

- Threats & Model Info
- Performance Metrics
- Alert Distribution
- Confusion Matrix
- Training Progress
- Actual vs Predicted
- Sample Alerts
- Full Predictions
- Additional Reports

## Alert Thresholds

- Model Configuration

### MODEL CONFIGURATION

Report Generated: 2025-11-03 15:40:00  
Version: v2.0\_Enhanced

```
Model Type: Hybrid CNN-Bidirectional LSTM
Window Size: 30
CNN Filters Layer1: 64
CNN Filters Layer2: 32
LSTM Units Layer1: 64
LSTM Units Layer2: 32
Dense Units Layer1: 64
Dense Units Layer2: 32
Dropout Rate CNN: 0.2
Dropout Rate LSTM: 0.3
Dropout Rate Dense: 0.3
Learning Rate: 0.001
Batch Size: 64
Max Epochs: 100
Early Stopping Patience: 15
LR Reduction Patience: 5
LR Reduction Factor: 0.5
```

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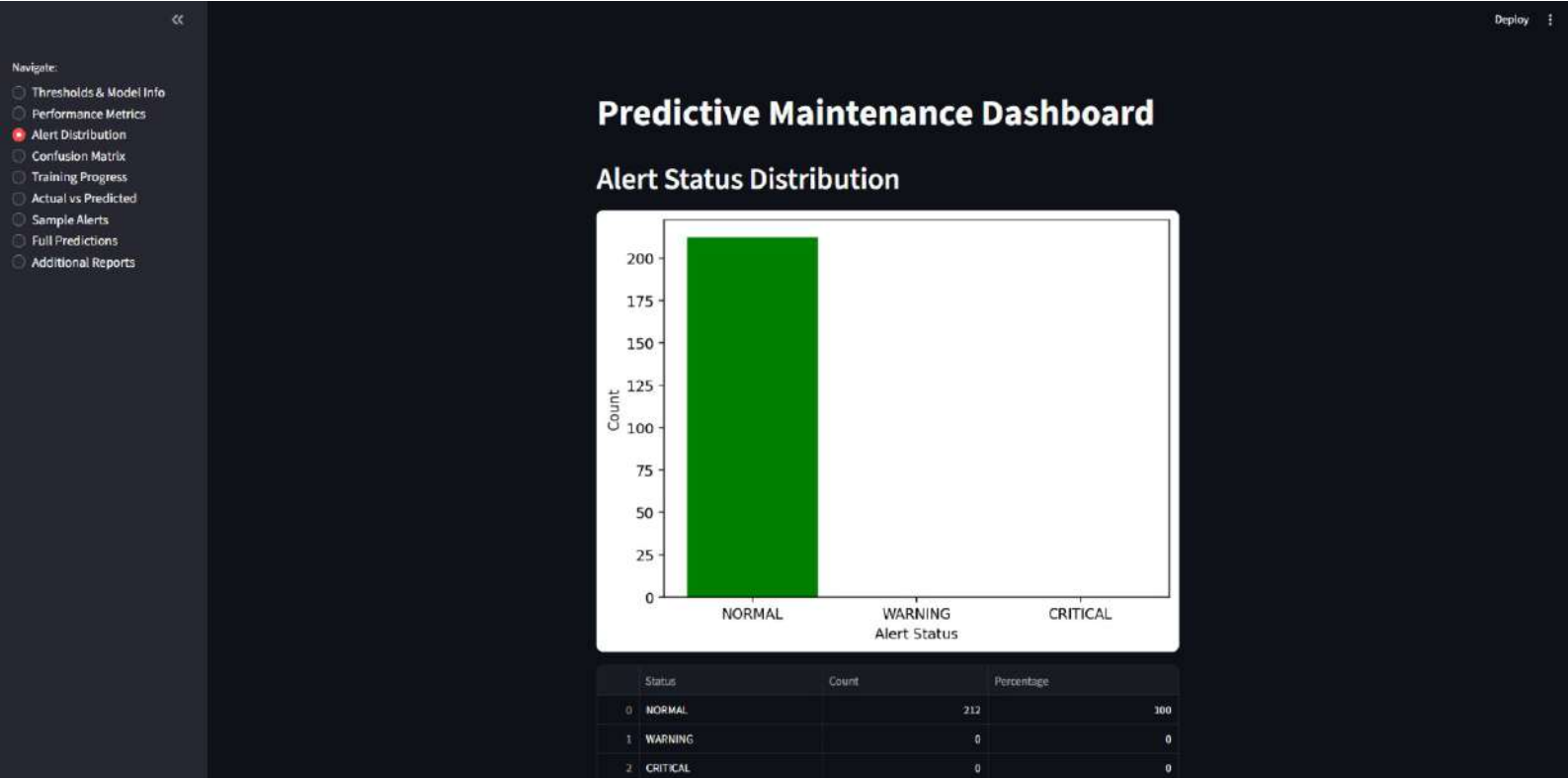
## Evaluation Metrics

Error Analysis:  
Mean Error: -385.7961 cycles  
Std of Errors: 61.2637 cycles  
Min Error: -391.2376 cycles  
Max Error: -180.2959 cycles

## ALERT SYSTEM PERFORMANCE REPORT

Overall Alert Accuracy: 81.60%

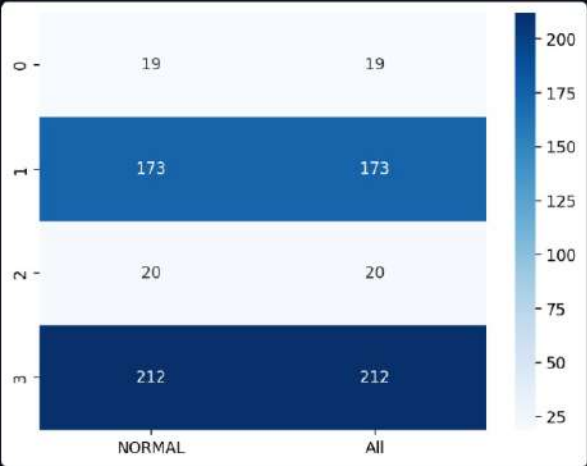
### Alert Classification Distribution



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# Predictive Maintenance Dashboard

## Alert Confusion Matrix



Dashboard last updated: 2025-11-04 20:56:15.890205

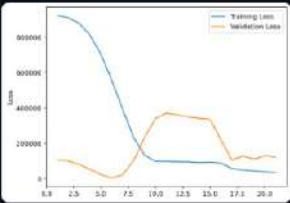
Navigation:

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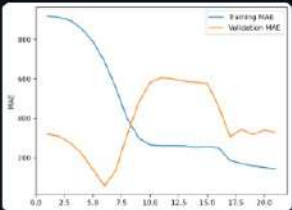
# Predictive Maintenance Dashboard

## Training History

Loss over Epochs



MAE over Epochs



Dashboard last updated: 2025-11-04 20:56:27.903055

Streamlit Version: 1.51.0

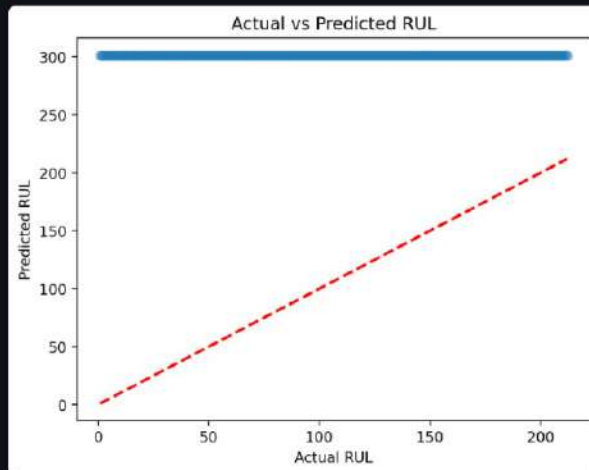
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## Predictive Maintenance Dashboard

### Actual vs Predicted RUL

☒ Show Perfect Prediction Line



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# Predictive Maintenance Dashboard

## First 20 Maintenance Alerts

Filter alert status

NORMAL X

	Sample_Index	Predicted_RUL	Actual_RUL	Alert_Status
0	1	392.295870	212	NORMAL
1	2	392.354280	211	NORMAL
2	3	392.358460	210	NORMAL
3	4	392.358220	209	NORMAL
4	5	392.360960	208	NORMAL
5	6	392.339540	207	NORMAL
6	7	392.325470	206	NORMAL
7	8	392.282680	203	NORMAL
8	9	392.206180	204	NORMAL
9	10	392.225460	203	NORMAL

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# Predictive Maintenance Dashboard

## Additional Details

▼ System Performance

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ALERT SYSTEM PERFORMANCE REPORT

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Report Generated: 2025-11-03 15:40:09

Version: v2.0\_Enhanced

Overall Alert Accuracy: 81.60%

Alert Thresholds:

CRITICAL: RUL < 20 cycles

WARNING: 20 ≤ RUL < 40 cycles

NORMAL: RUL ≥ 40 cycles

Alert Classification Distribution:

	Predicted	NORMAL	All
Actual			
CRITICAL	19	19	
NORMAL	173	173	
WARNING	20	20	
All	212	212	

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INTERPRETATION GUIDE

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- High accuracy indicates reliable maintenance scheduling

- False CRITICAL alerts â†’ unnecessary maintenance costs