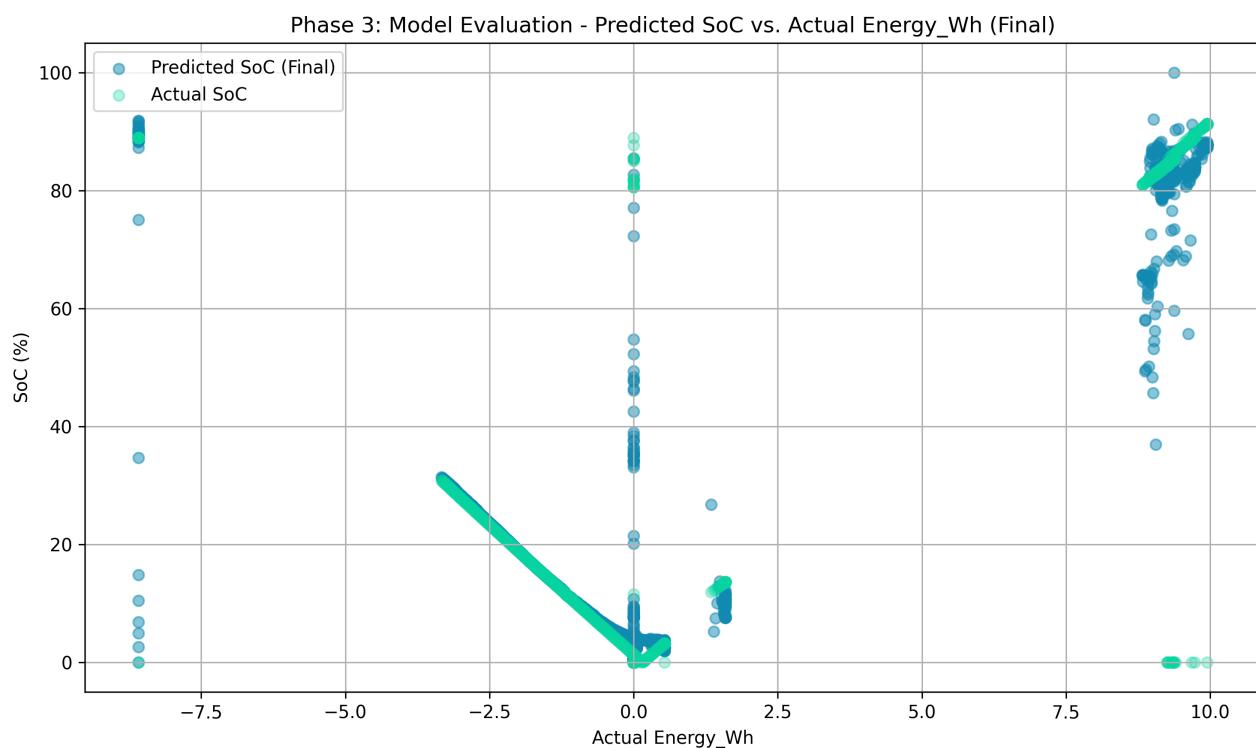


Plot: Predicted SoC vs. Capacity_Ah (LSTM Only)

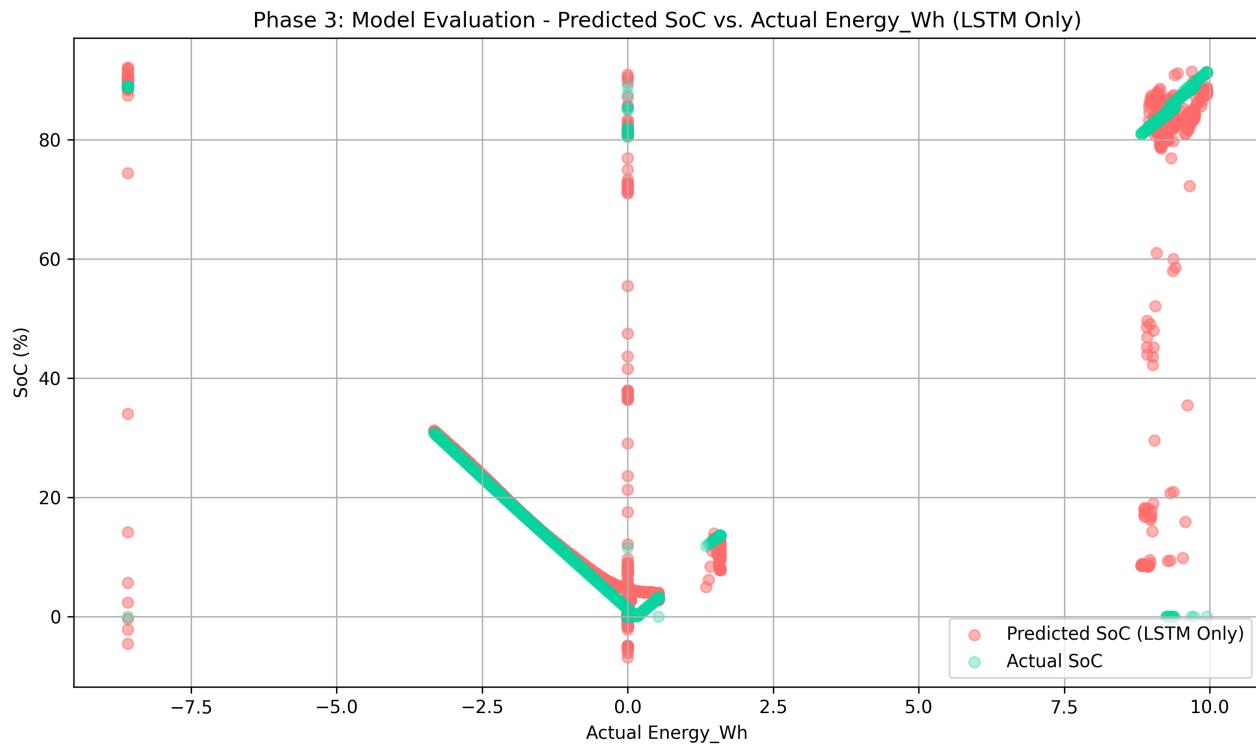


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Energy_Wh (Final)

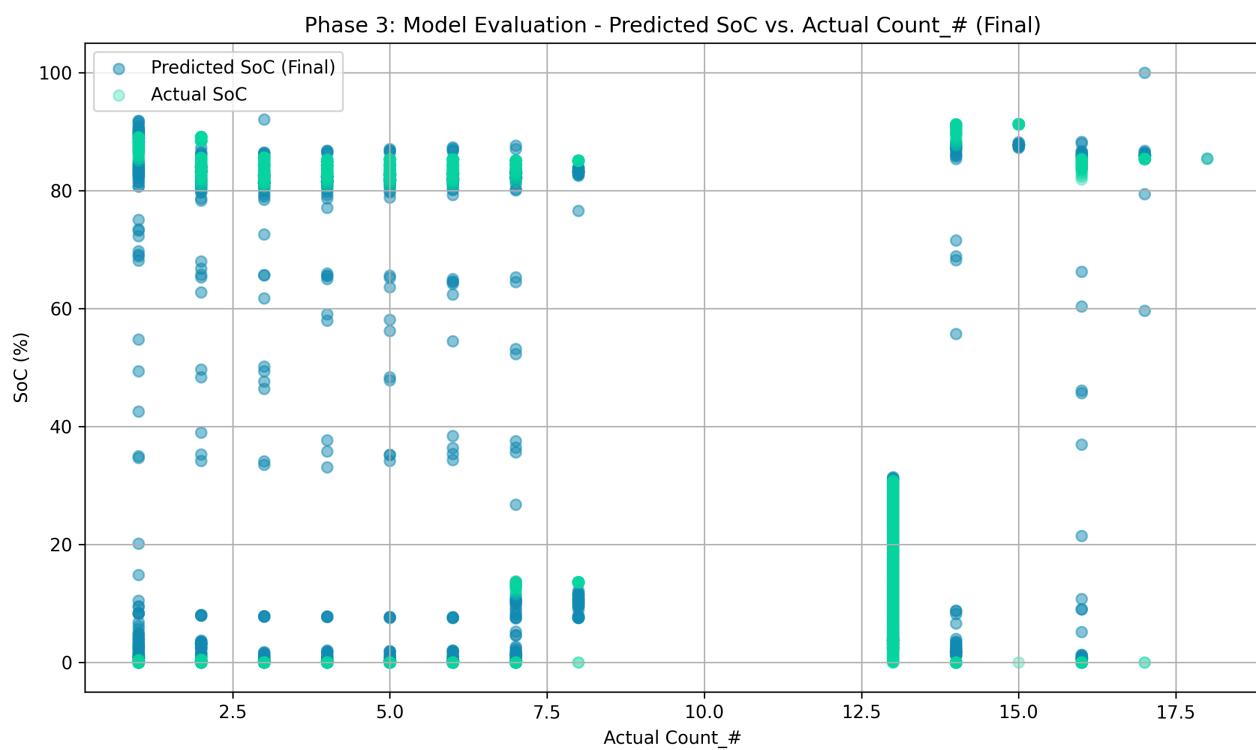


Plot: Predicted SoC vs. Energy_Wh (LSTM Only)

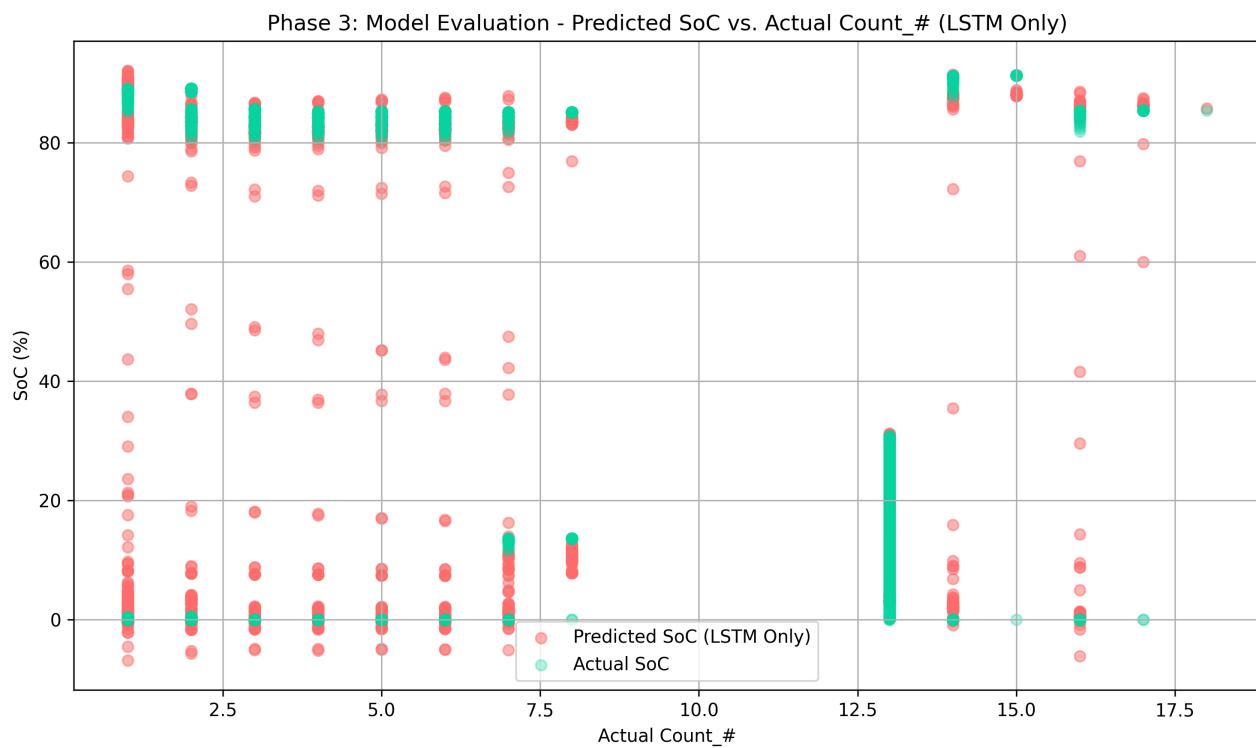


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Count_# (Final)

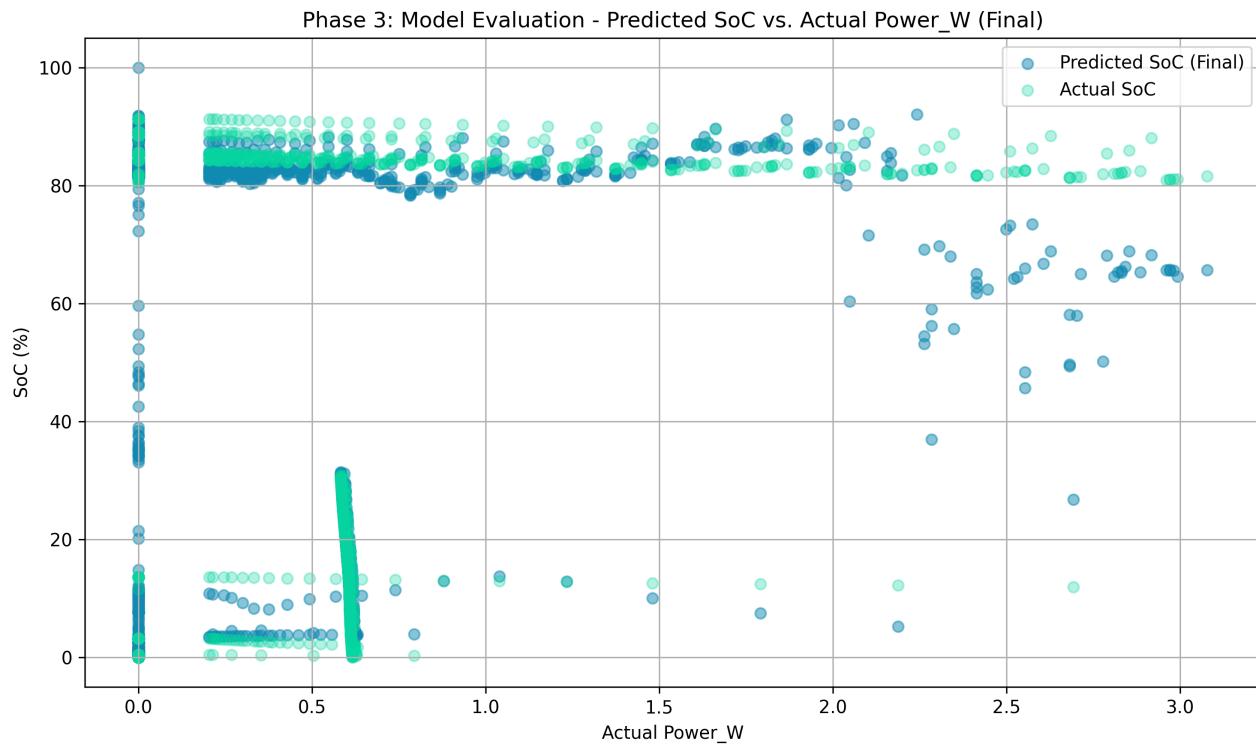


Plot: Predicted SoC vs. Count_# (LSTM Only)

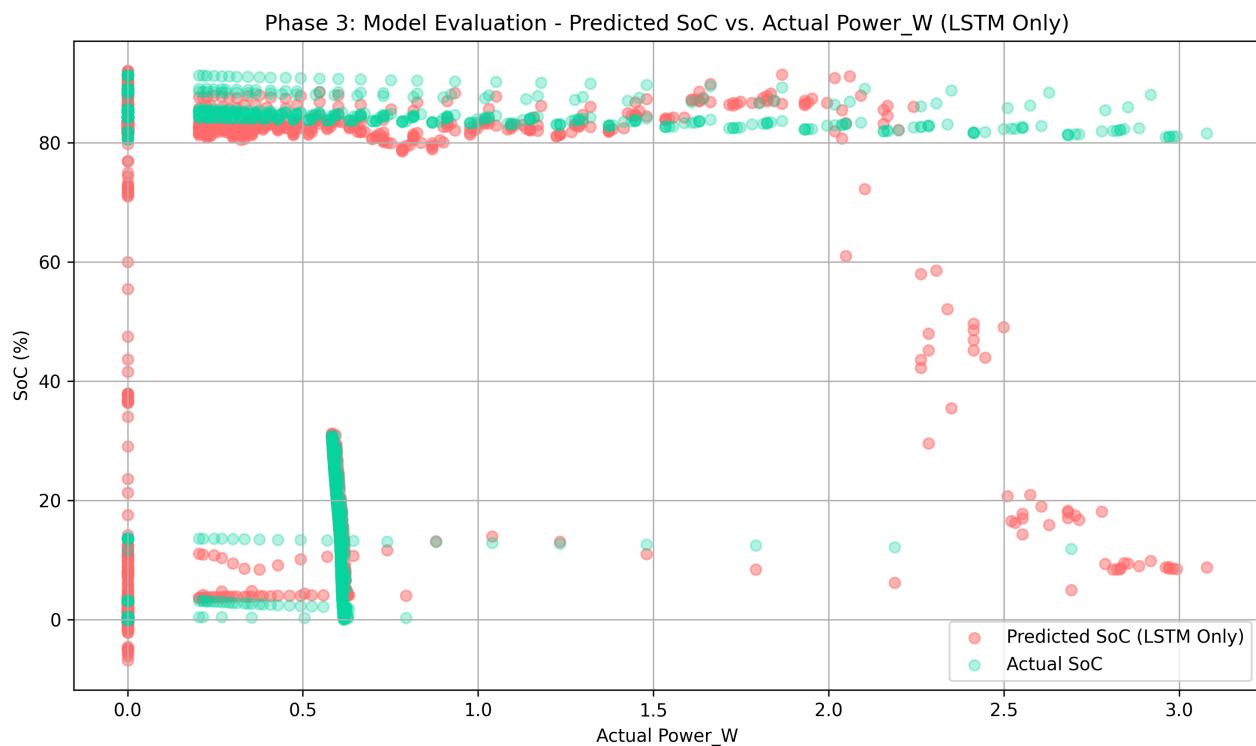


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Power_W (Final)

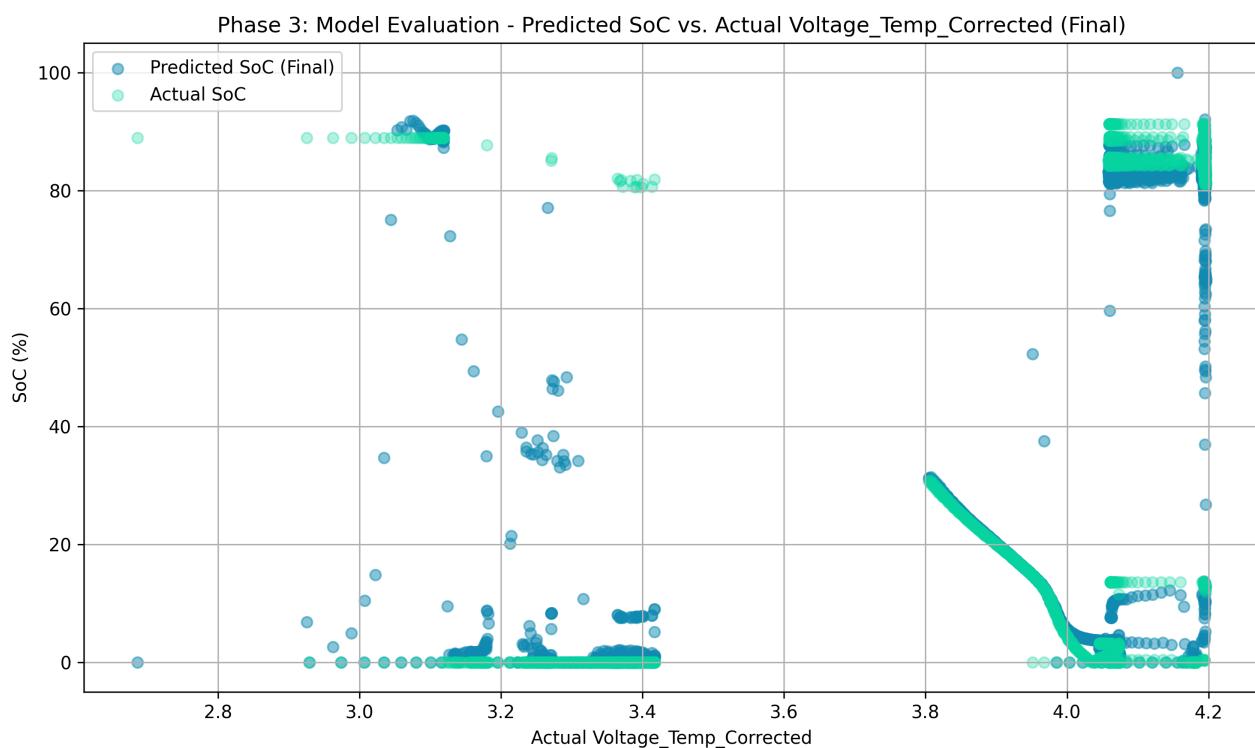


Plot: Predicted SoC vs. Power_W (LSTM Only)

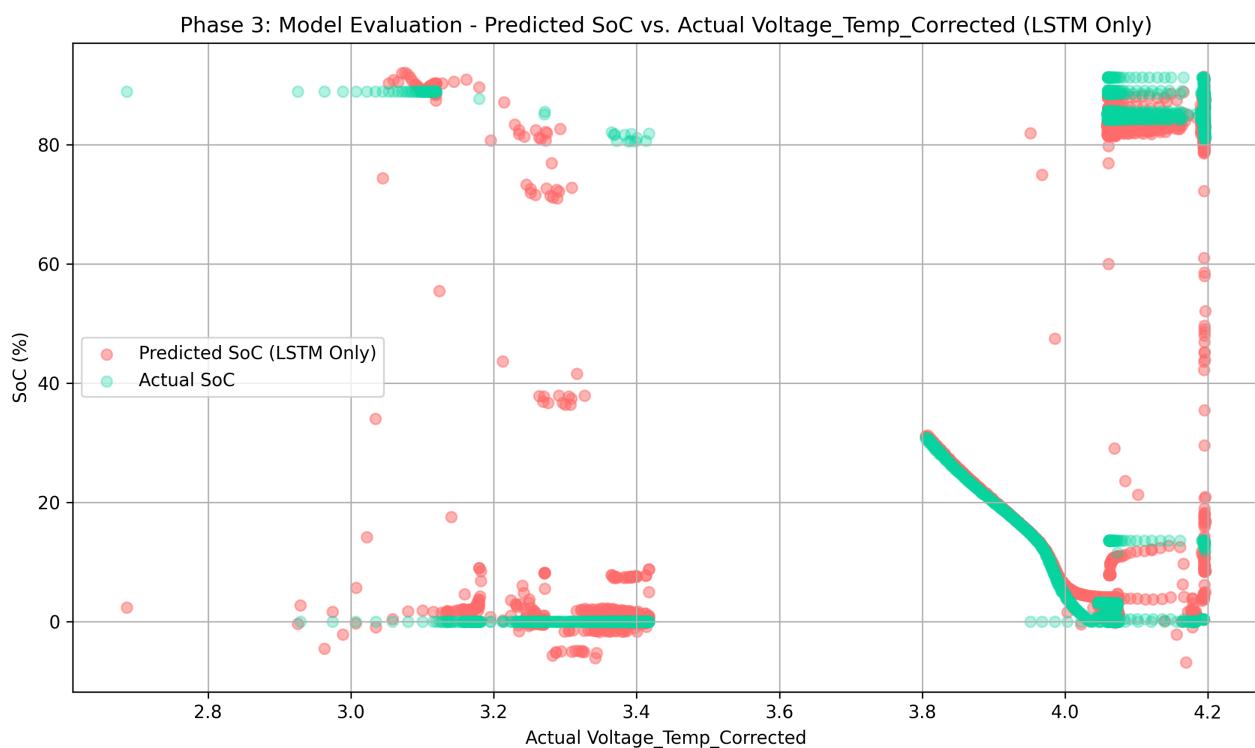


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Voltage_Temp_Corrected (Final)

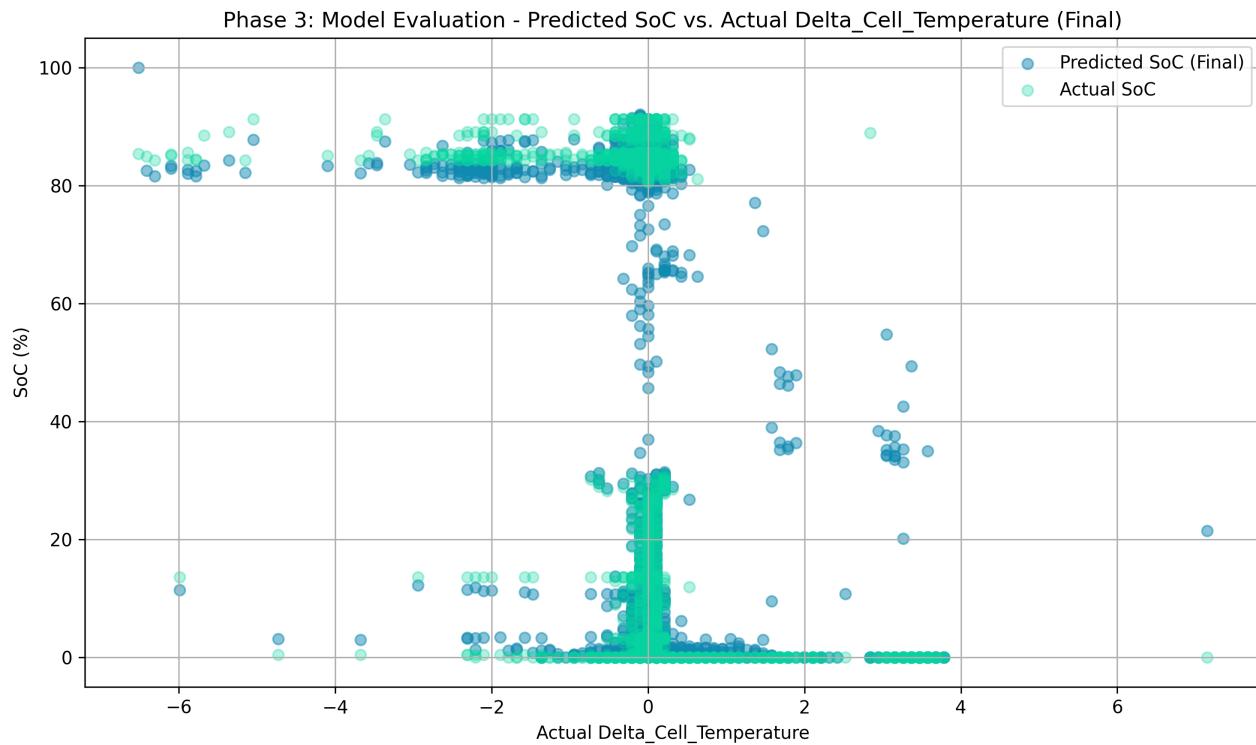


Plot: Predicted SoC vs. Voltage_Temp_Corrected (LSTM Only)

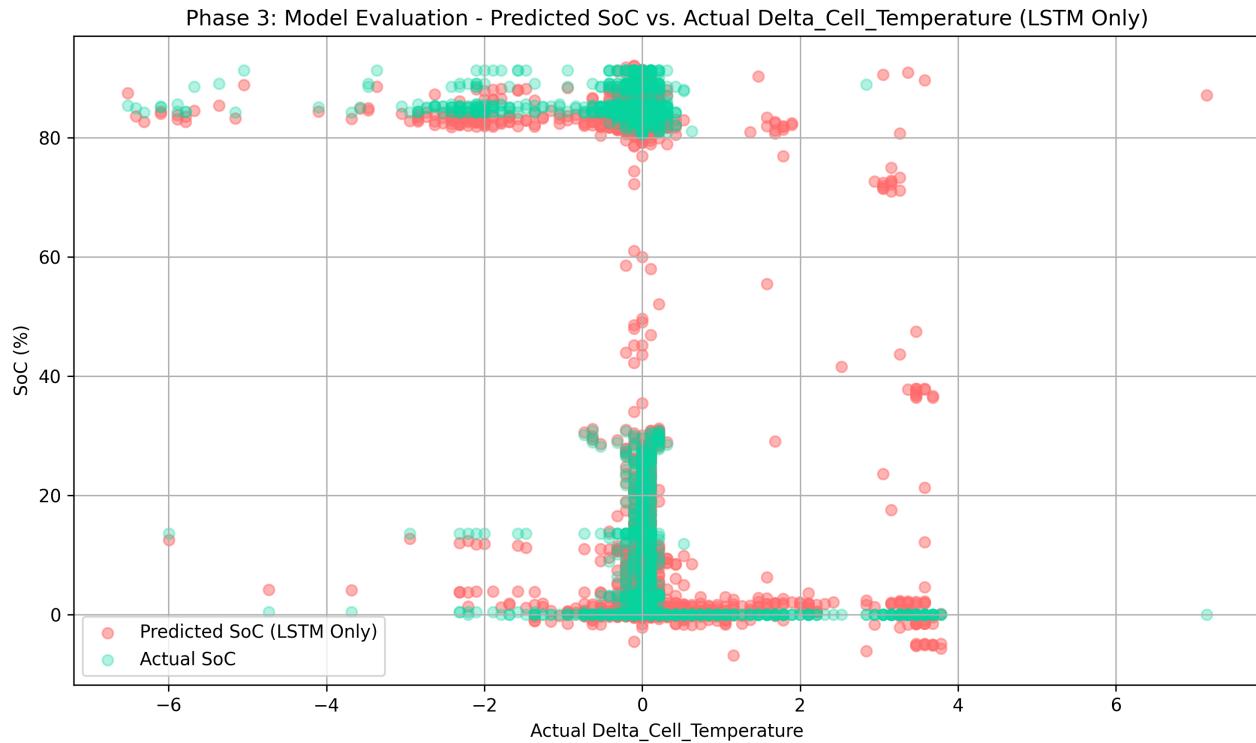


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Delta_Cell_Temperature (Final)

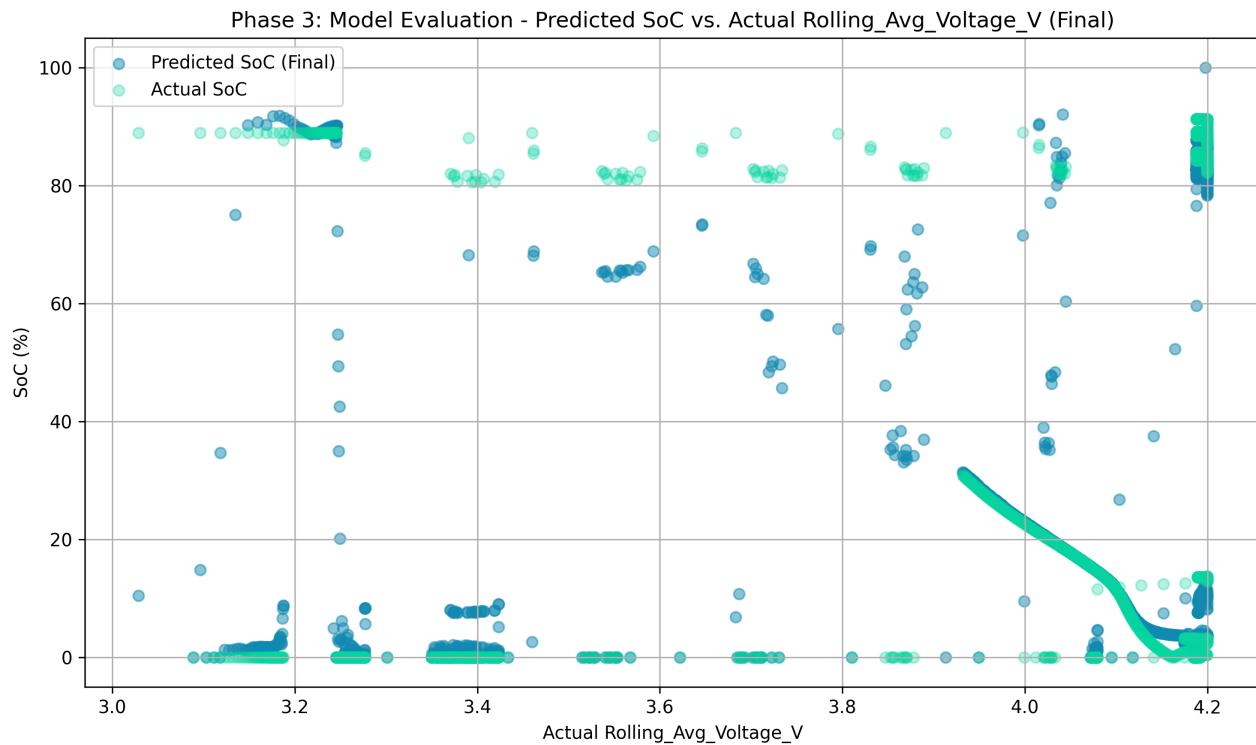


Plot: Predicted SoC vs. Delta_Cell_Temperature (LSTM Only)

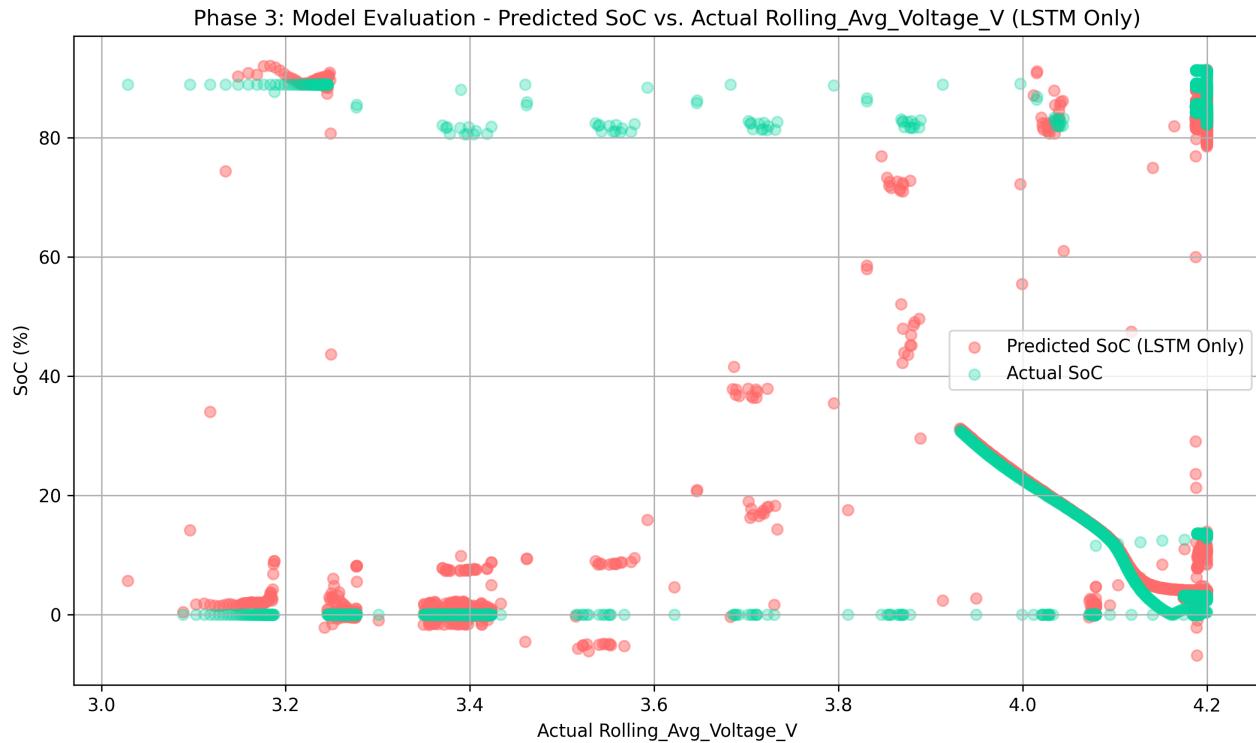


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Rolling_Avg_Voltage_V (Final)

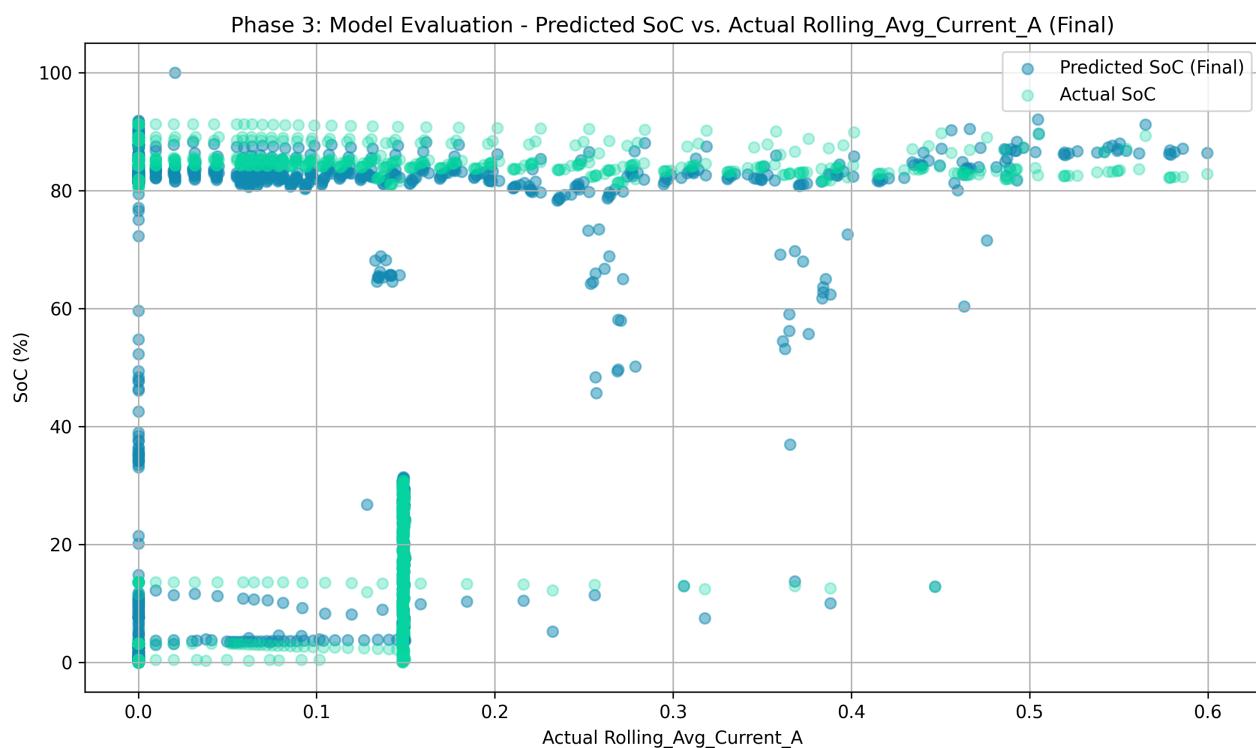


Plot: Predicted SoC vs. Rolling_Avg_Voltage_V (LSTM Only)

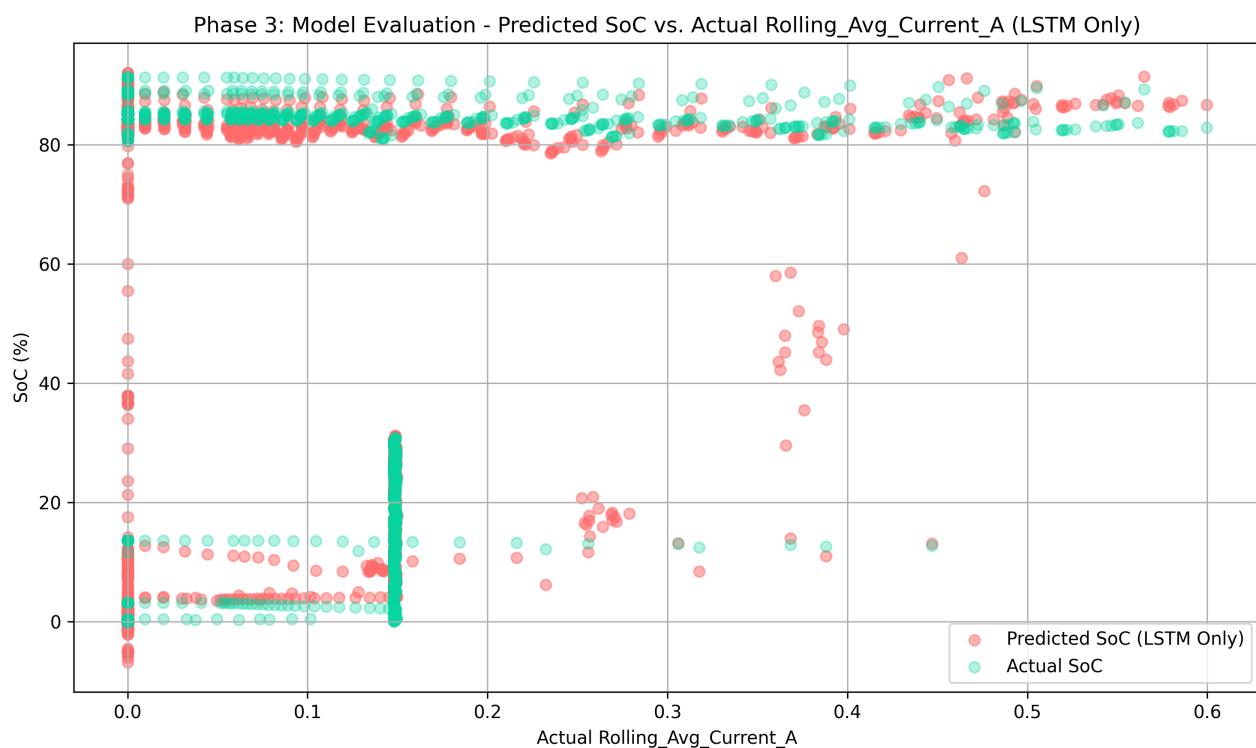


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Rolling_Avg_Current_A (Final)

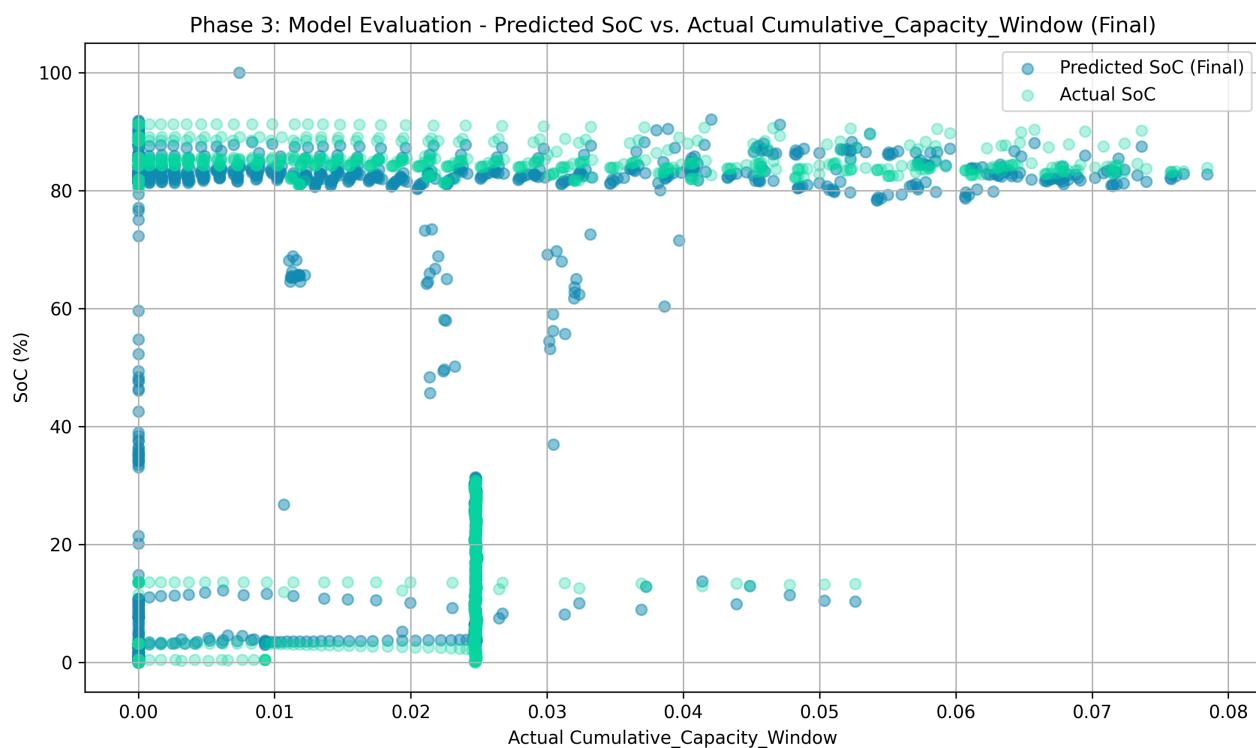


Plot: Predicted SoC vs. Rolling_Avg_Current_A (LSTM Only)

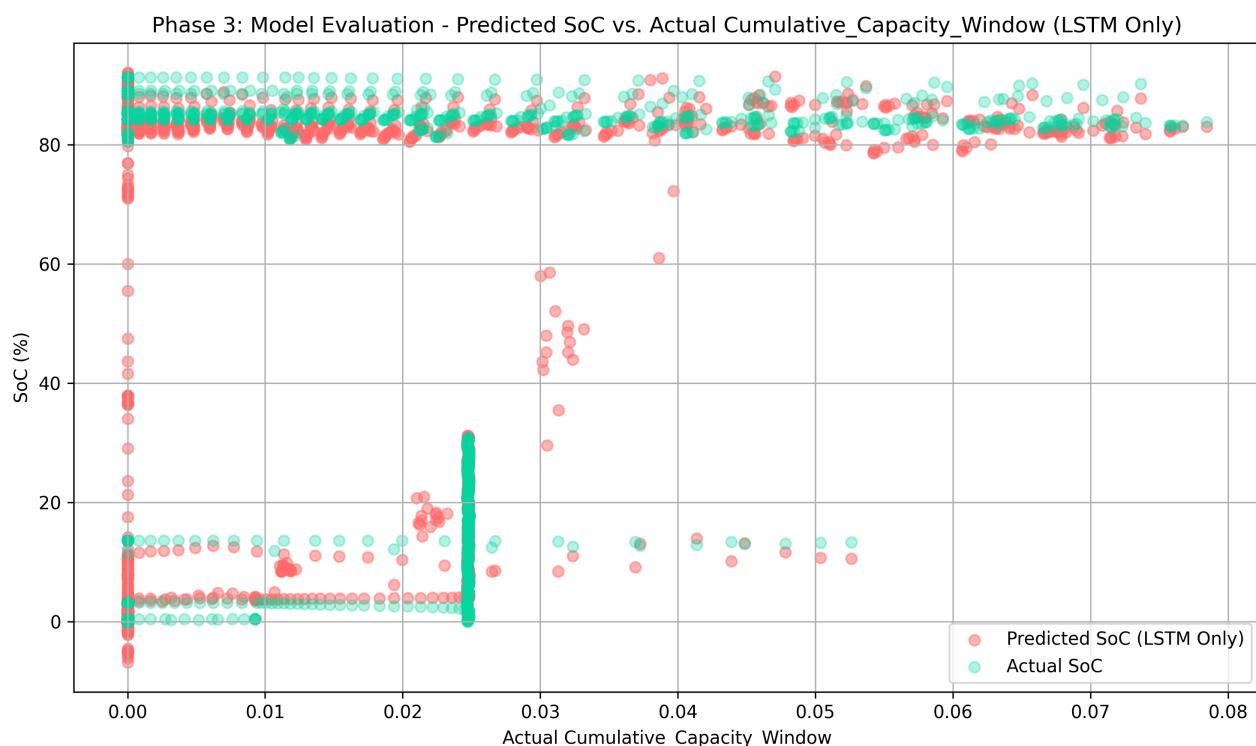


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Cumulative_Capacity_Window (Final)

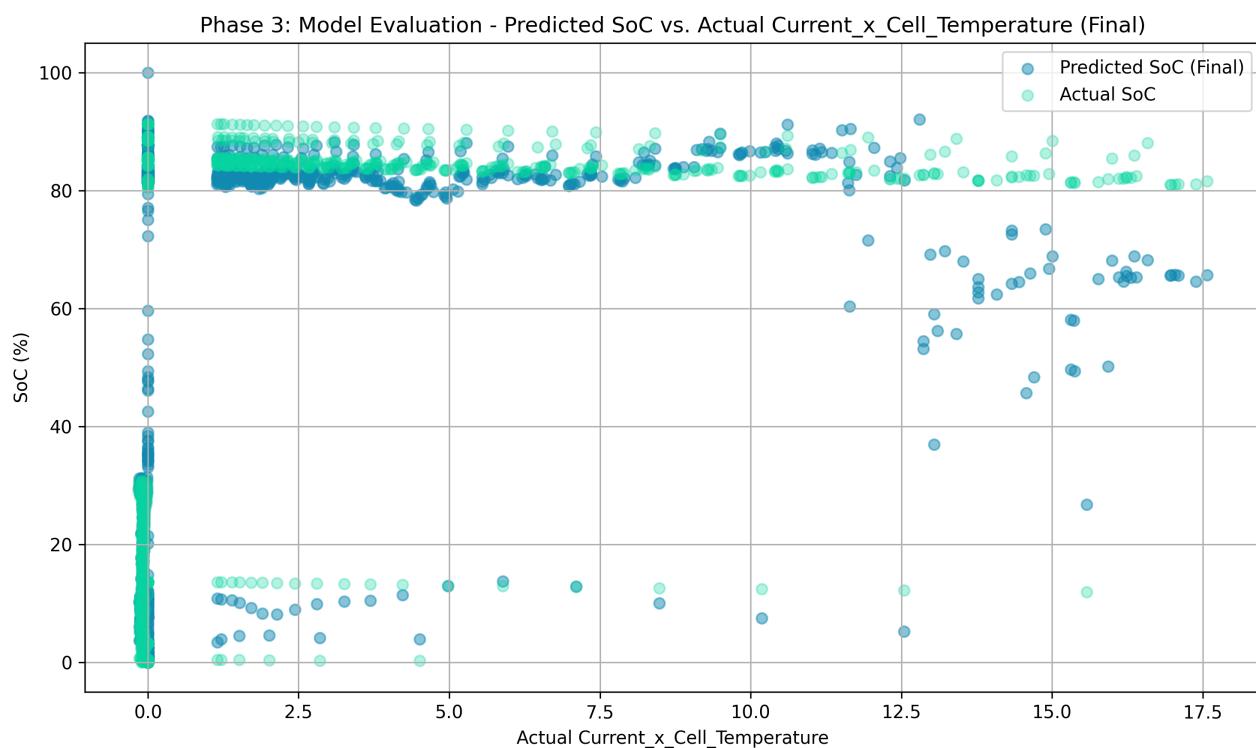


Plot: Predicted SoC vs. Cumulative_Capacity_Window (LSTM Only)

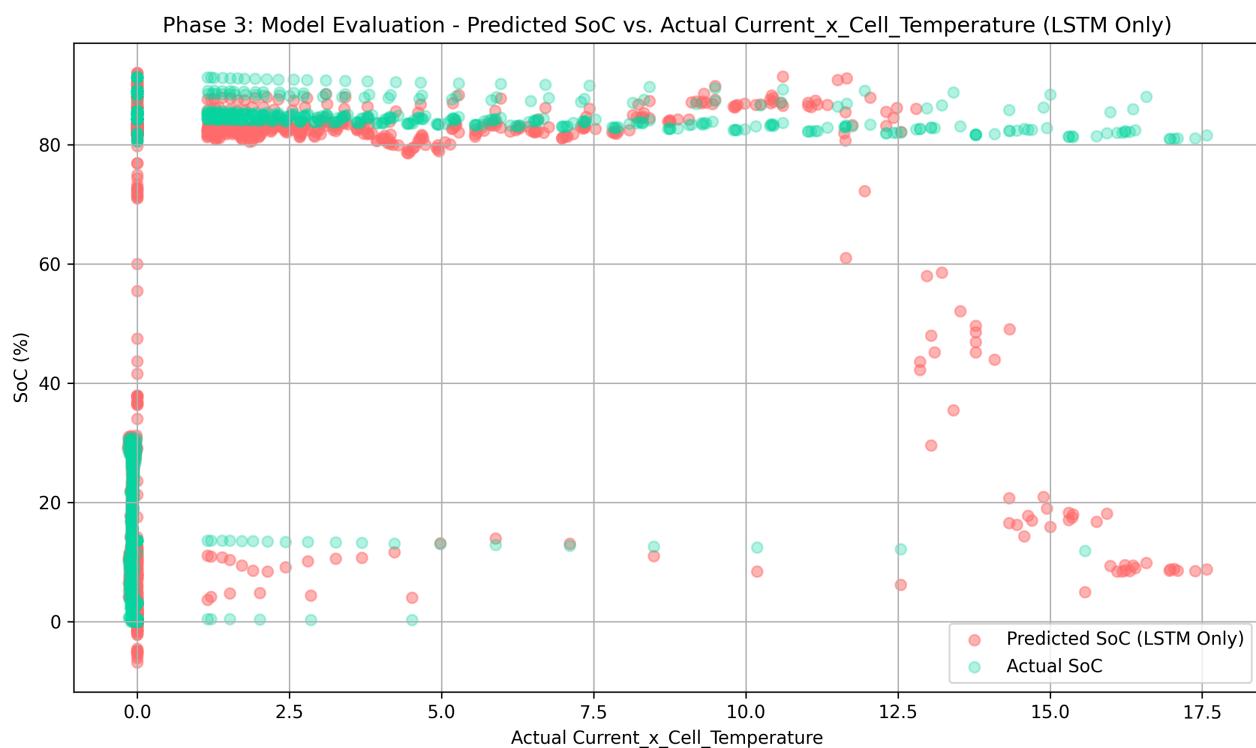


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Current_x_Cell_Temperature (Final)

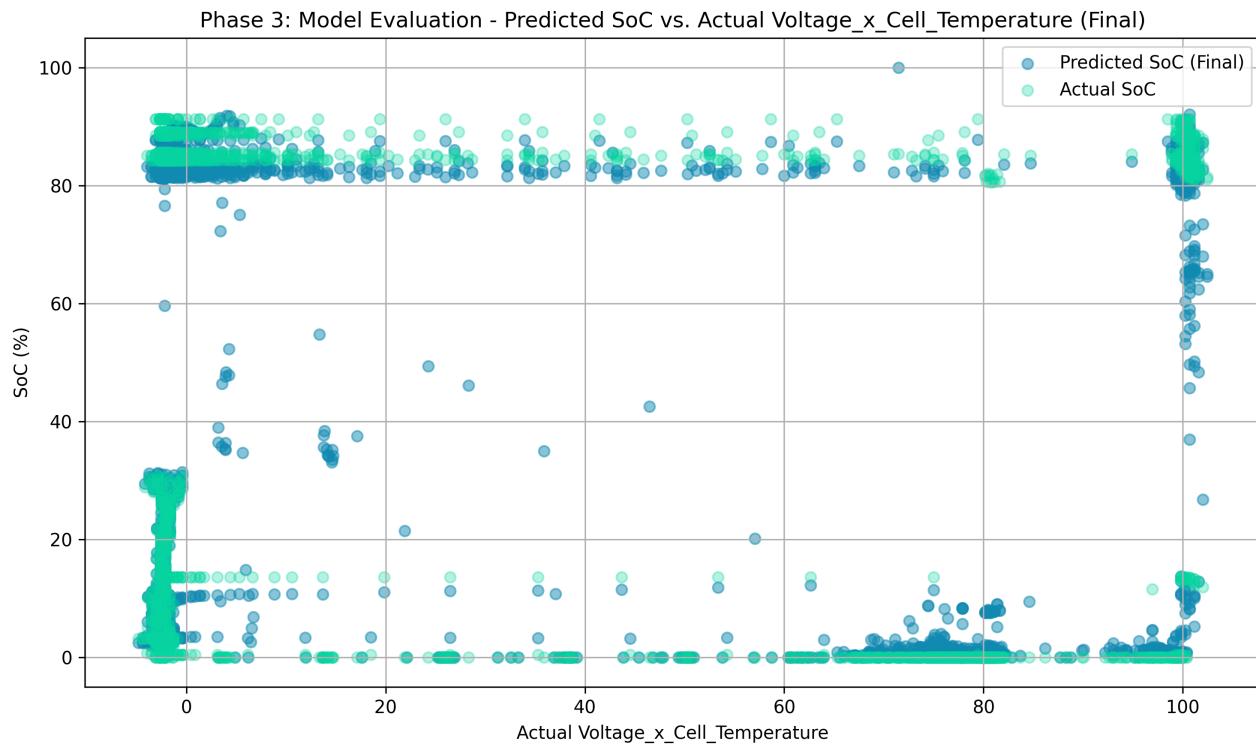


Plot: Predicted SoC vs. Current_x_Cell_Temperature (LSTM Only)

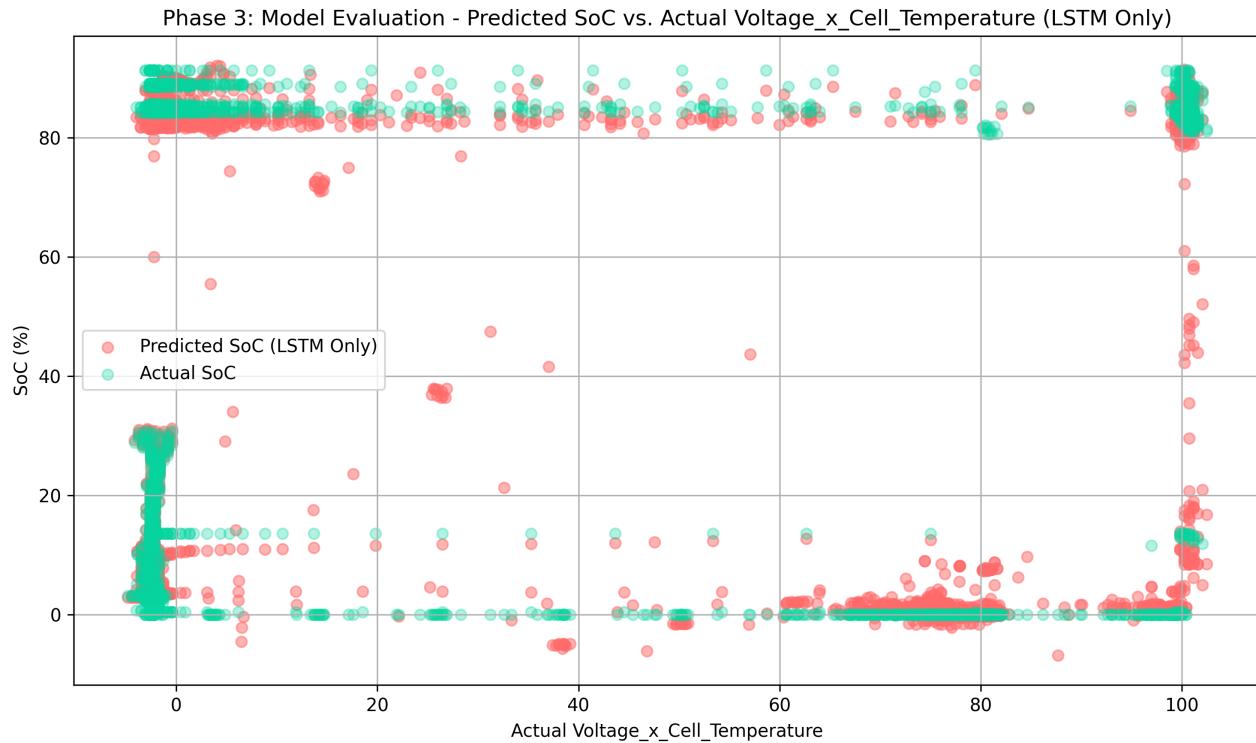


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Voltage_x_Cell_Temperature (Final)

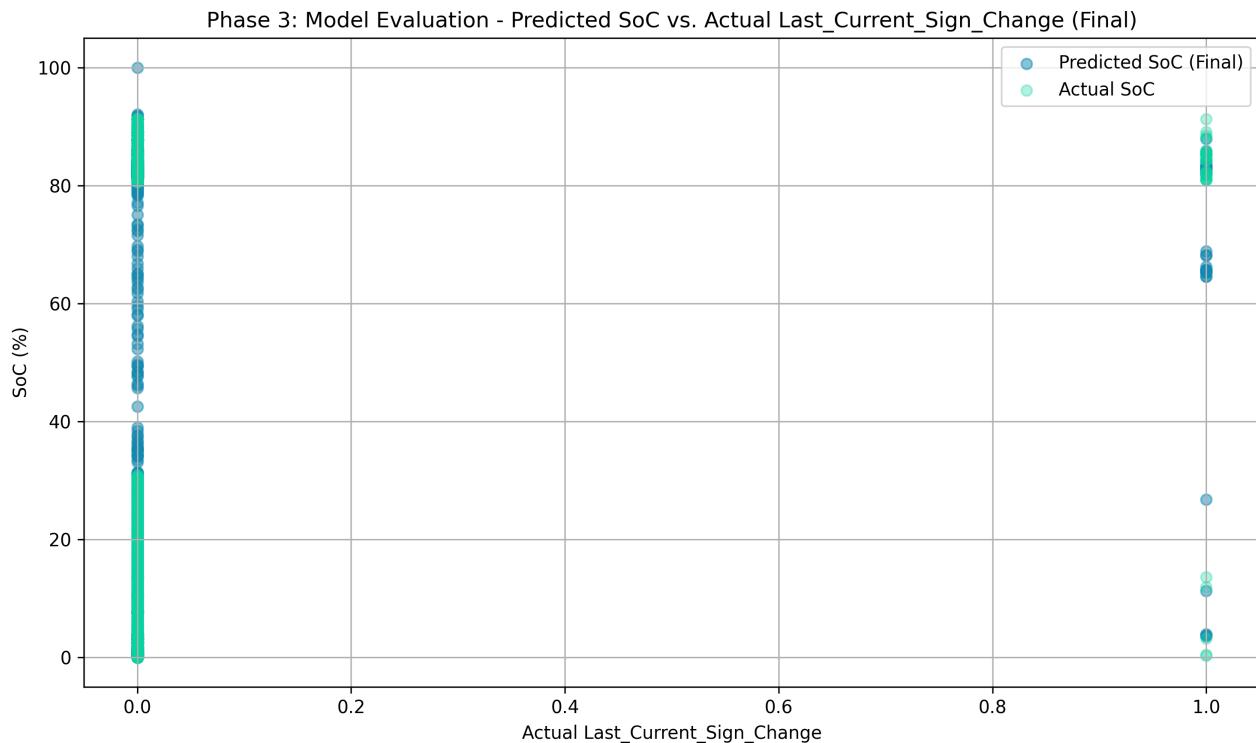


Plot: Predicted SoC vs. Voltage_x_Cell_Temperature (LSTM Only)

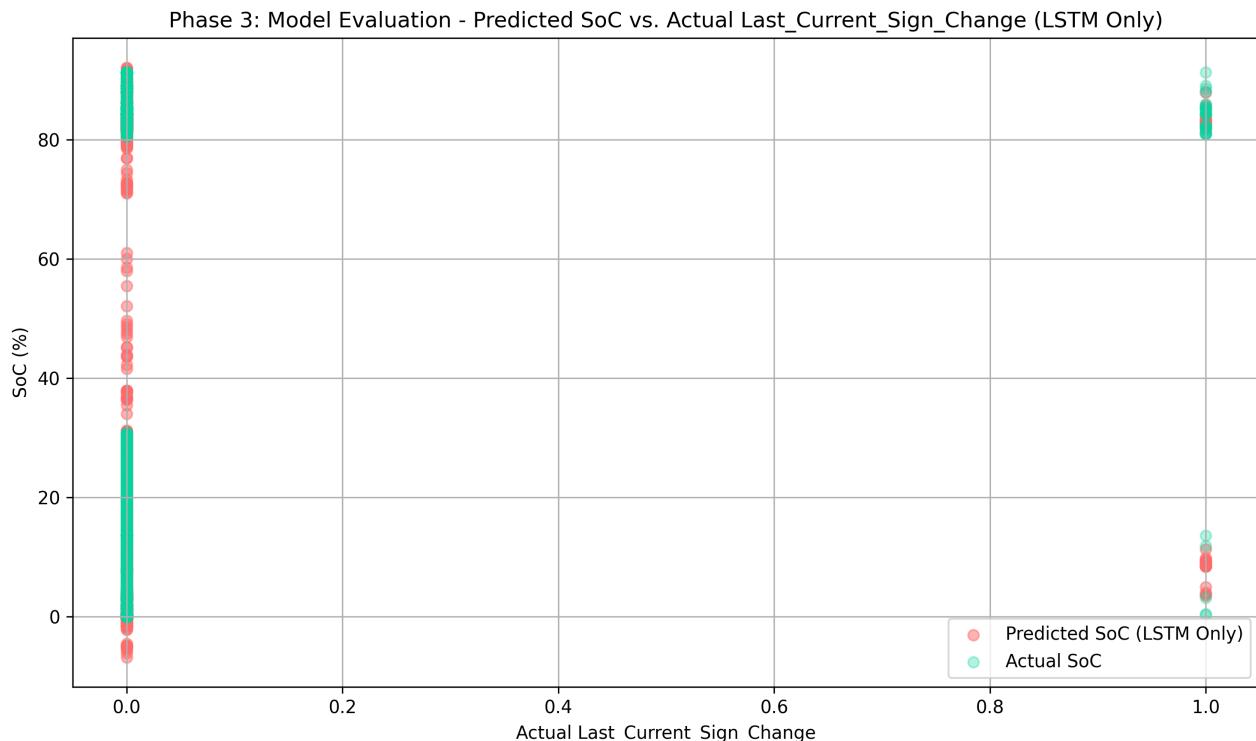


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Last_Current_Sign_Change (Final)

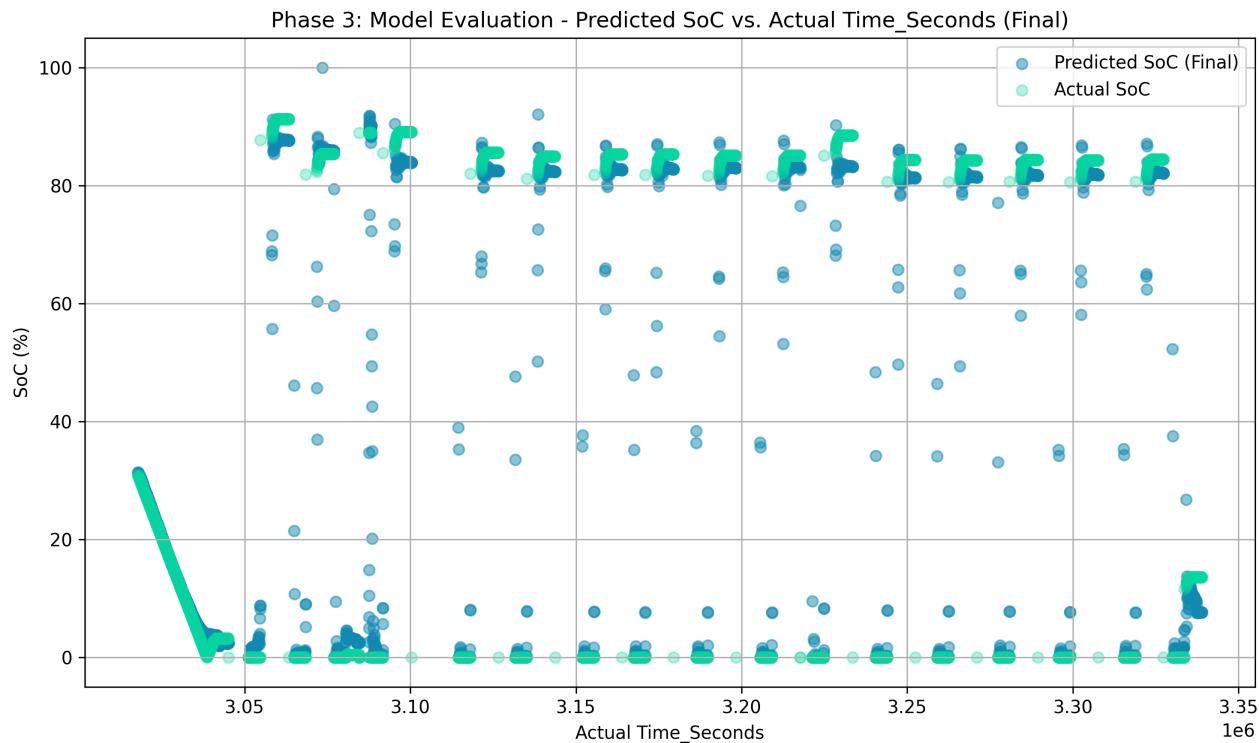


Plot: Predicted SoC vs. Last_Current_Sign_Change (LSTM Only)

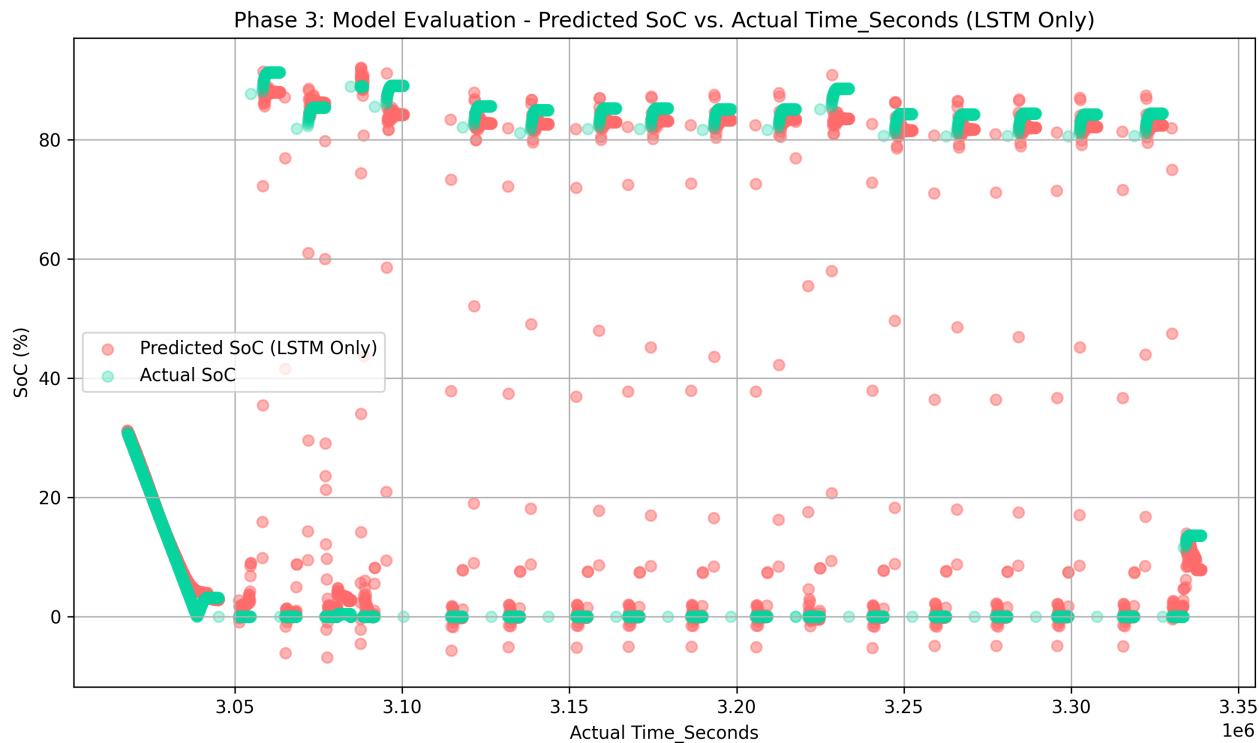


Phase 3: Model Evaluation - Learned Relationships (Cont.)

Plot: Predicted SoC vs. Time_Seconds (Final)



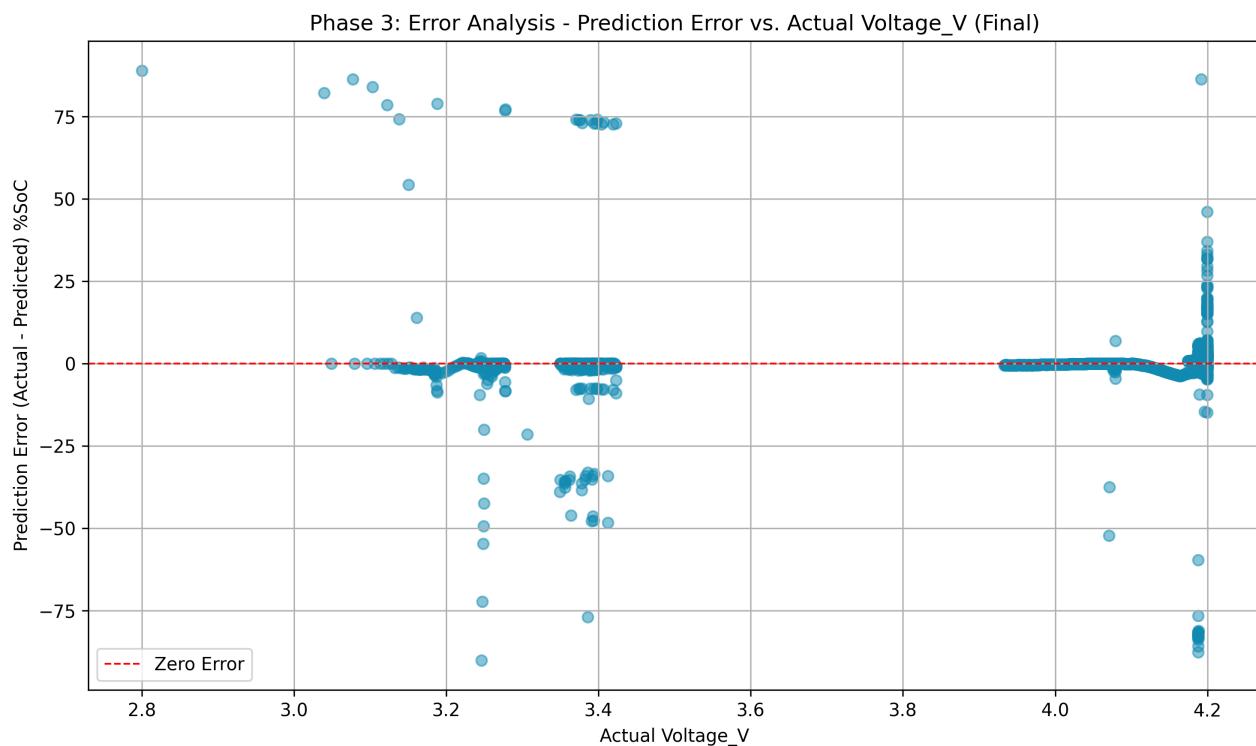
Plot: Predicted SoC vs. Time_Seconds (LSTM Only)



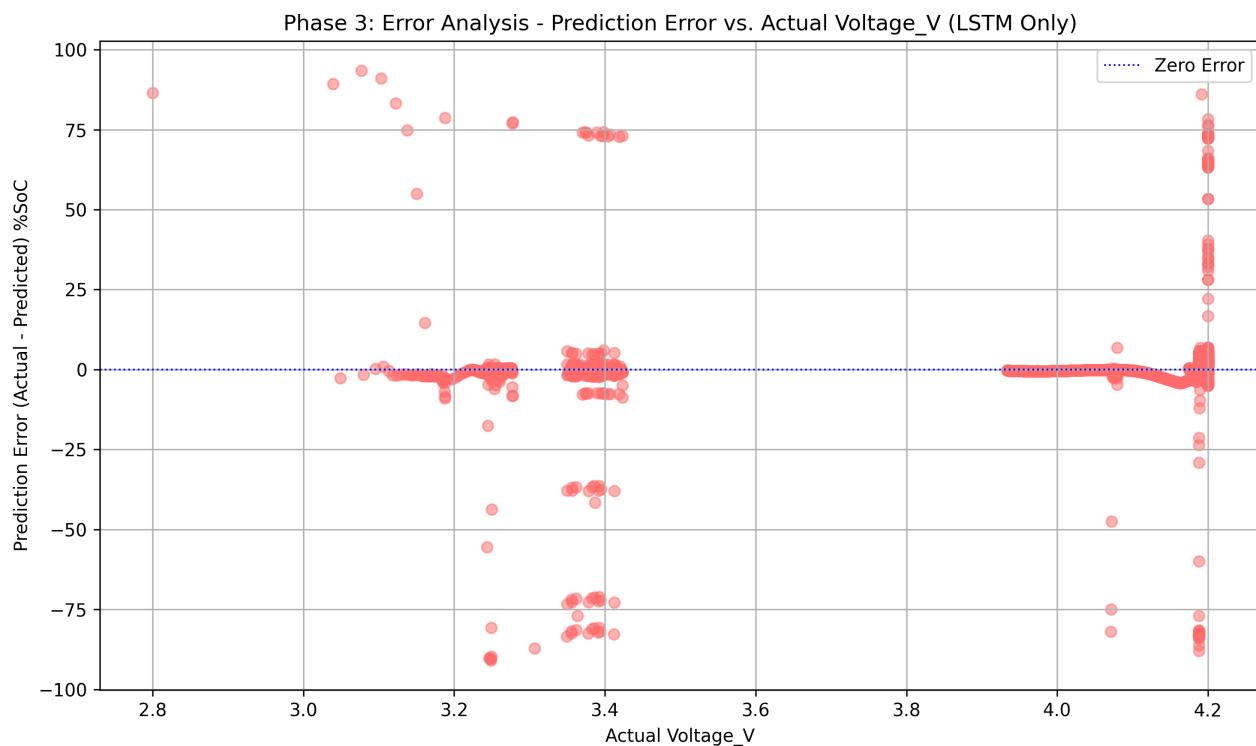
Phase 3: Error Analysis - Residuals

Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Voltage_V (Final)

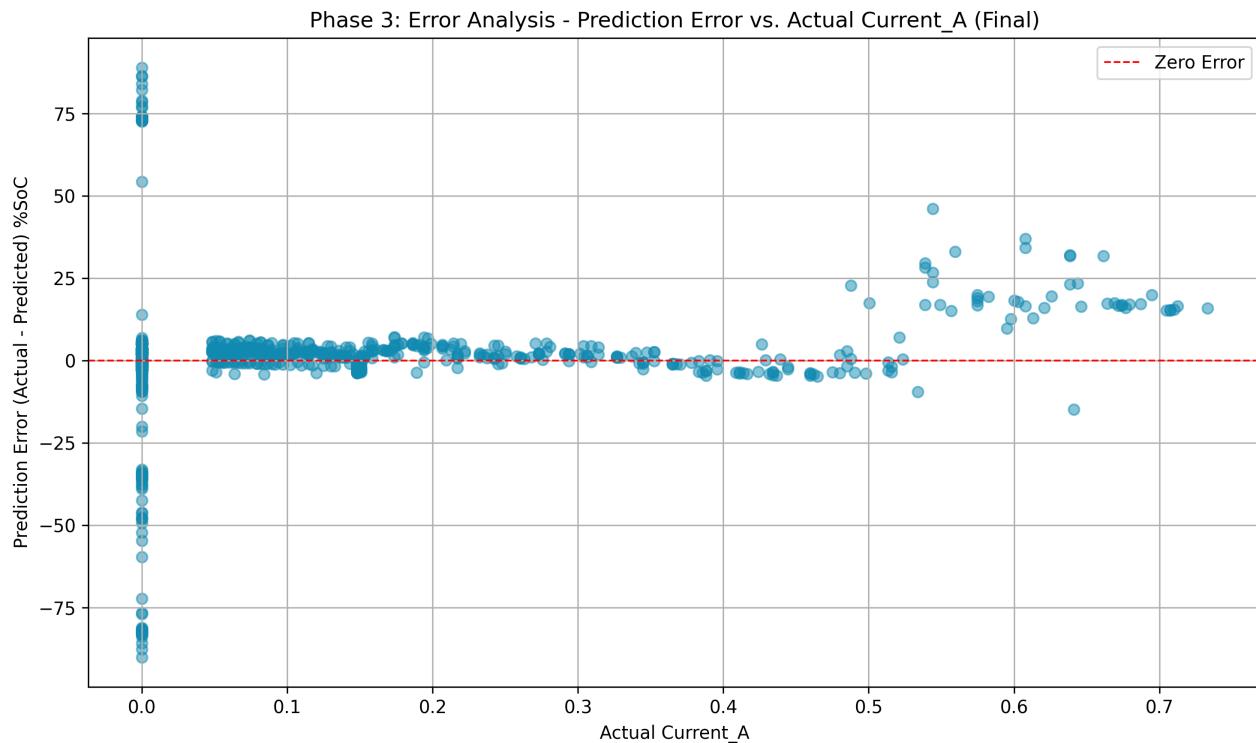


Plot: Prediction Error vs. Voltage_V (LSTM Only)

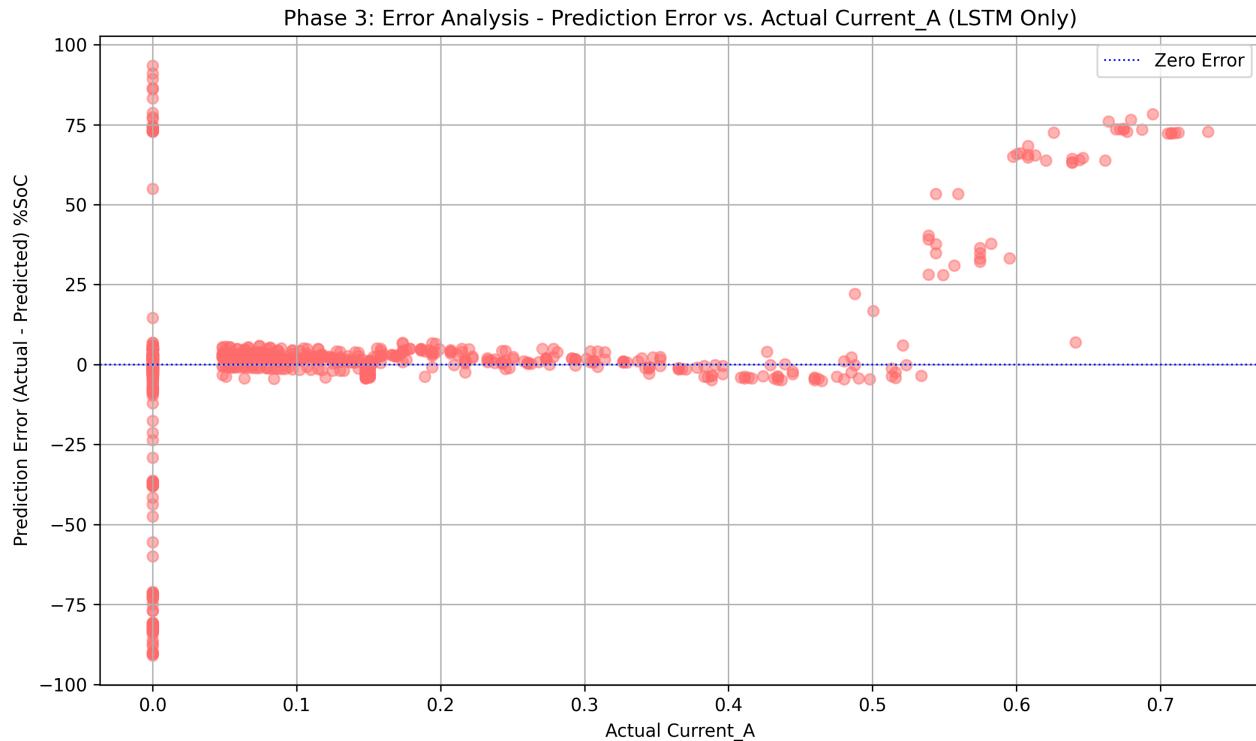


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Current_A (Final)

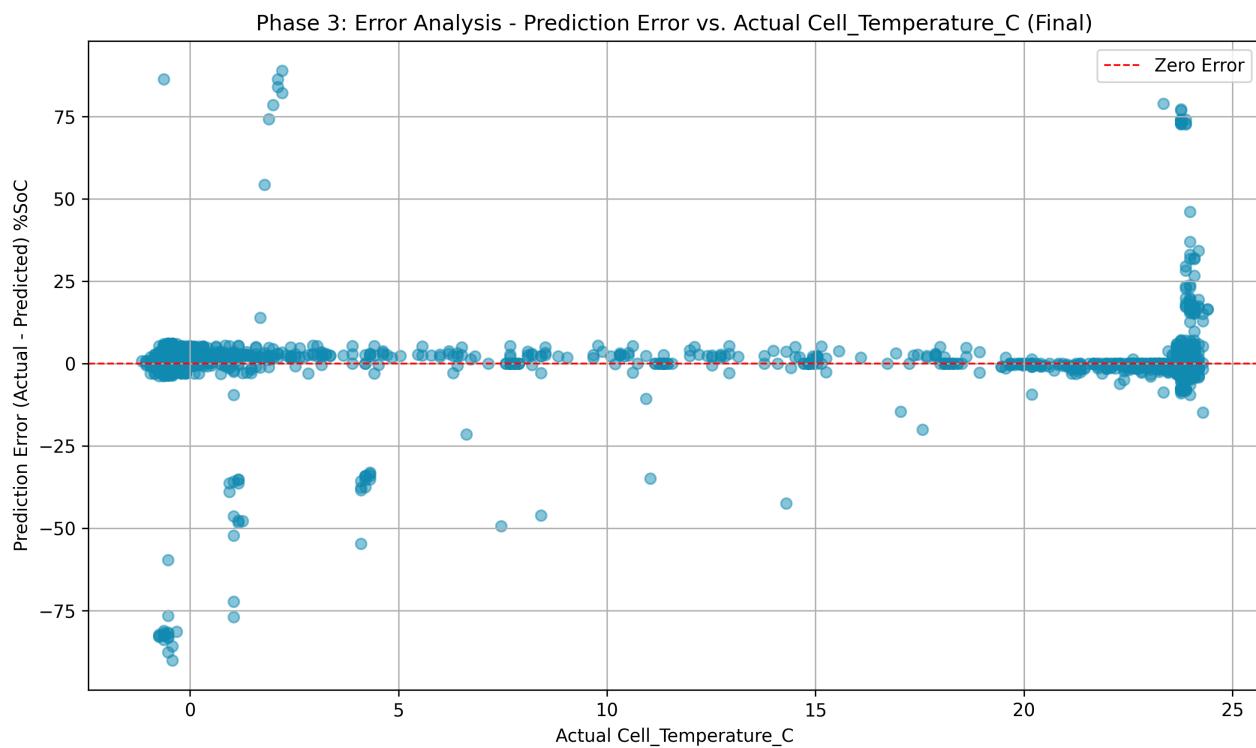


Plot: Prediction Error vs. Current_A (LSTM Only)

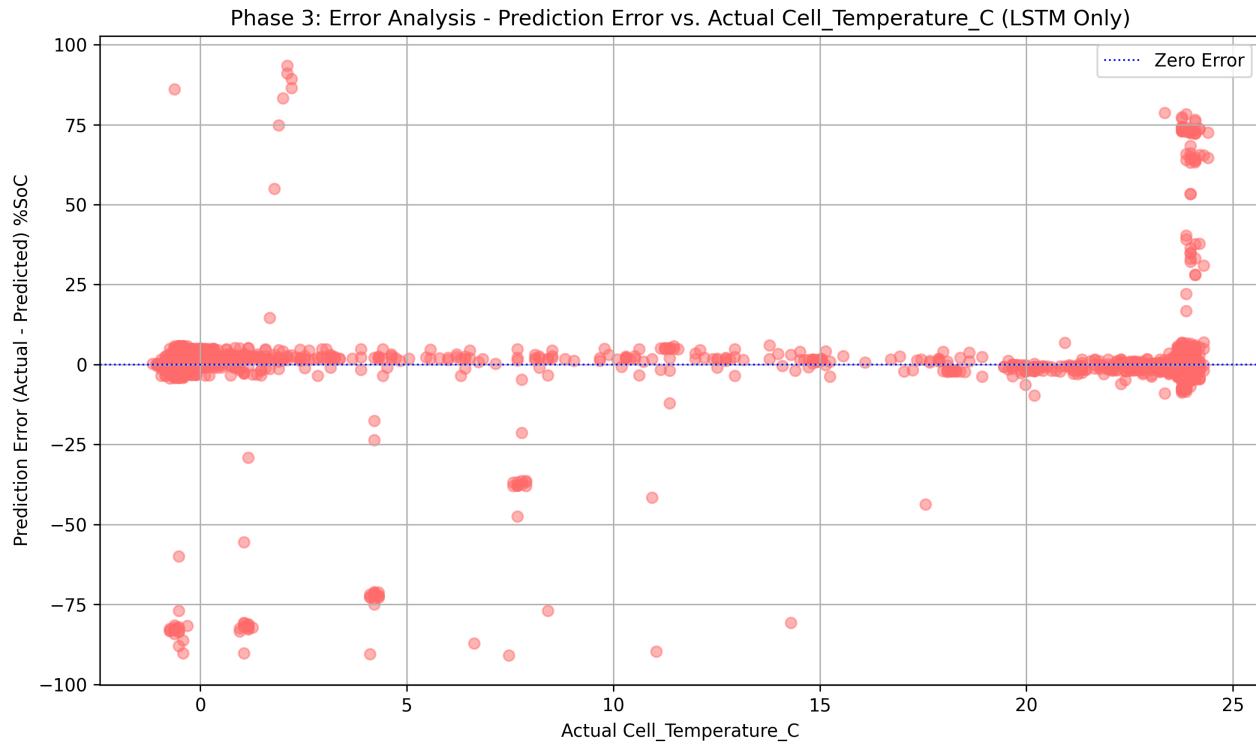


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Cell_Temperature_C (Final)

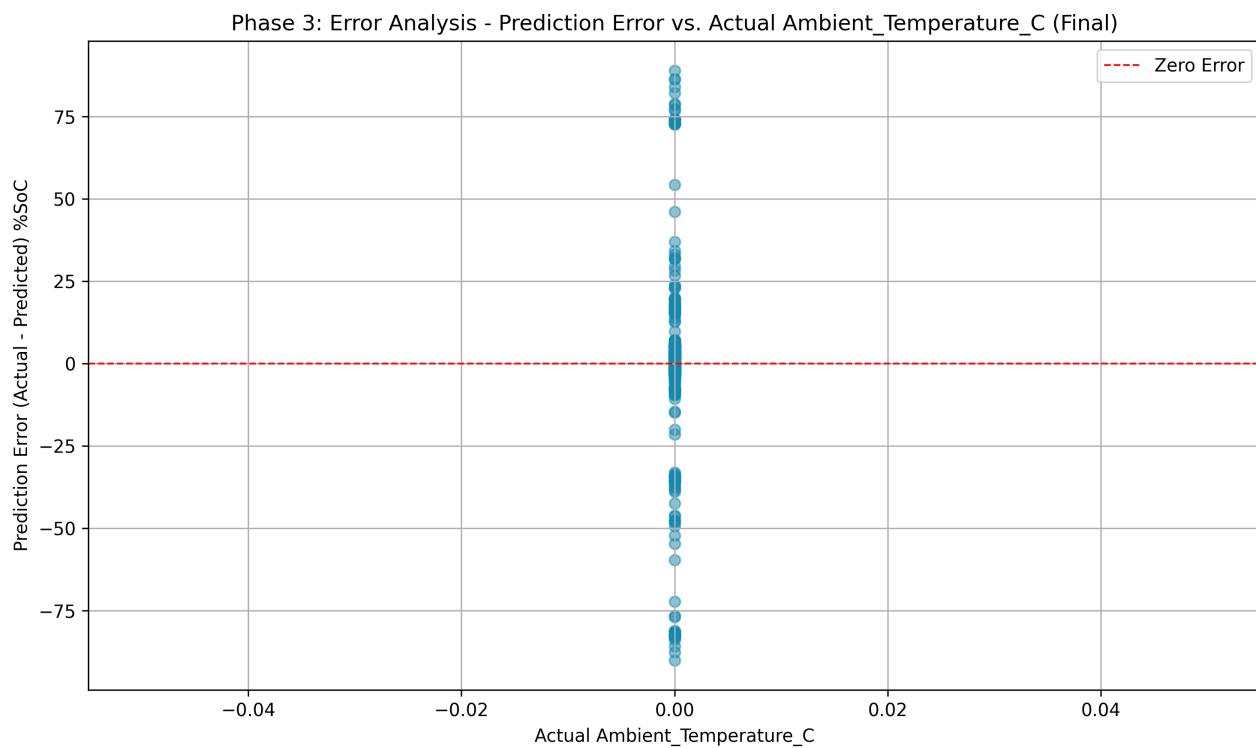


Plot: Prediction Error vs. Cell_Temperature_C (LSTM Only)

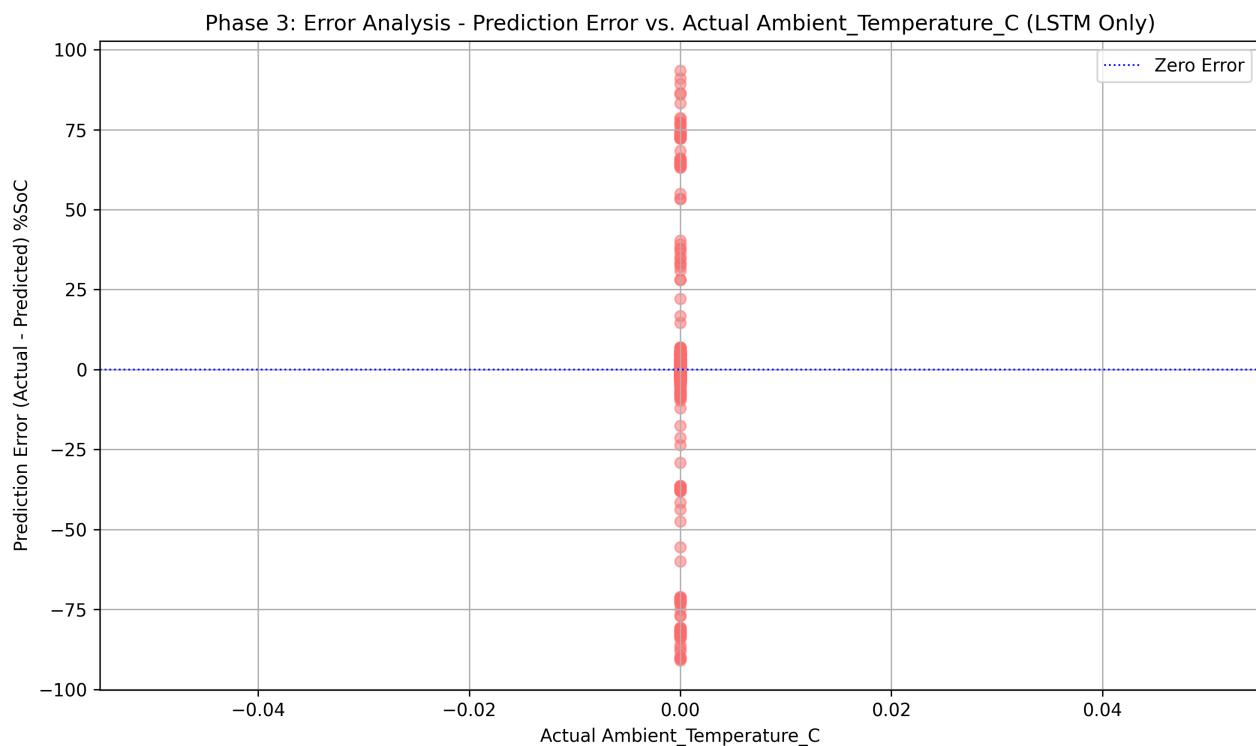


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Ambient_Temperature_C (Final)

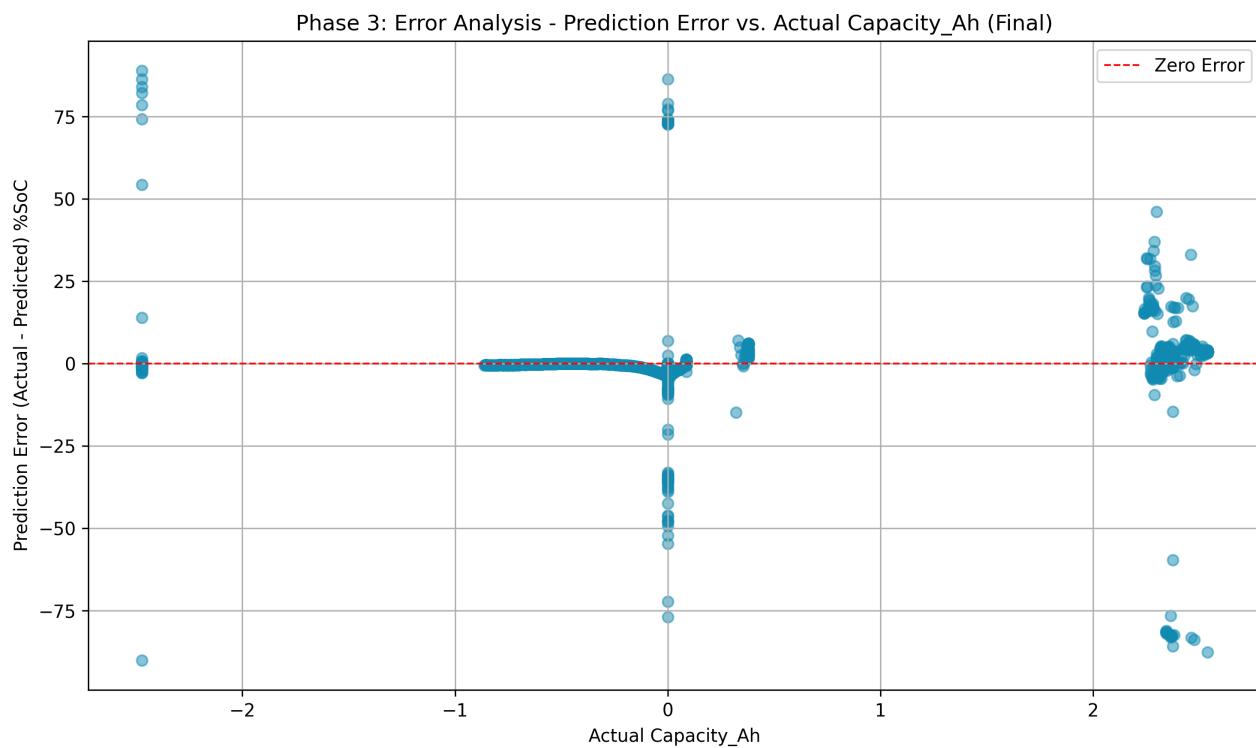


Plot: Prediction Error vs. Ambient_Temperature_C (LSTM Only)

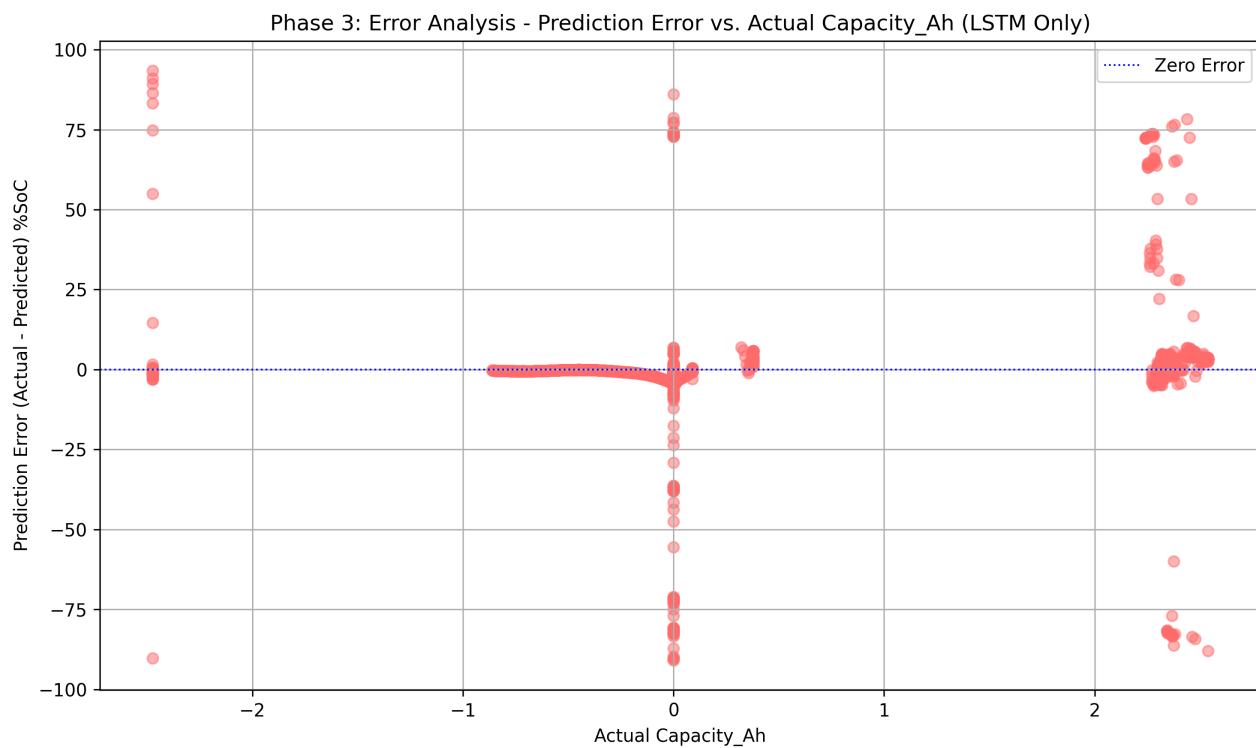


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Capacity_Ah (Final)

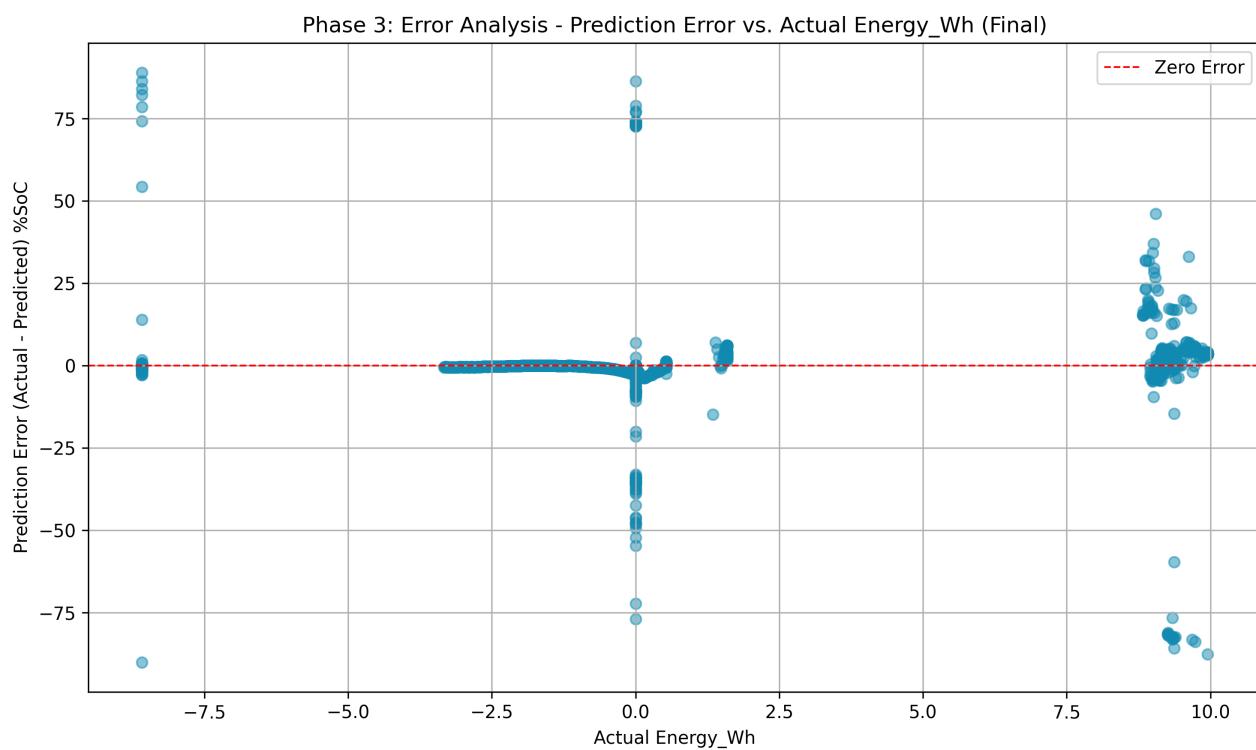


Plot: Prediction Error vs. Capacity_Ah (LSTM Only)

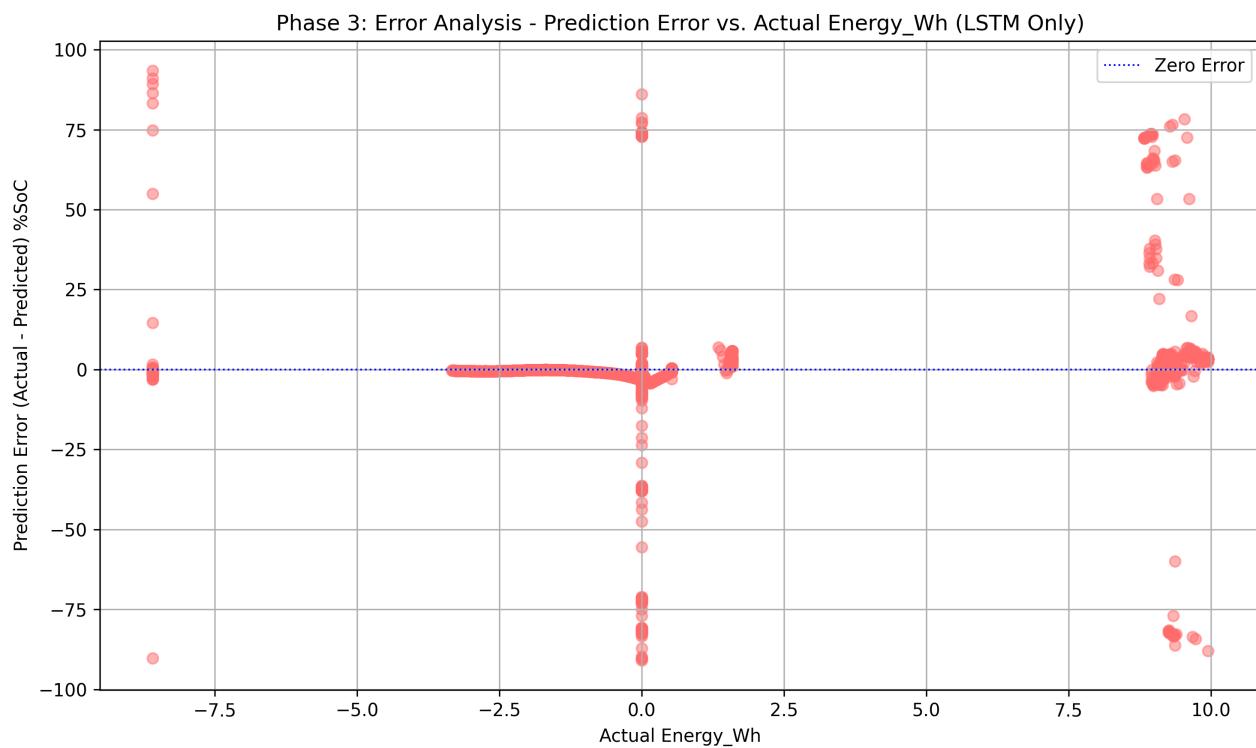


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Energy_Wh (Final)

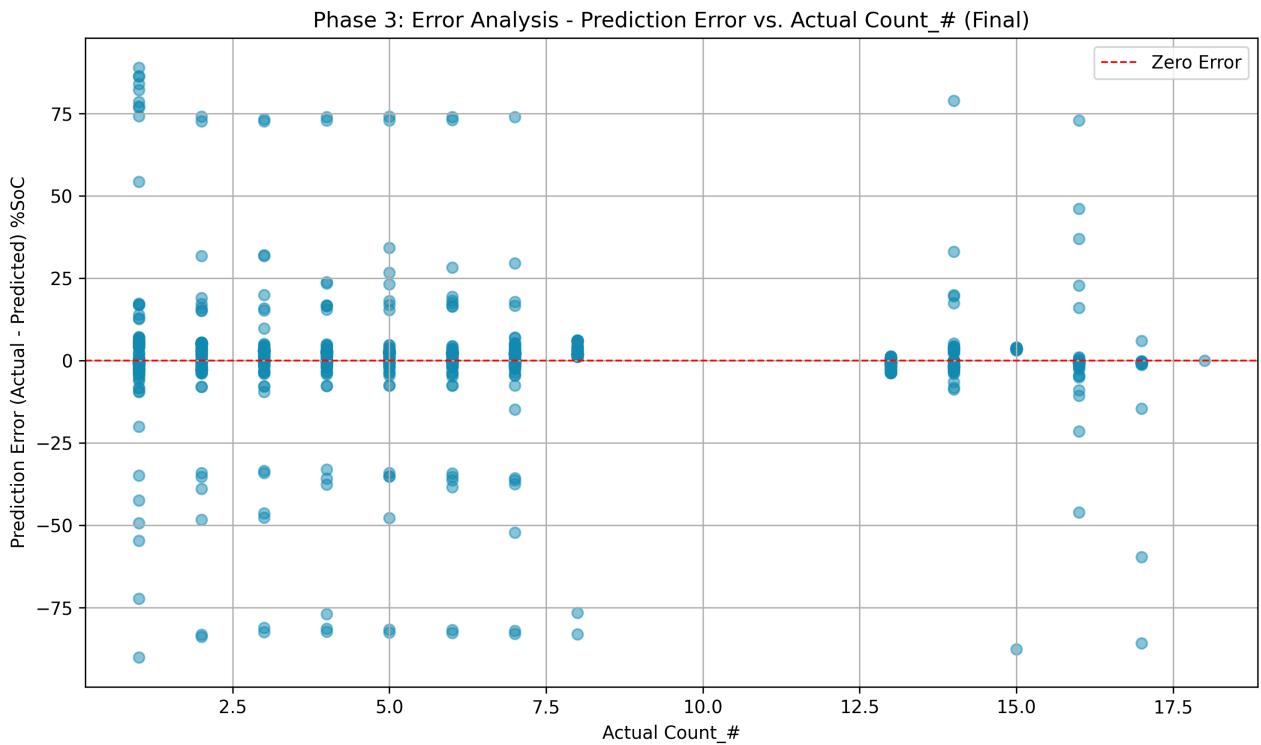


Plot: Prediction Error vs. Energy_Wh (LSTM Only)

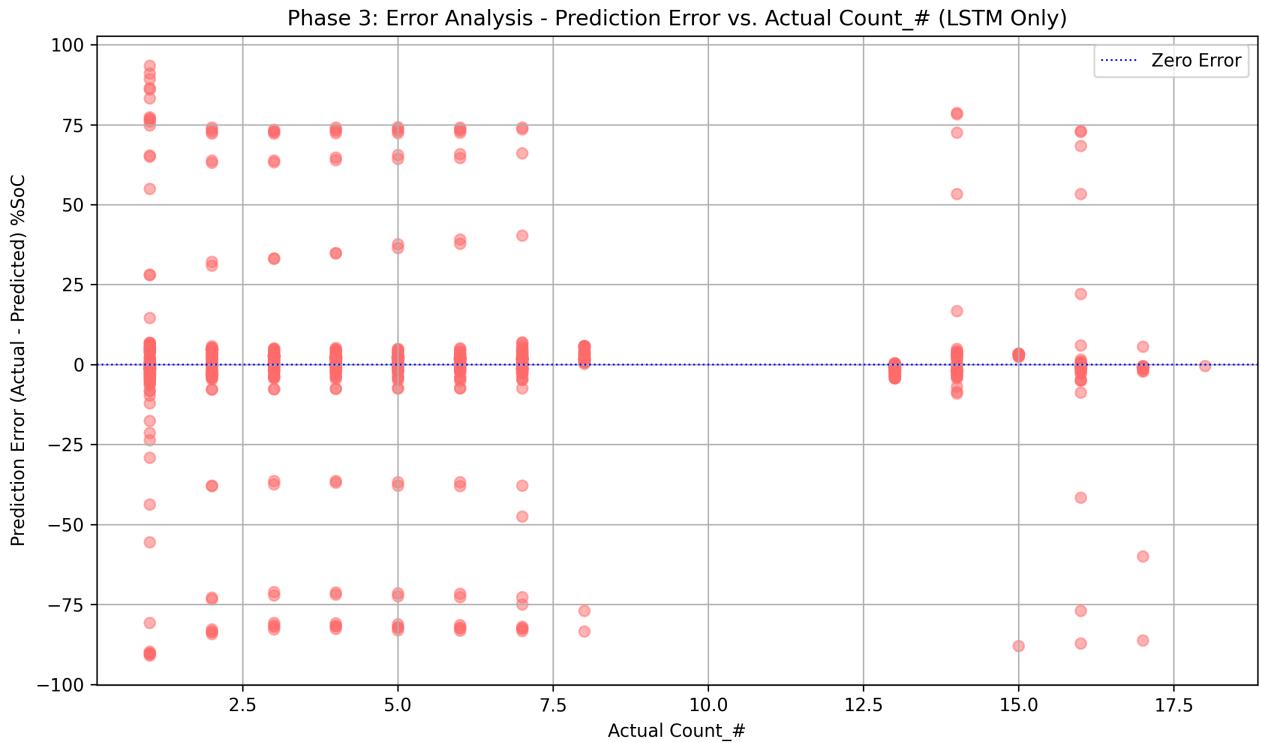


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Count_# (Final)

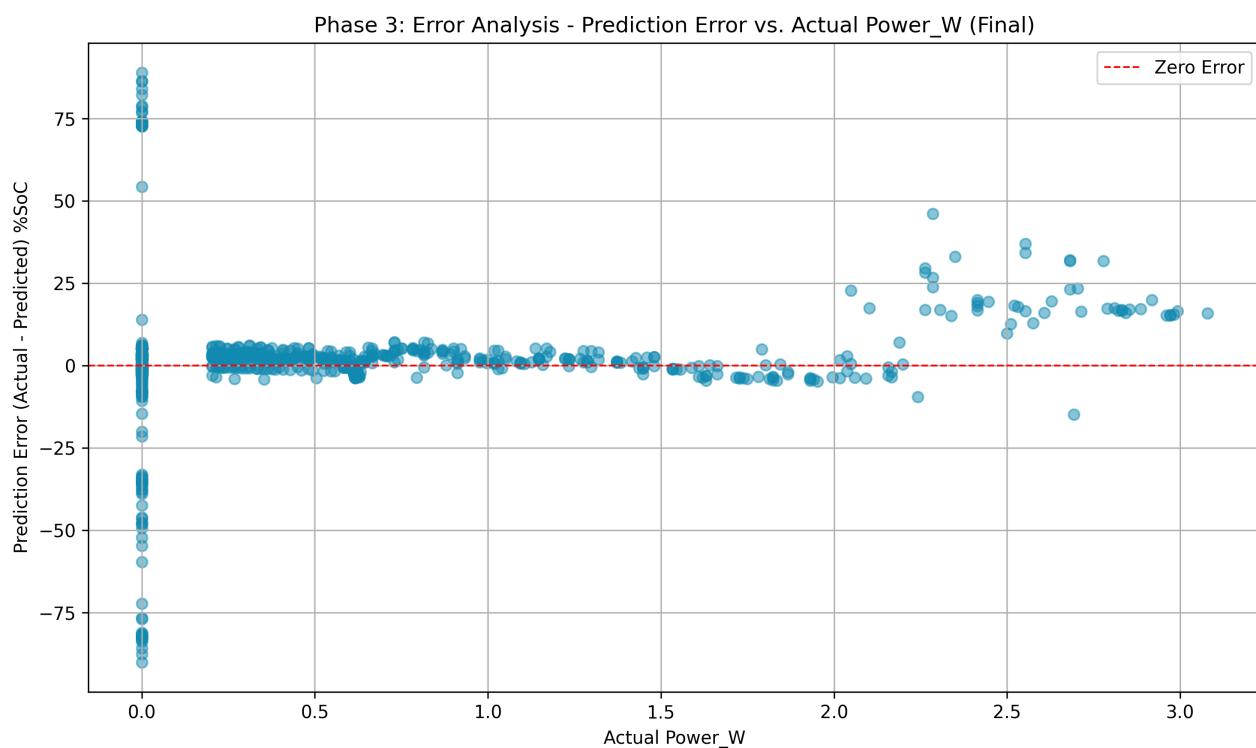


Plot: Prediction Error vs. Count_# (LSTM Only)

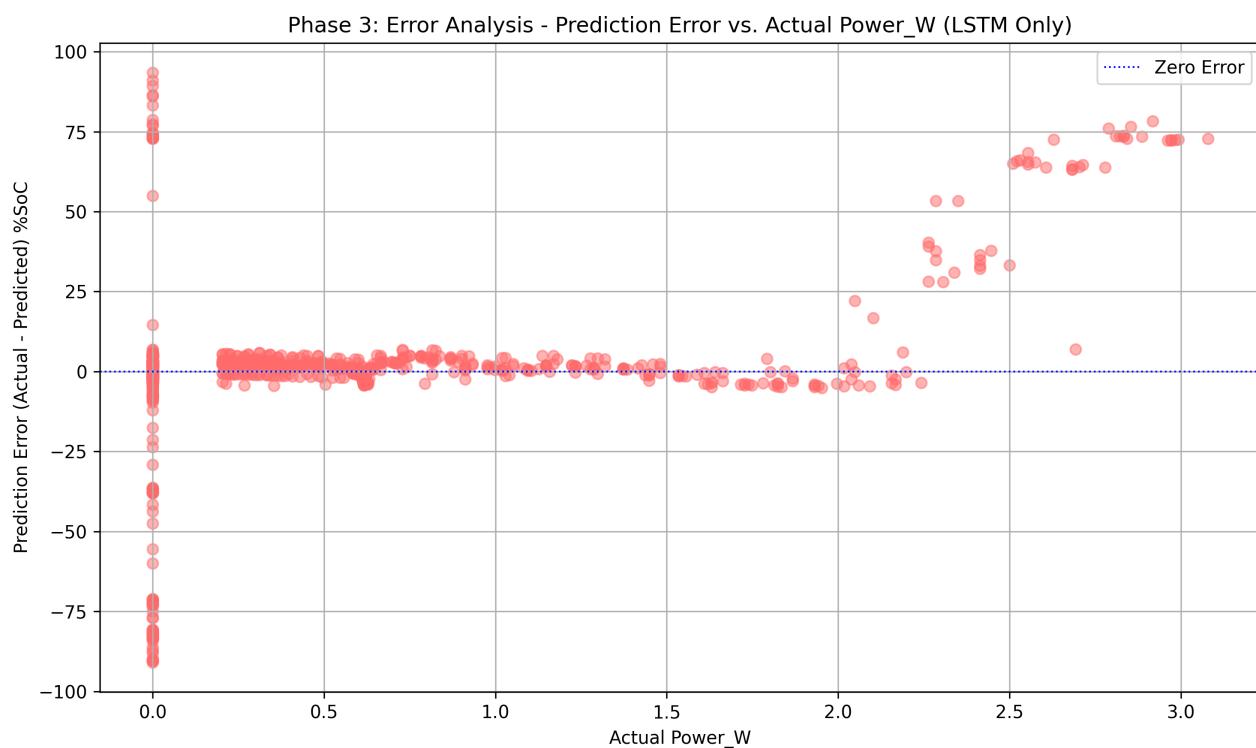


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Power_W (Final)

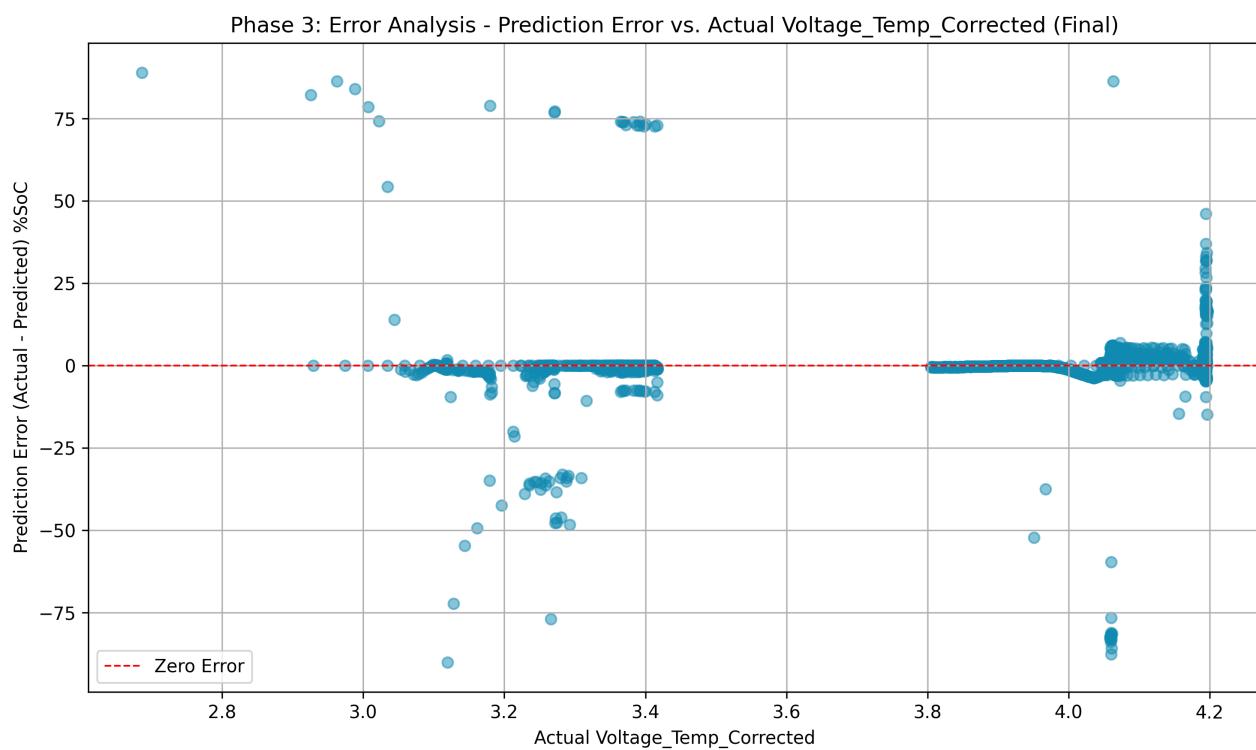


Plot: Prediction Error vs. Power_W (LSTM Only)

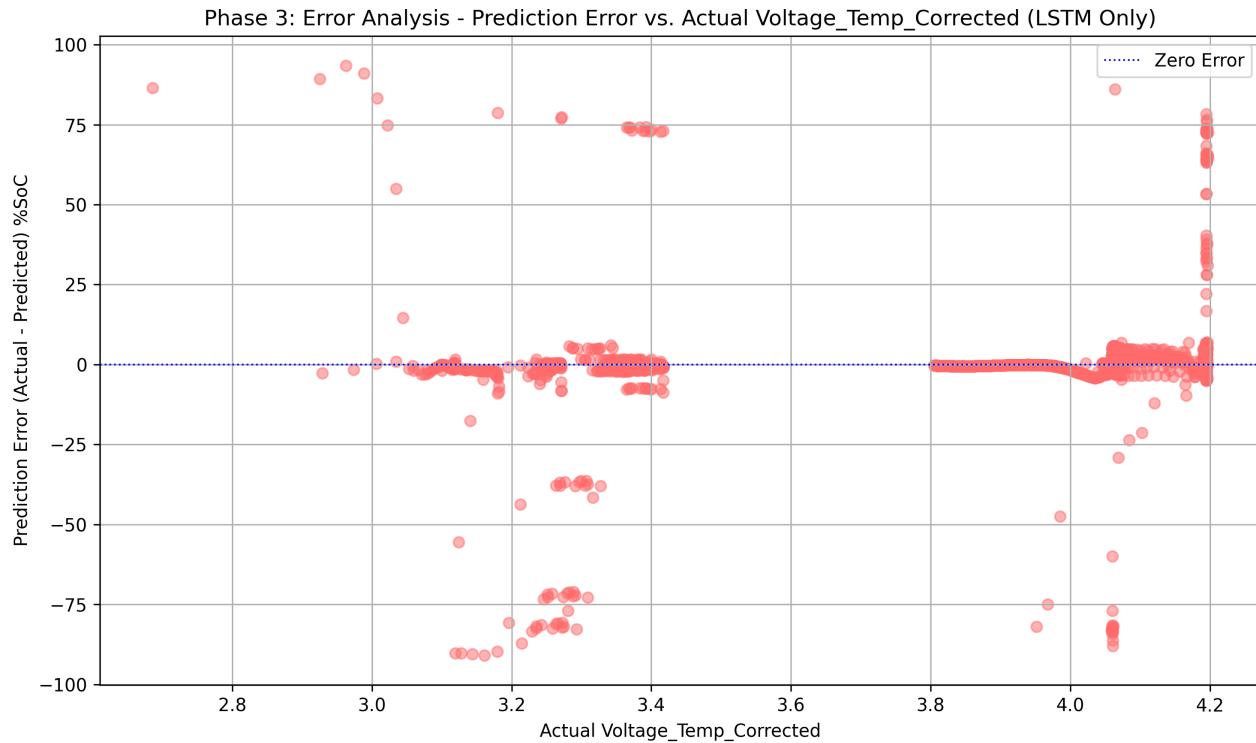


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Voltage_Temp_Corrected (Final)

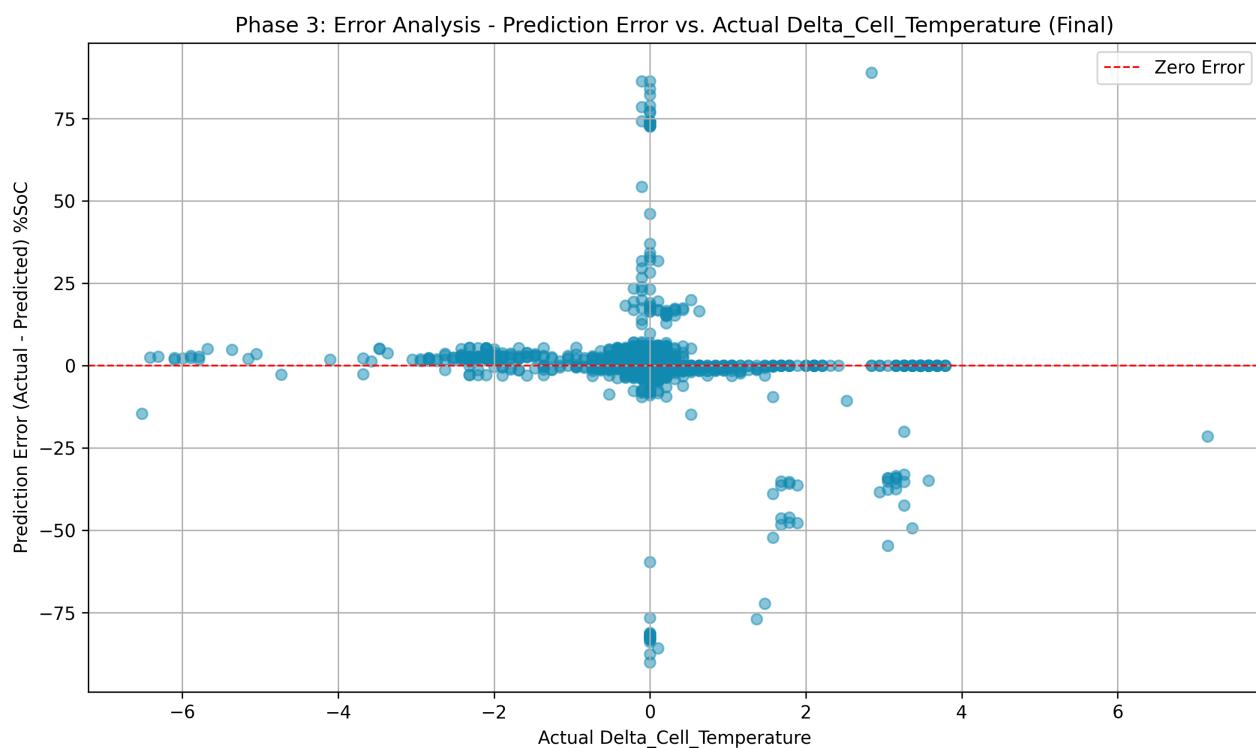


Plot: Prediction Error vs. Voltage_Temp_Corrected (LSTM Only)

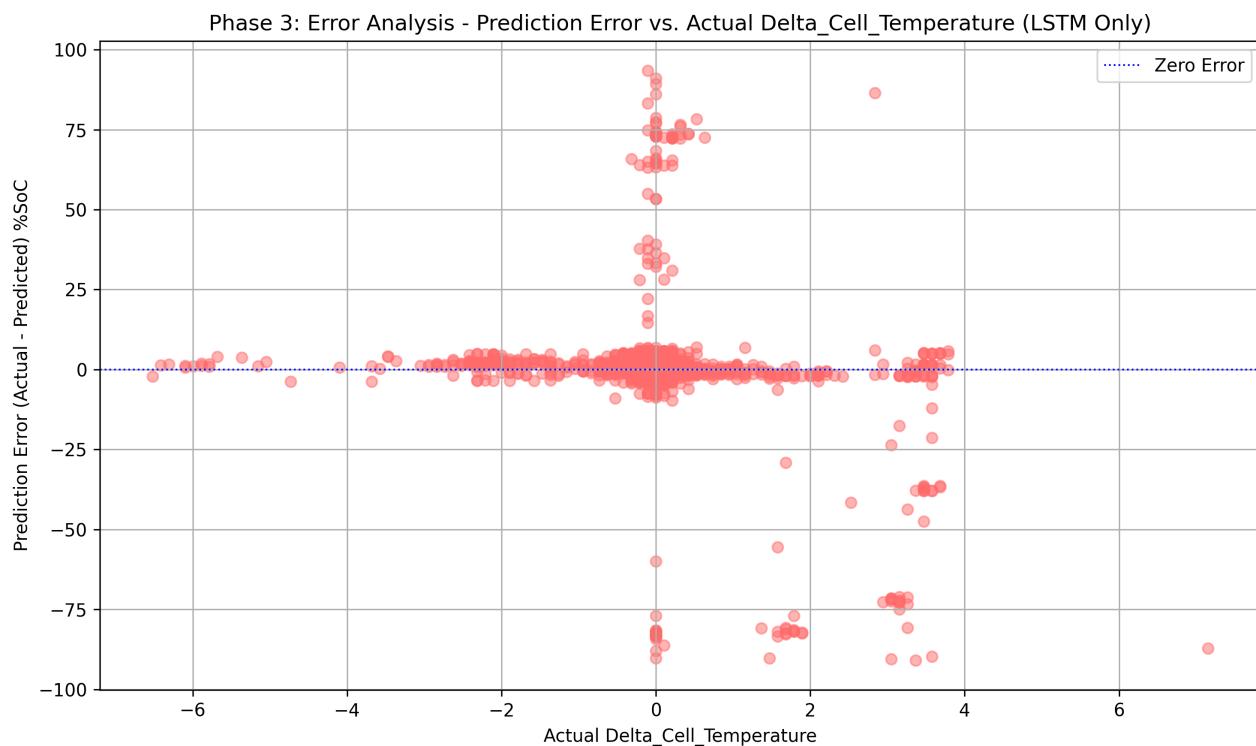


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Delta_Cell_Temperature (Final)

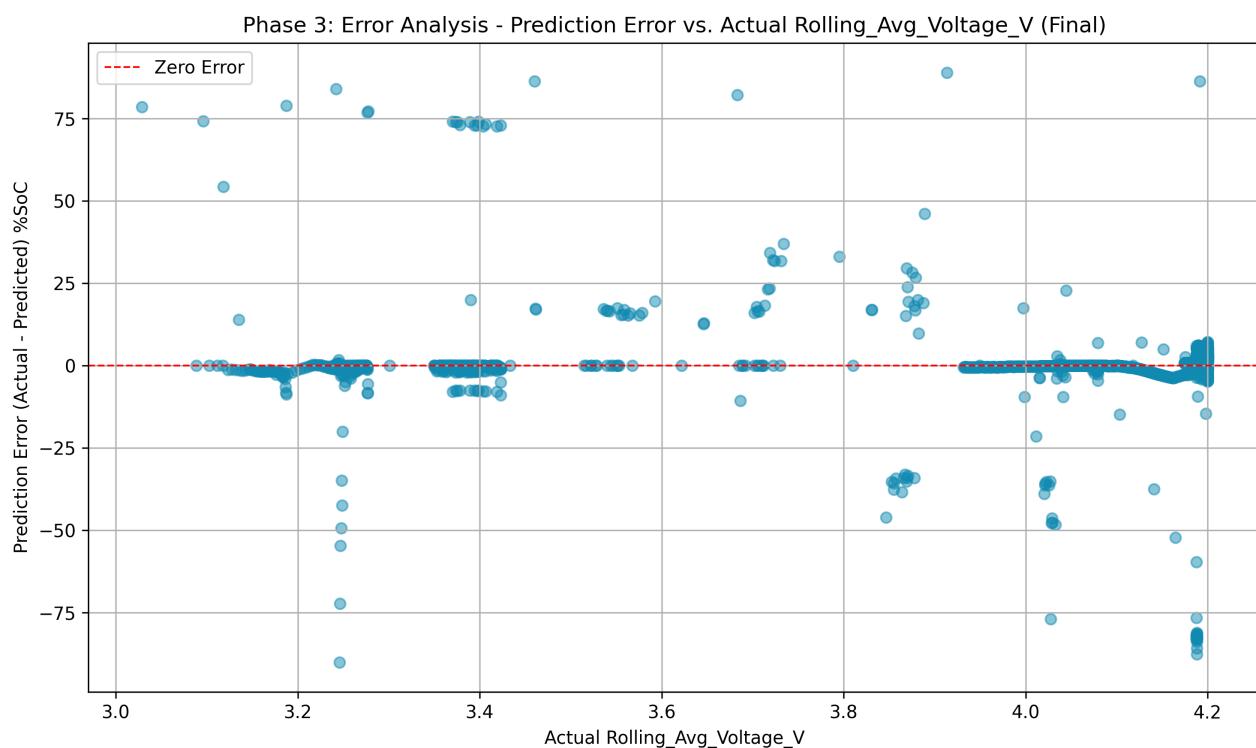


Plot: Prediction Error vs. Delta_Cell_Temperature (LSTM Only)

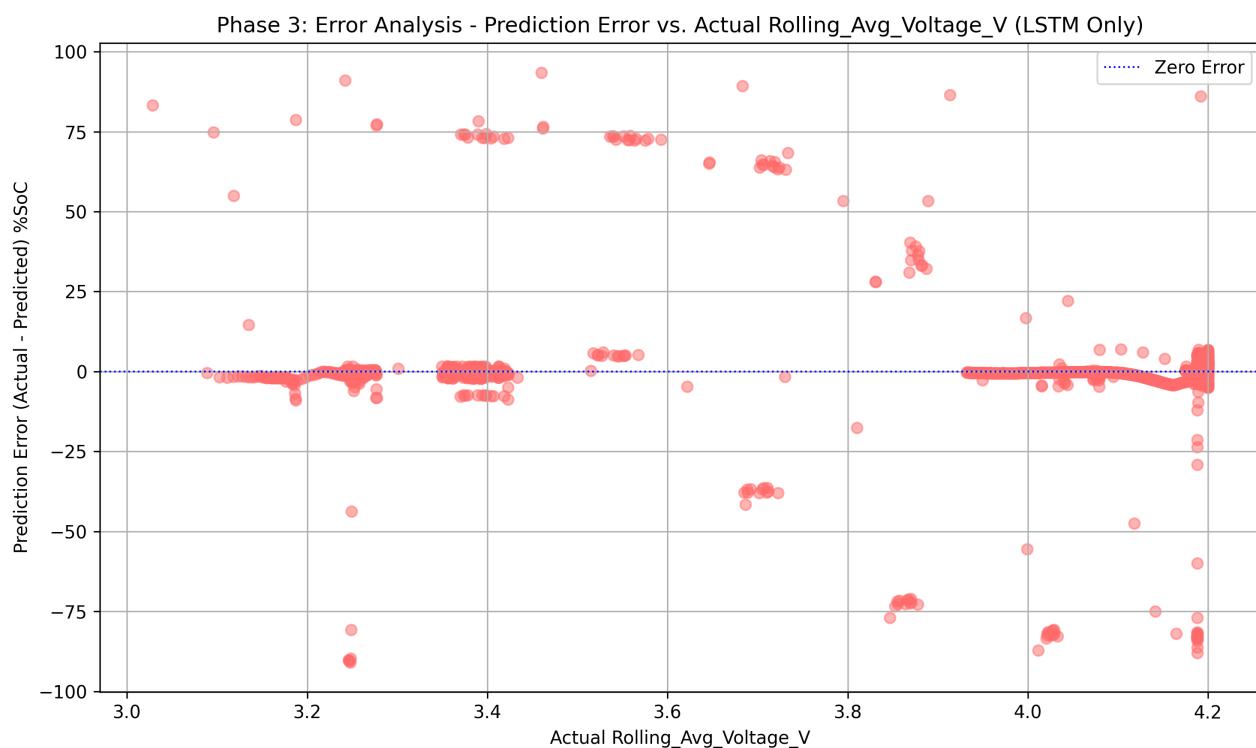


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Rolling_Avg_Voltage_V (Final)

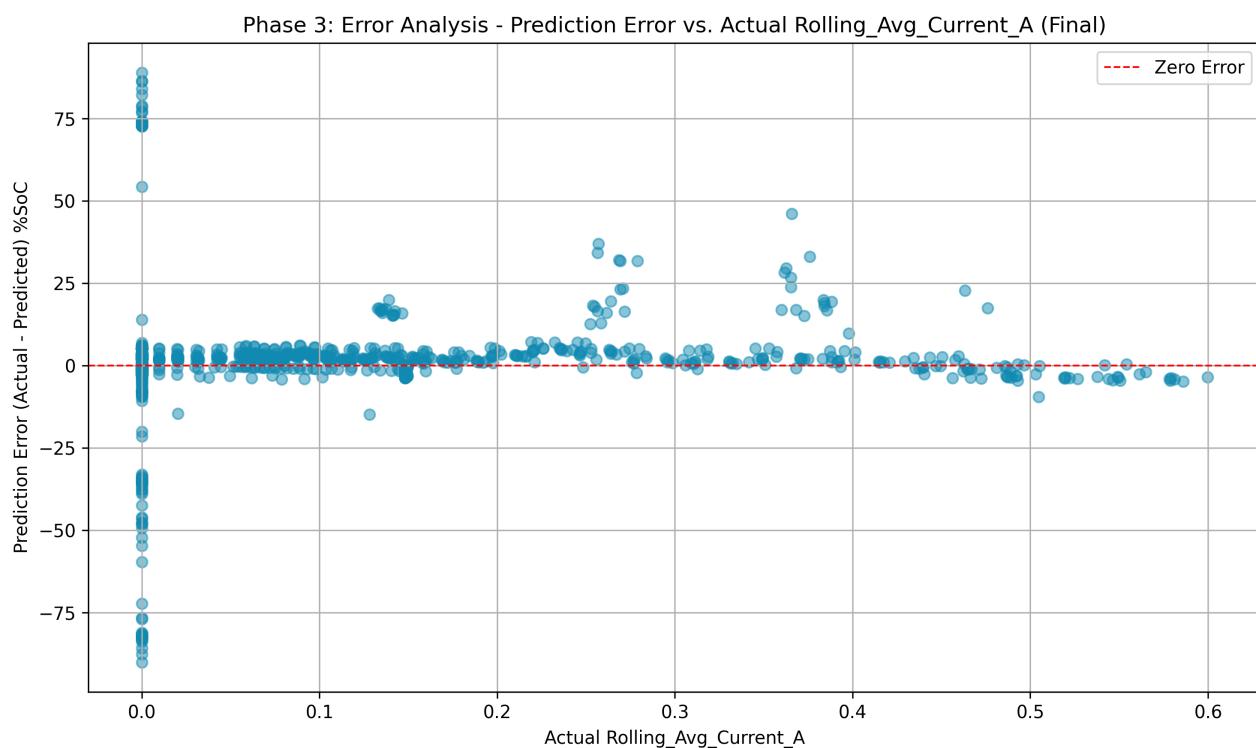


Plot: Prediction Error vs. Rolling_Avg_Voltage_V (LSTM Only)

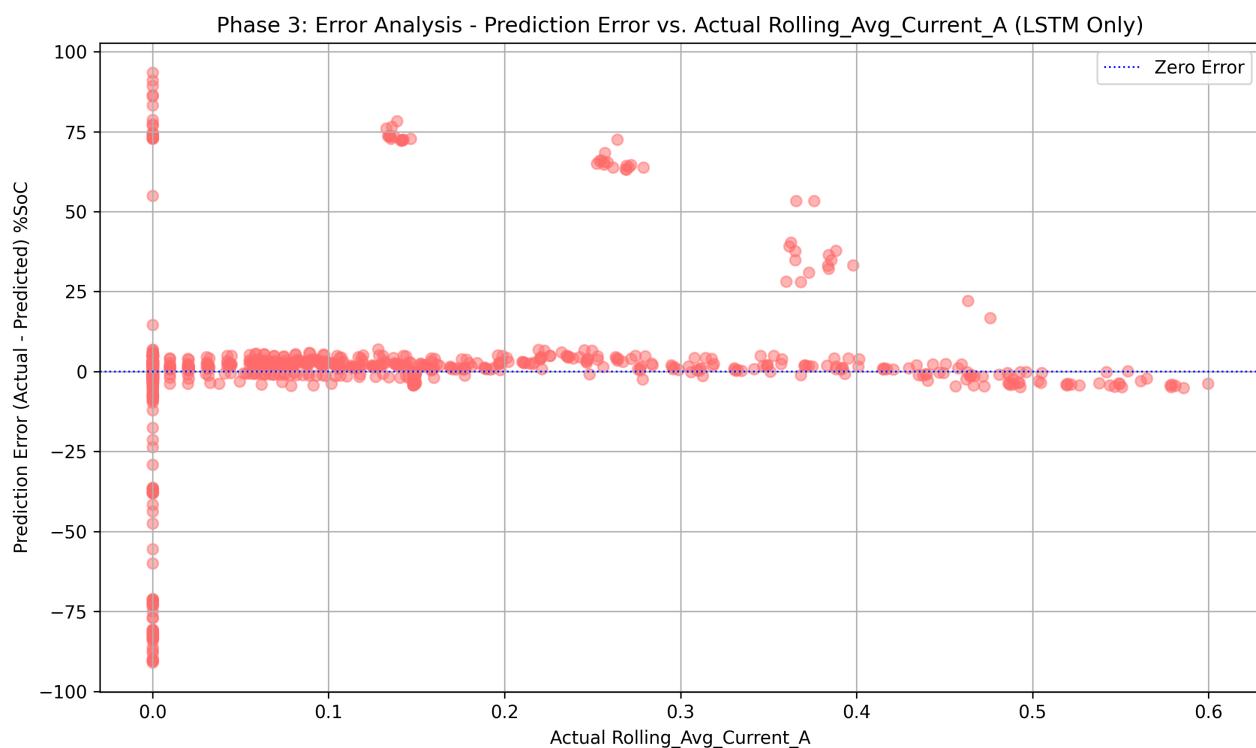


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Rolling_Avg_Current_A (Final)

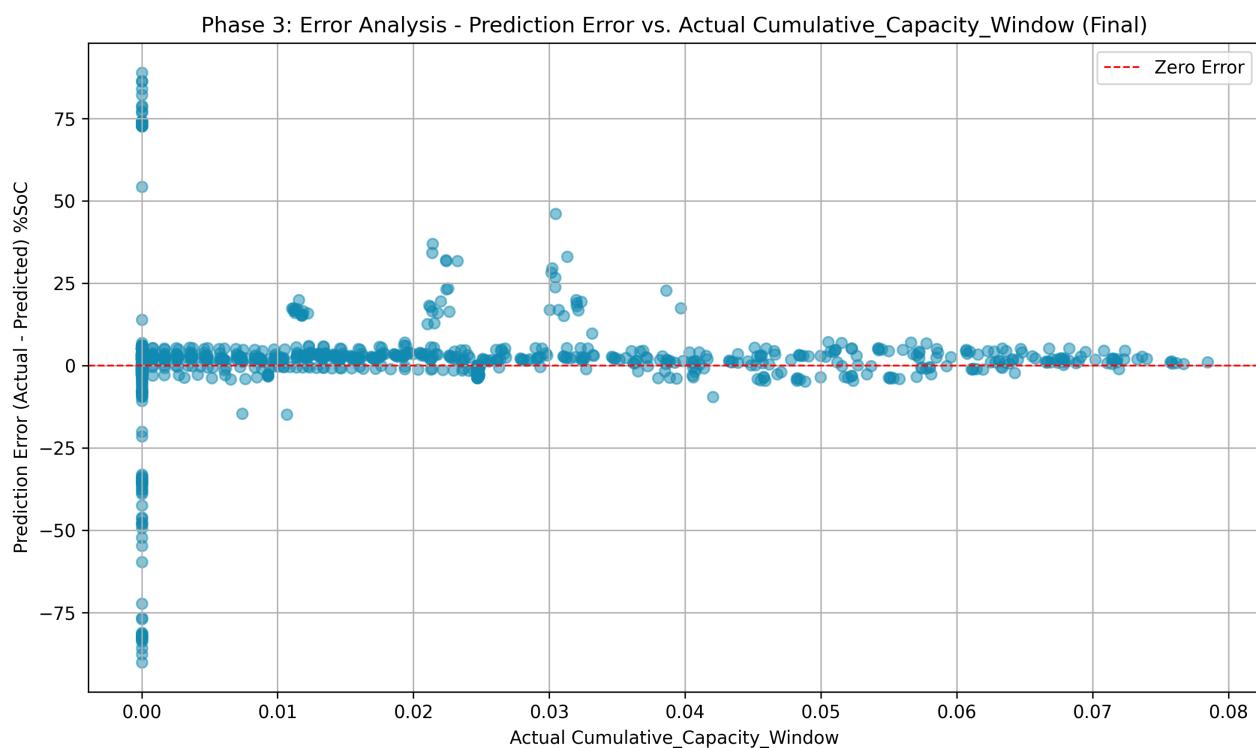


Plot: Prediction Error vs. Rolling_Avg_Current_A (LSTM Only)

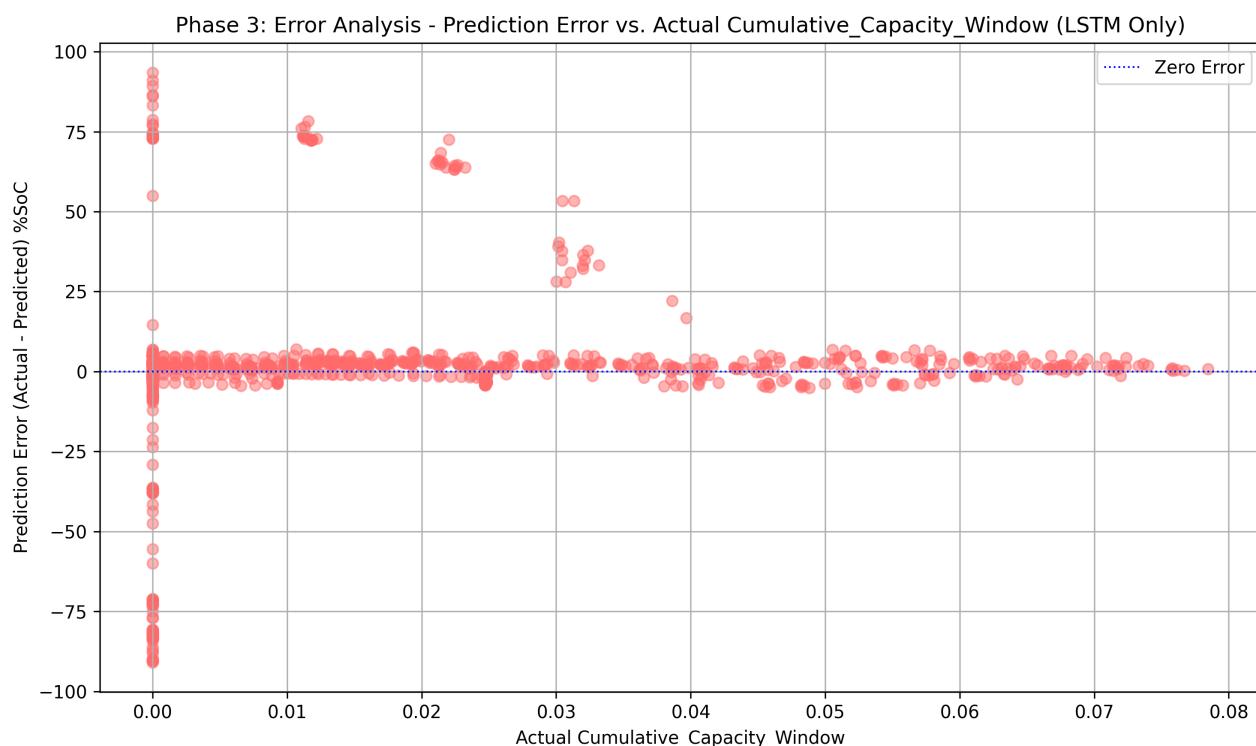


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Cumulative_Capacity_Window (Final)

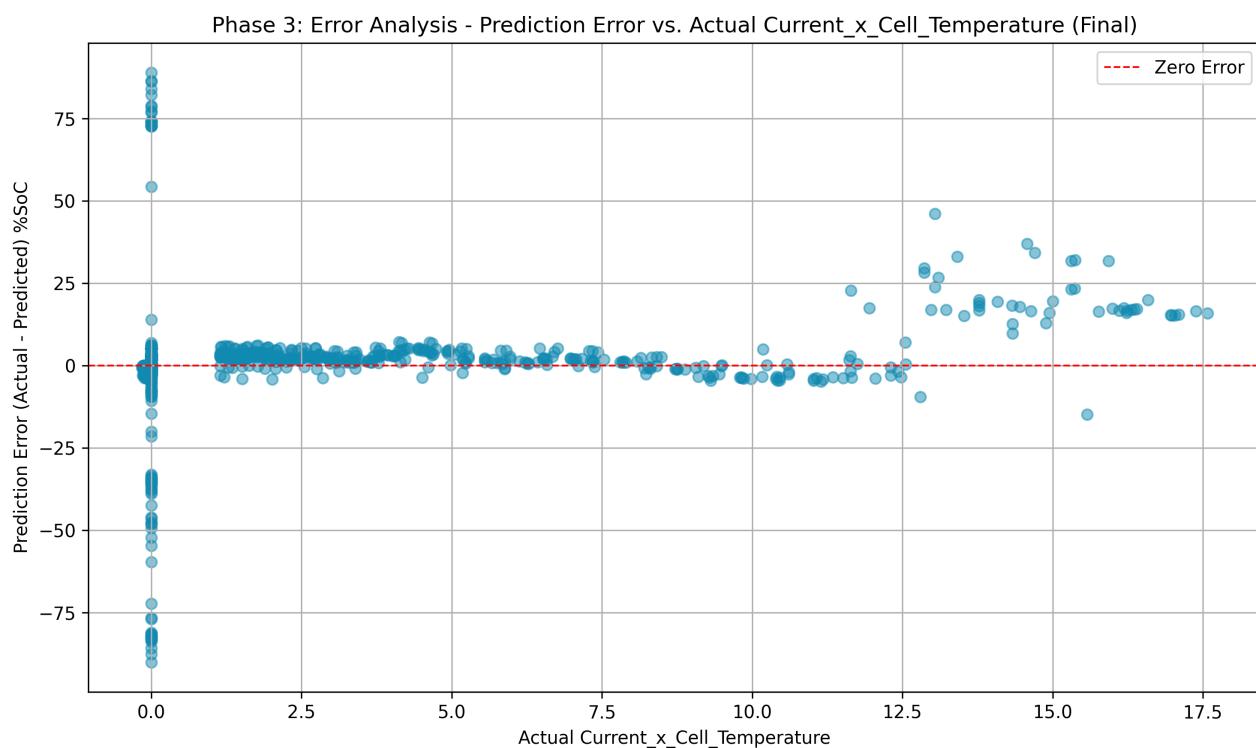


Plot: Prediction Error vs. Cumulative_Capacity_Window (LSTM Only)

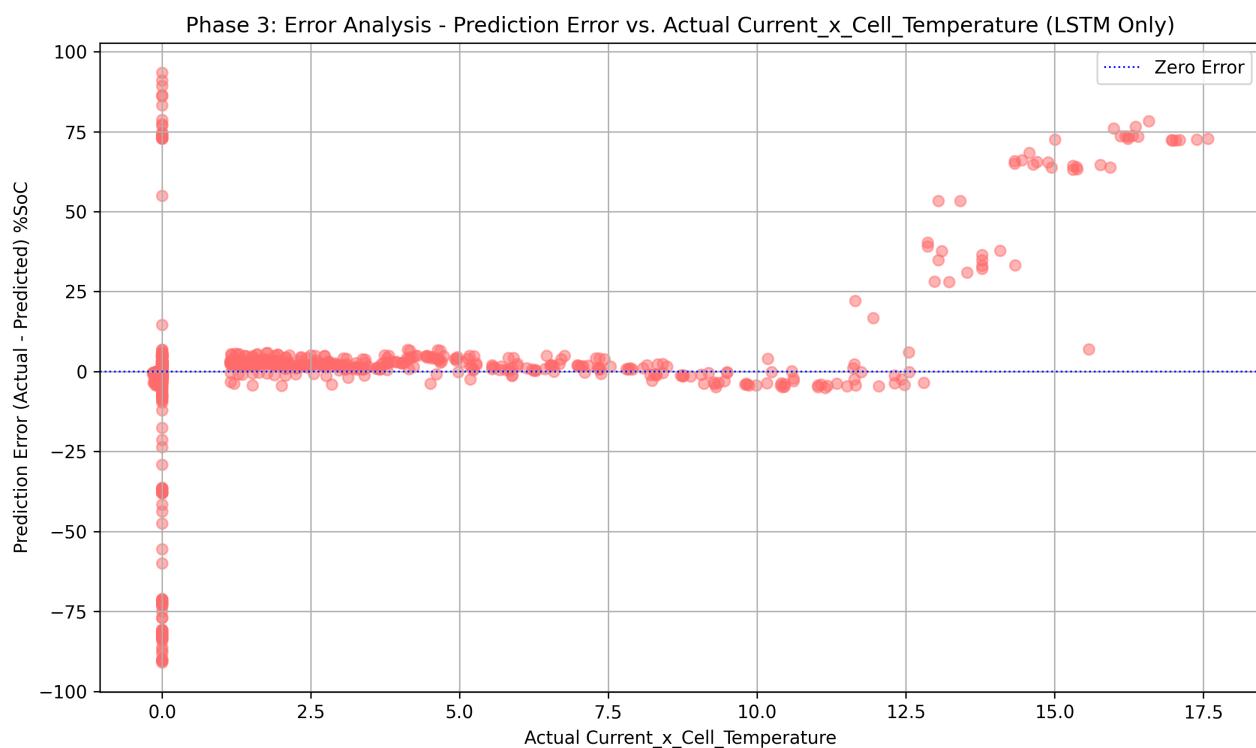


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Current_x_Cell_Temperature (Final)

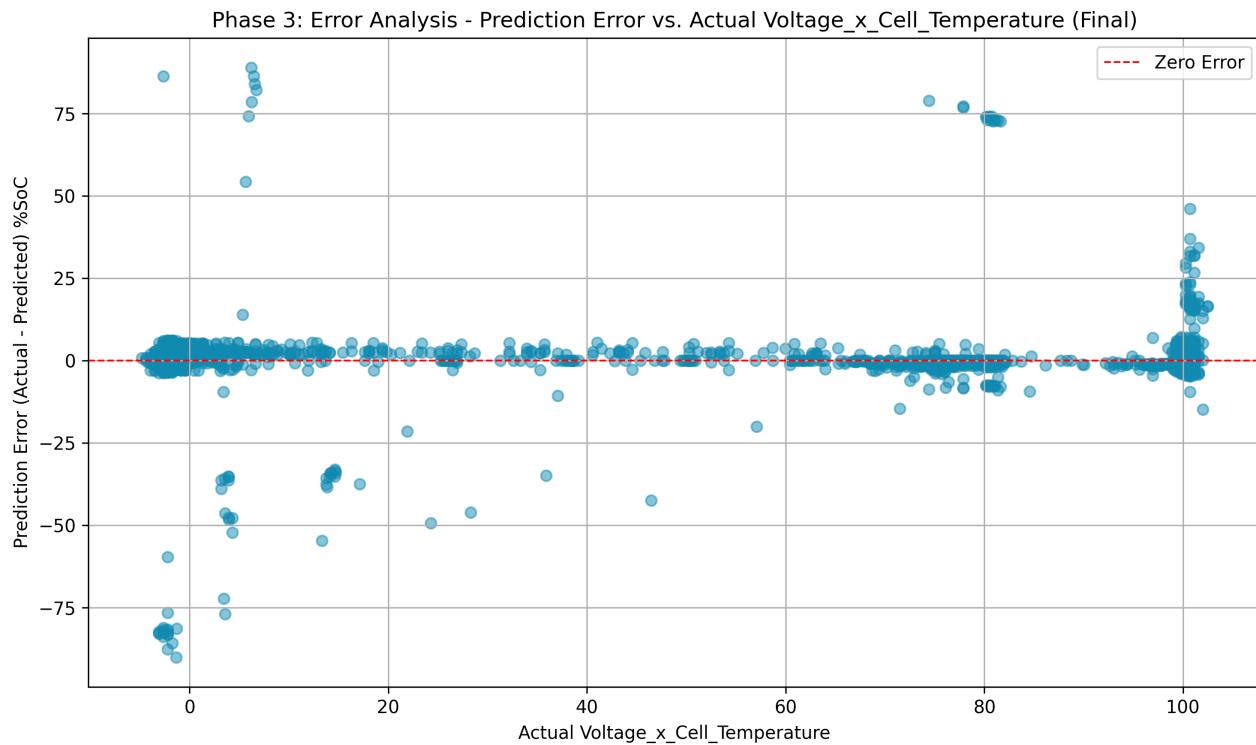


Plot: Prediction Error vs. Current_x_Cell_Temperature (LSTM Only)

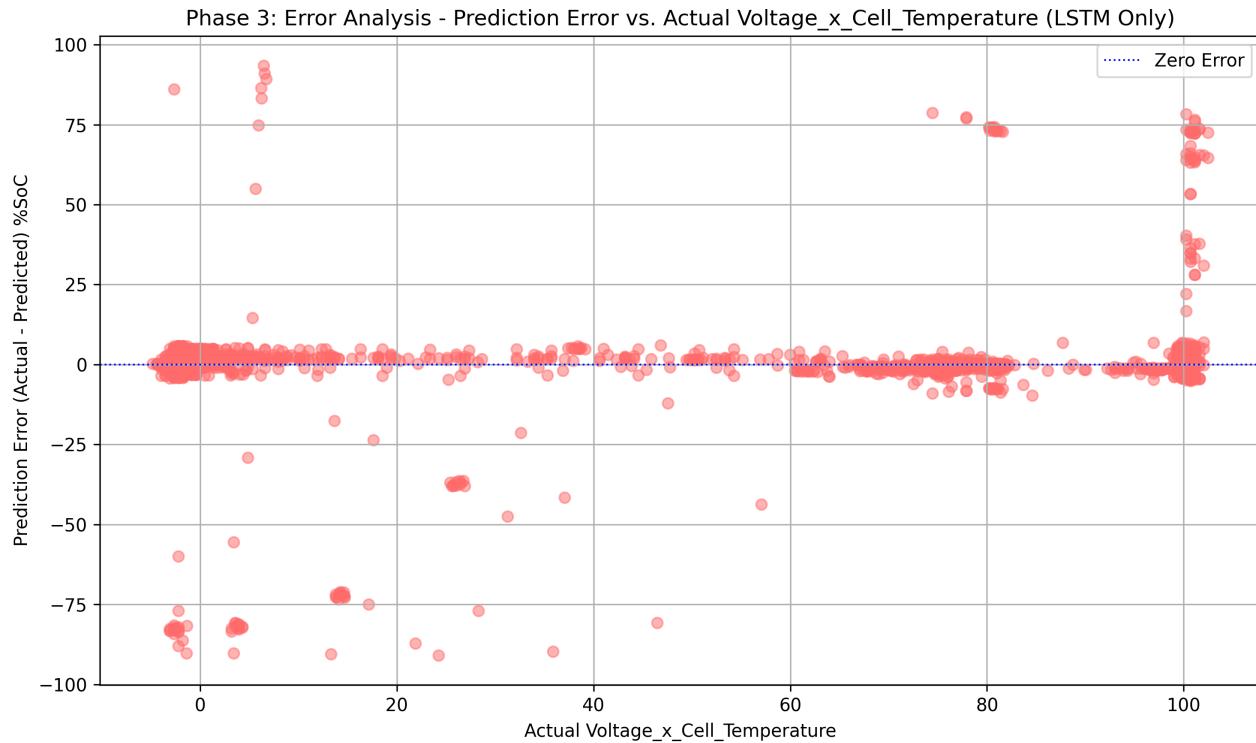


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Voltage_x_Cell_Temperature (Final)

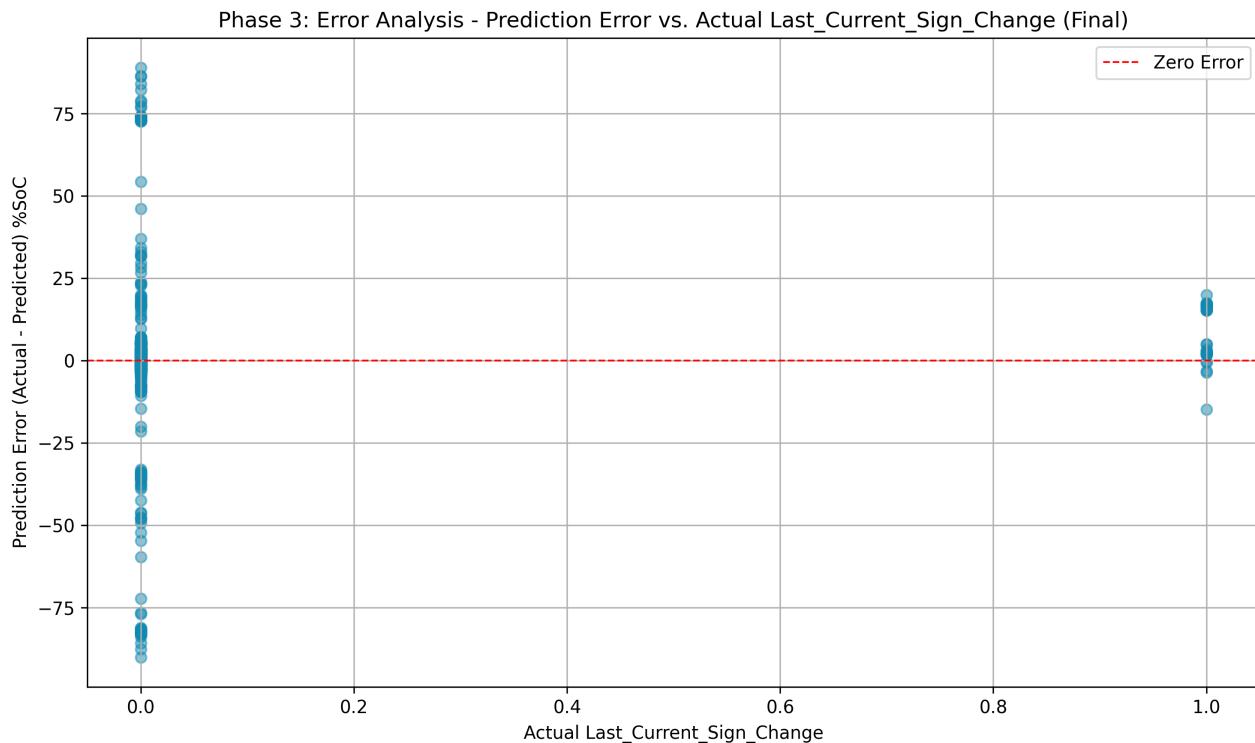


Plot: Prediction Error vs. Voltage_x_Cell_Temperature (LSTM Only)

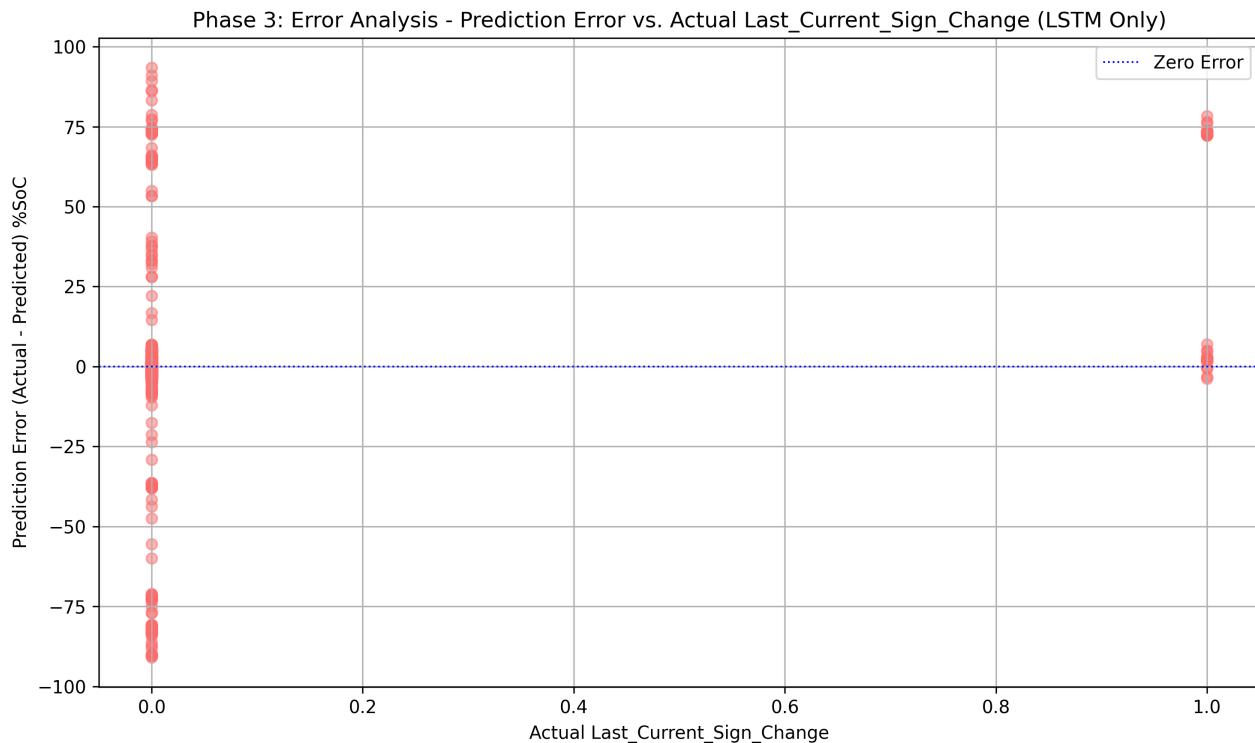


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Last_Current_Sign_Change (Final)

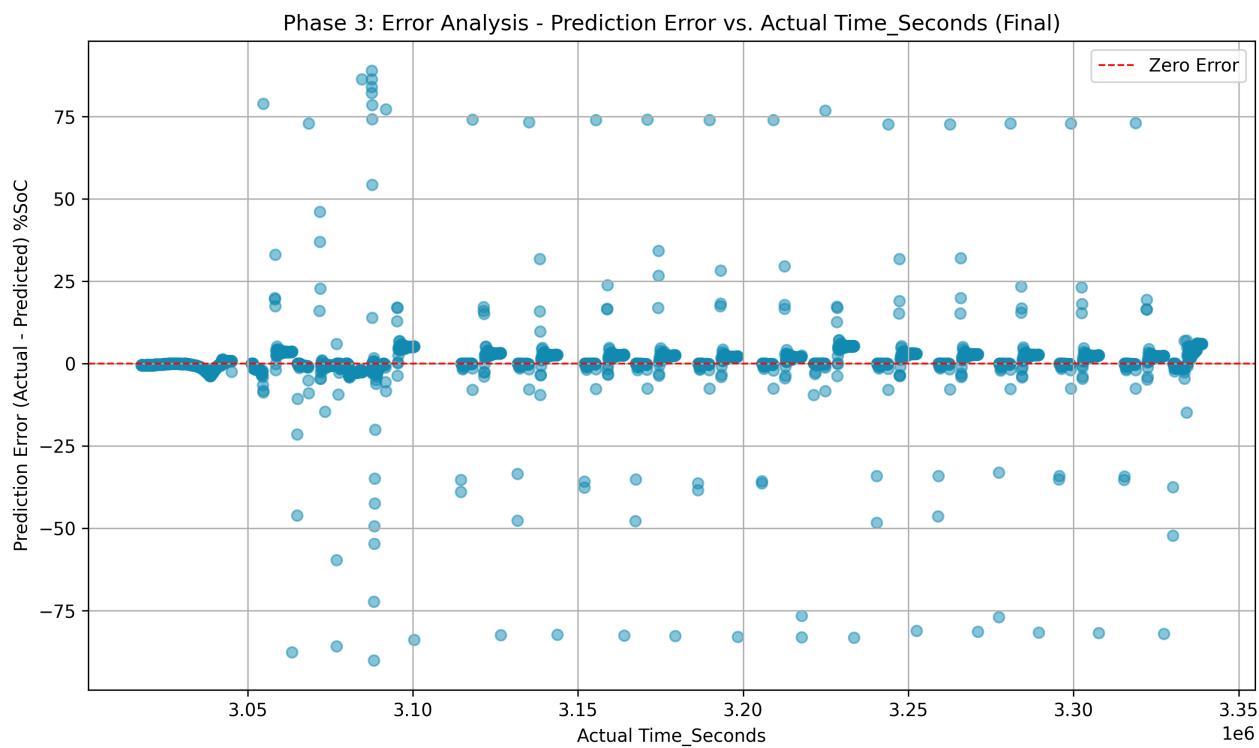


Plot: Prediction Error vs. Last_Current_Sign_Change (LSTM Only)

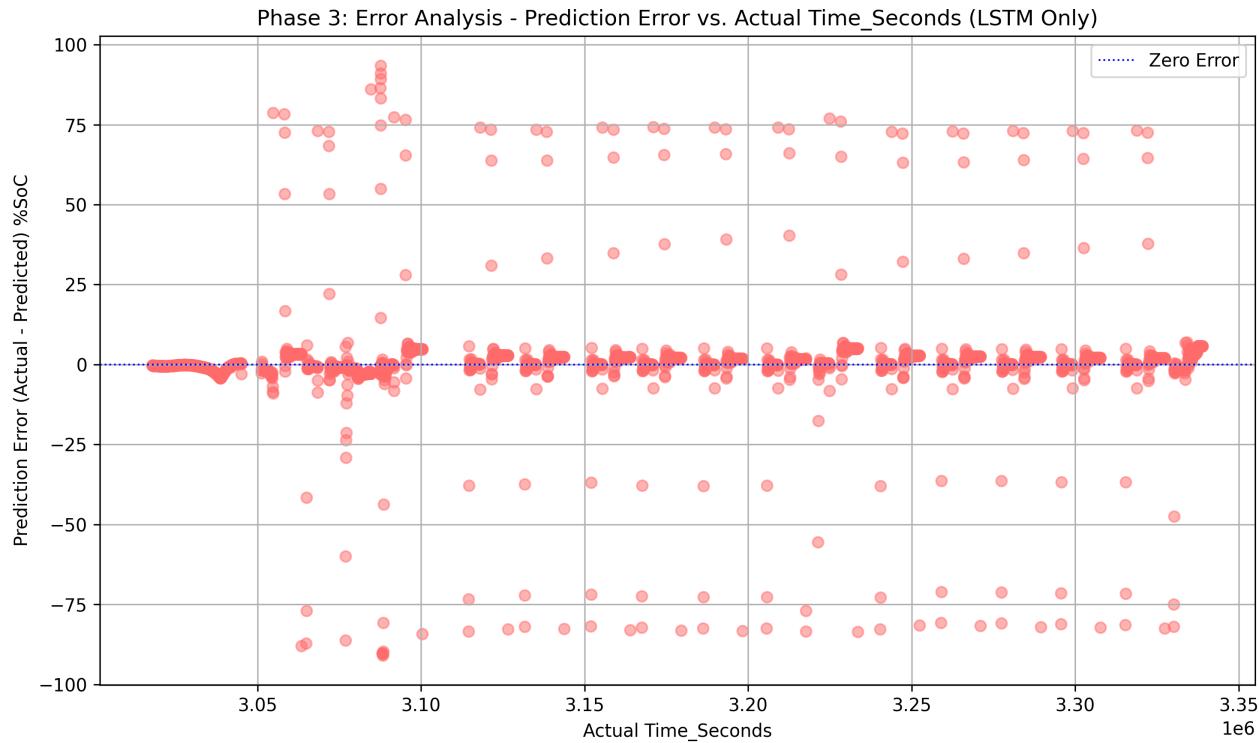


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Prediction Error vs. Time_Seconds (Final)

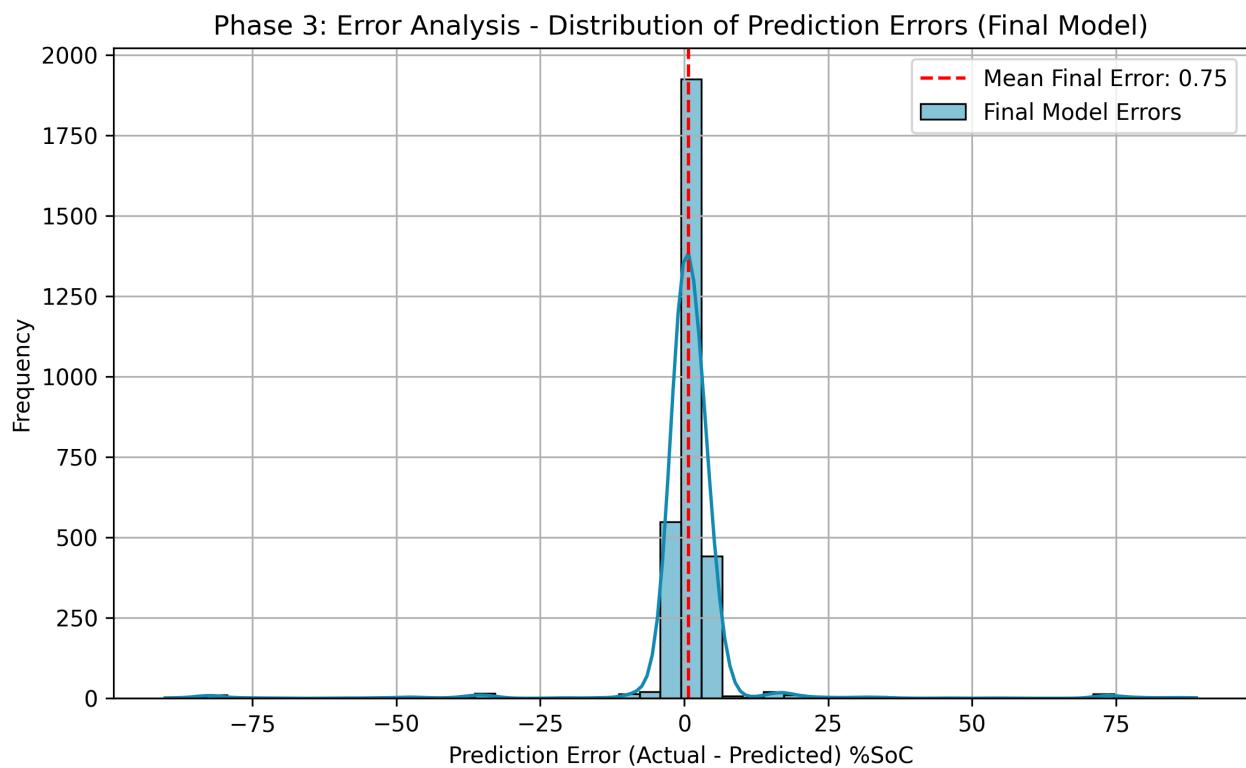


Plot: Prediction Error vs. Time_Seconds (LSTM Only)

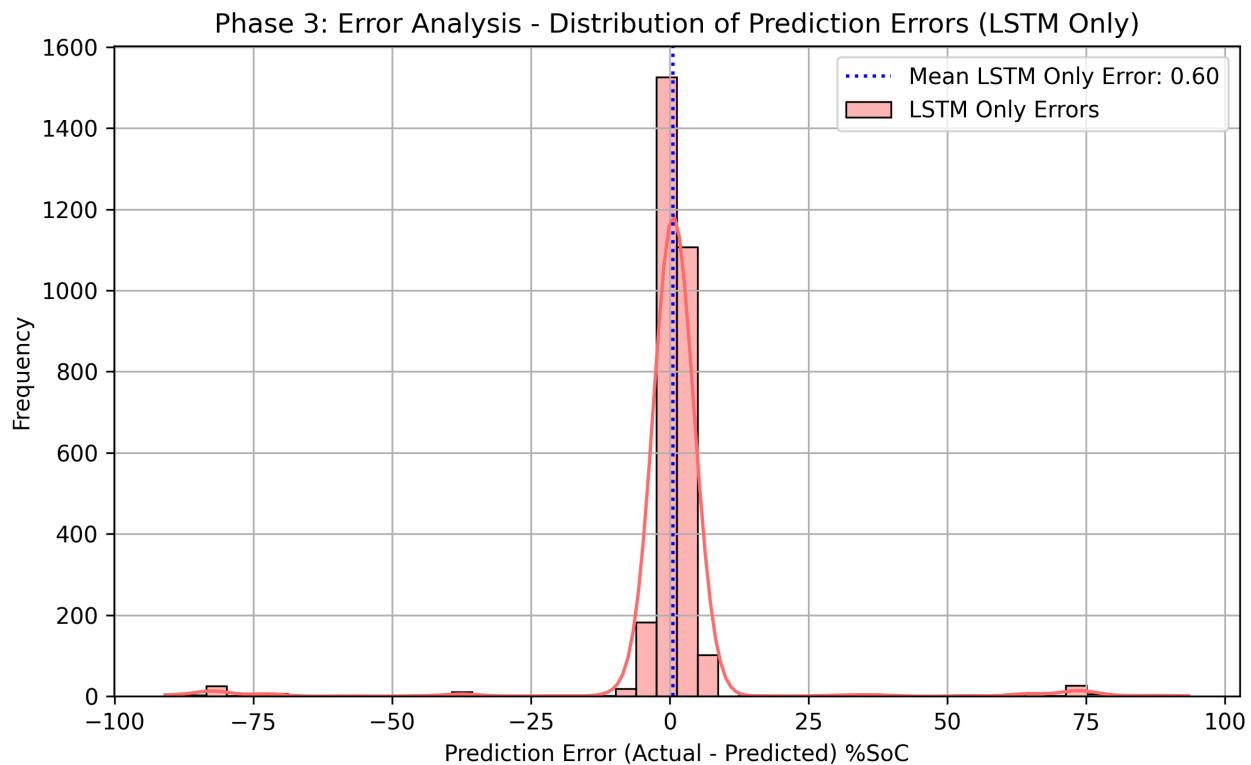


Phase 3: Error Analysis - Residuals (Cont.)

Plot: Error Distribution (Final Model)

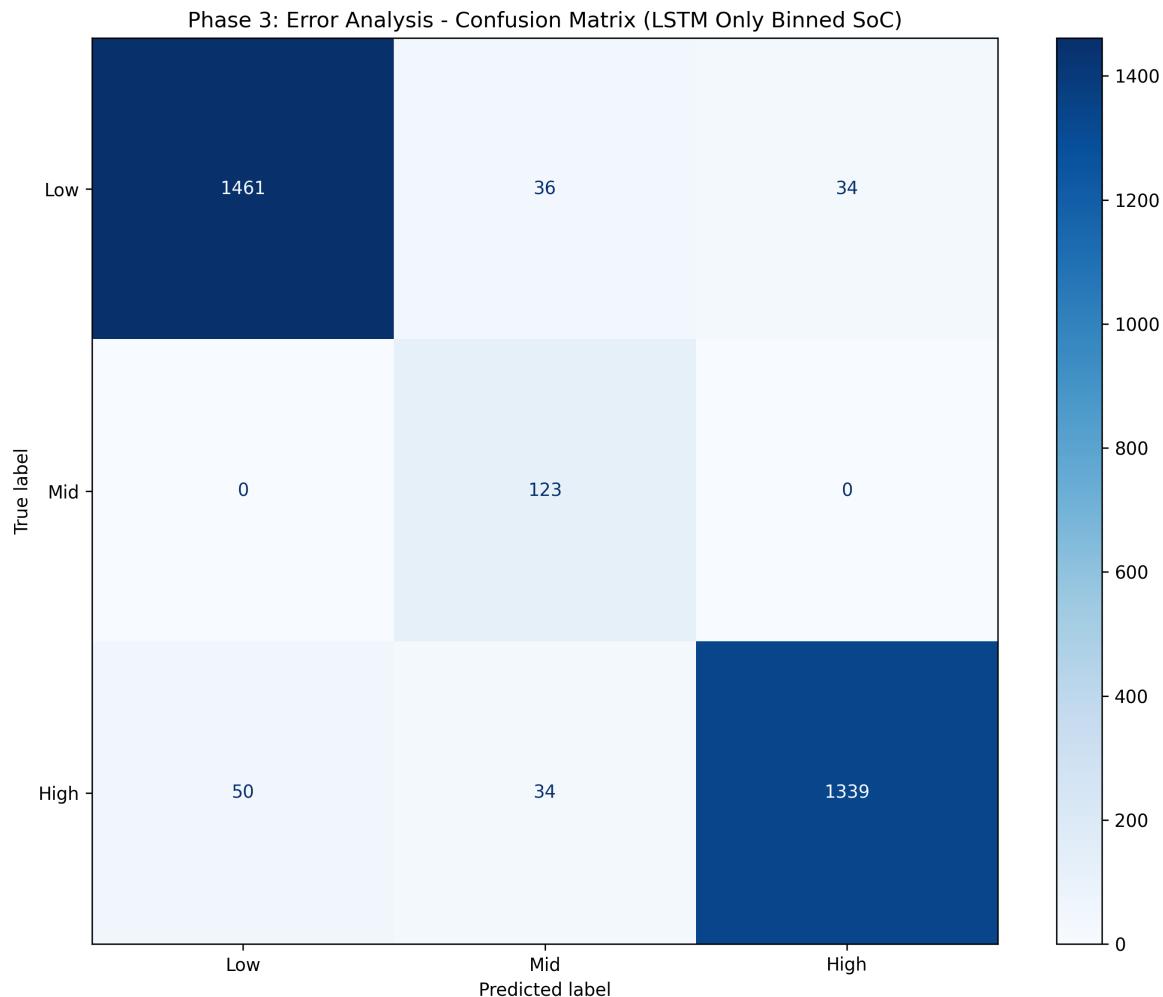


Plot: Error Distribution (LSTM Only)

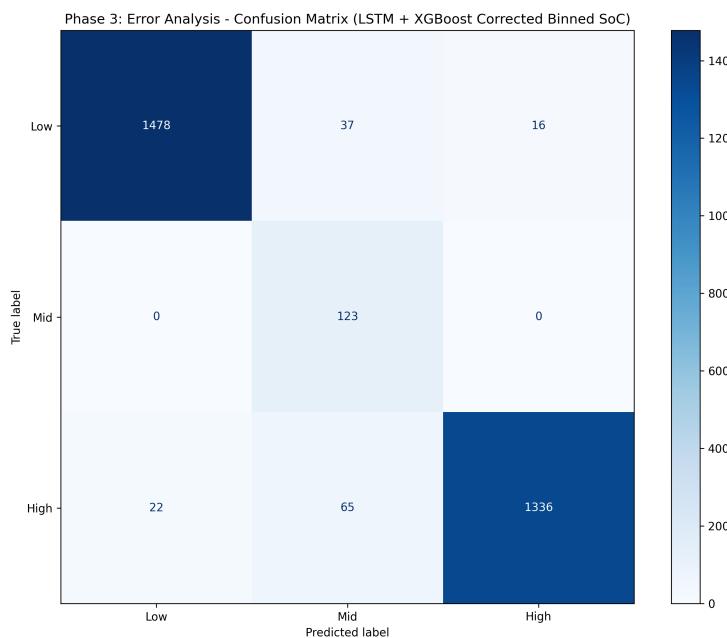


Phase 3: Error Analysis - Classification Performance

Plot: Confusion Matrix (LSTM Only Binned SoC)

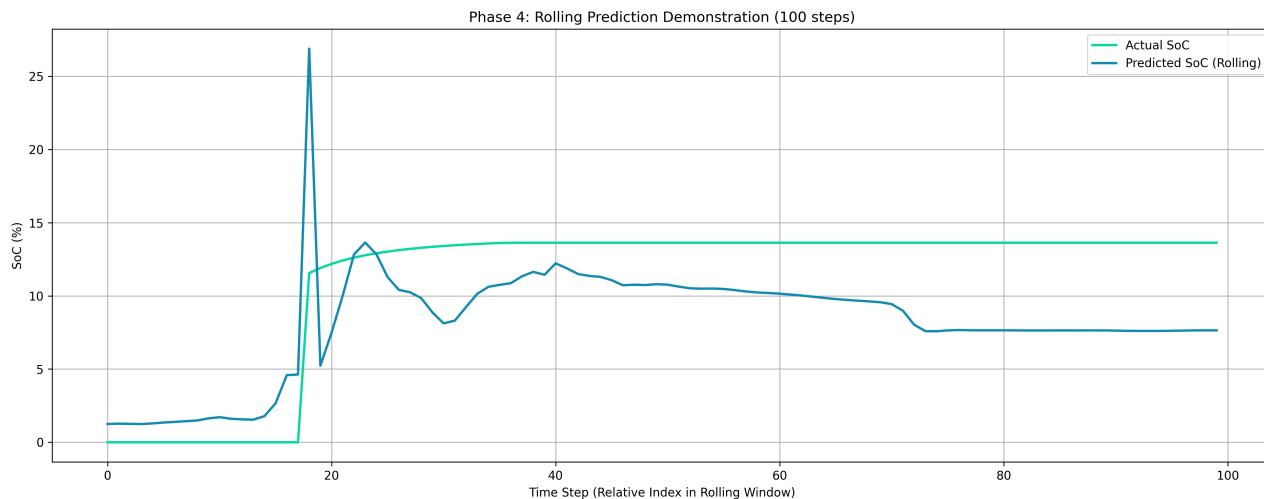


Plot: Confusion Matrix (LSTM + XGBoost Corrected Binned SoC)



Phase 4: Operational Demonstration

Plot: Rolling Prediction Demonstration



Conclusion and Discussion

The model's overall performance was rigorously evaluated on an unseen test set, providing the **primary statistical proof** of its accuracy and generalization capabilities. Key metrics obtained were: **Mean Absolute Error (MAE)** of **3.460977 (0-1 Scale)**, **Root Mean Squared Error (RMSE)** of **10.695798 (0-1 Scale)**, and an **R-squared (\$R^2\$)** of **0.9322**. The classification F1-score (weighted average for binned SoC) was **0.9588**. These values indicate that the model reliably predicts the State of Charge with low average deviations, and effectively captures the variance in the true SoC data, while also performing well in categorizing SoC levels.

Following this comprehensive evaluation, the single-point prediction demonstration served as a **critical operational validation** of the entire inference pipeline. For the simulated data instance, with an **Actual SoC of nan% (nan 0-1 Scale)**, the model predicted **nan% (nan 0-1 Scale)**, resulting in an **Absolute Error of nan% (nan 0-1 Scale)**. This error is notably different from the overall MAE of 346.10% SoC (3.460977 0-1 Scale), demonstrating that the deployed model can successfully process new raw inputs and produce a plausible SoC estimate in a 'live' scenario.

Note: A significant deviation in the single-point demonstration (if observed) compared to the overall average metrics may indicate the simulated data point represents a specific edge case, or a region of the SoC curve where the model's performance might be more variable. Such cases warrant further investigation into data representativeness.

Hyperparameter optimization using GridSearchCV was performed to identify the best LSTM configuration. Please refer to the 'Run Log' section for detailed cross-validation results and best parameters.

To further assess the model's robustness and the variability of its performance, it is recommended to **repeat the entire pipeline execution multiple times**. This can be achieved by varying the 'RANDOM_SEED_SPLIT' in the configuration for each run. Collecting the MAE, RMSE, and R-squared values from each trial allows for calculation of mean and standard deviation of these metrics, providing a more statistically robust understanding of the model's expected performance range under different random initializations or data splits (if stratified).