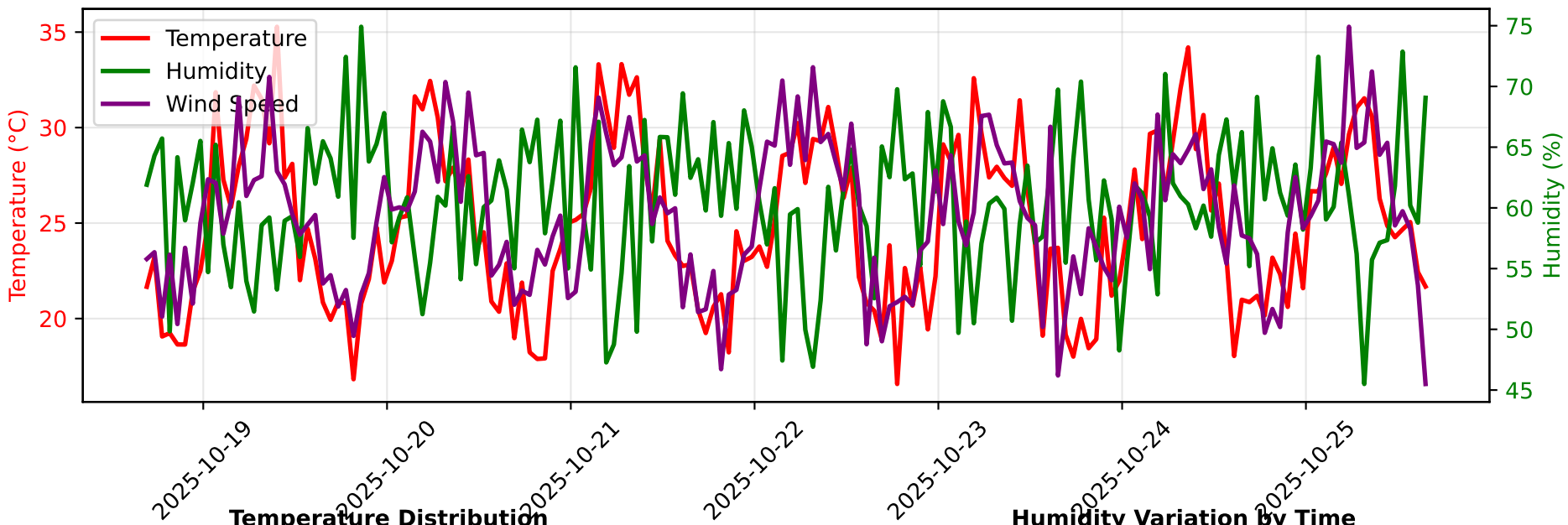
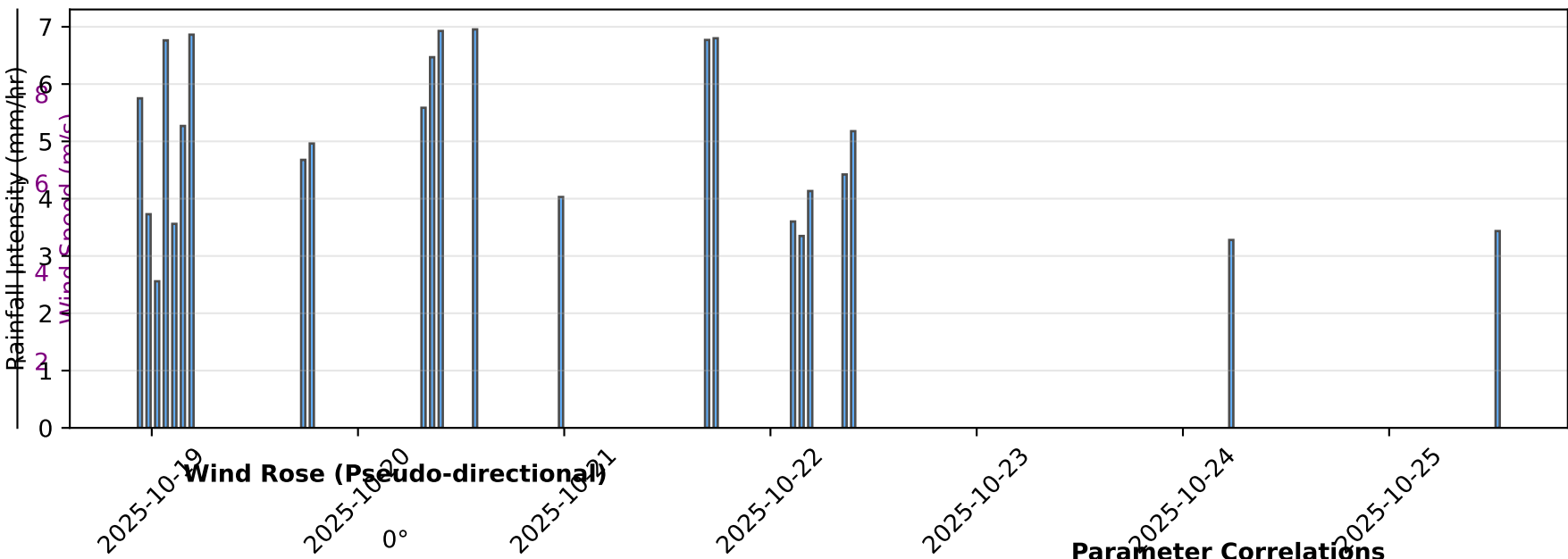


COMPREHENSIVE WEATHER STATION ANALYSIS DASHBOARD

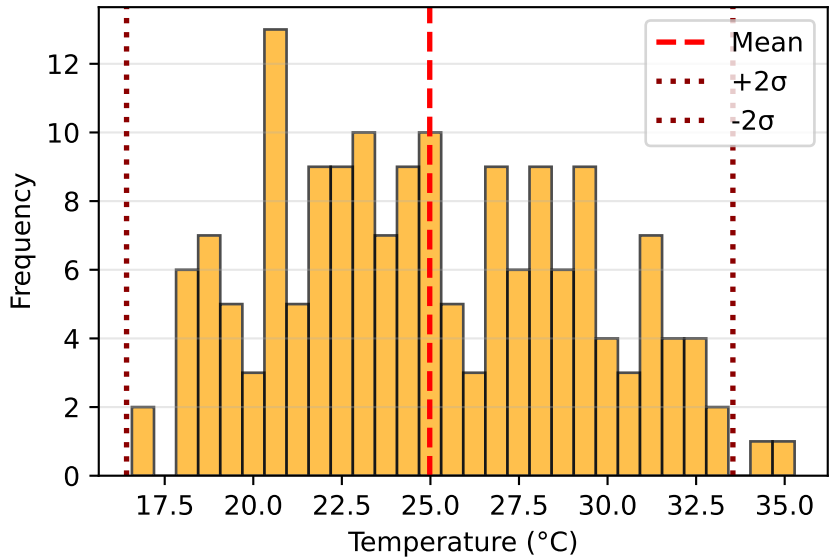
Multi-Parameter Weather Timeline



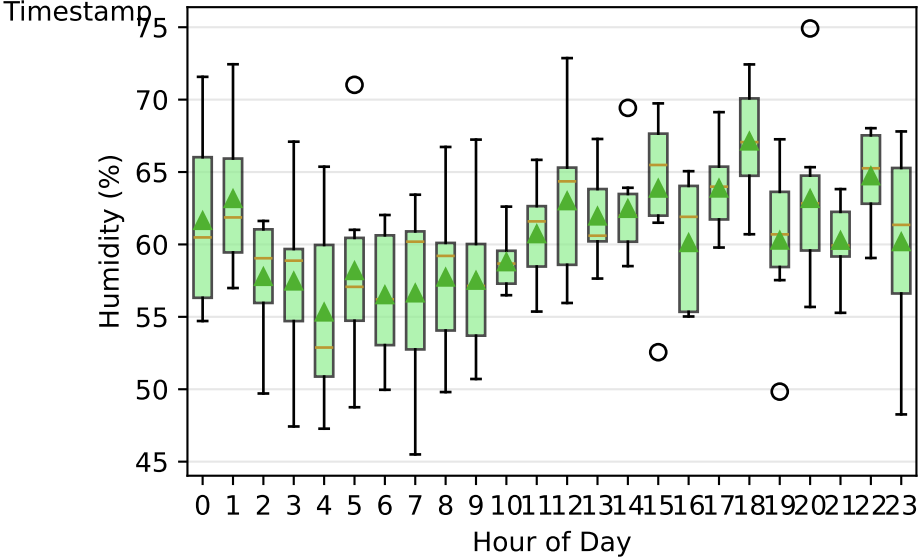
Rainfall Events



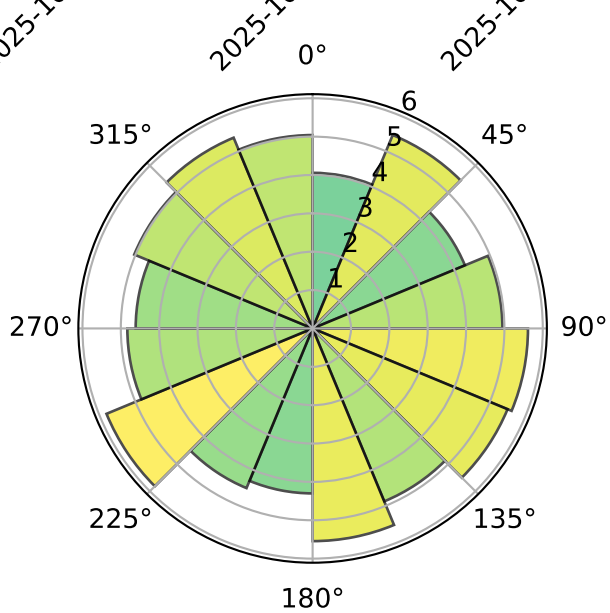
Temperature Distribution



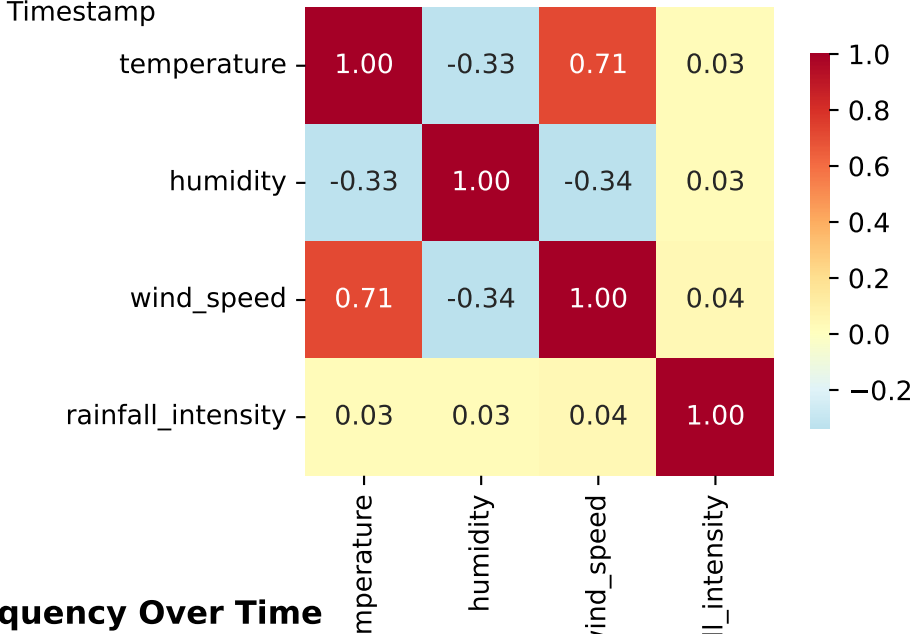
Humidity Variation By Time



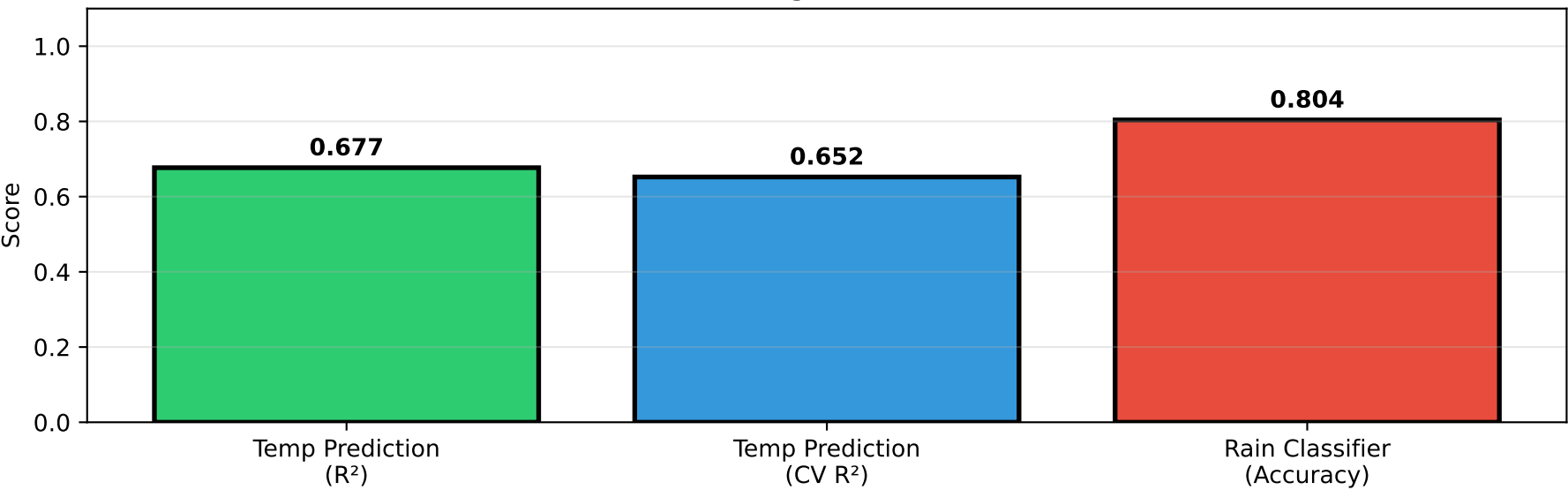
Wind Rose (Pseudo-directional)



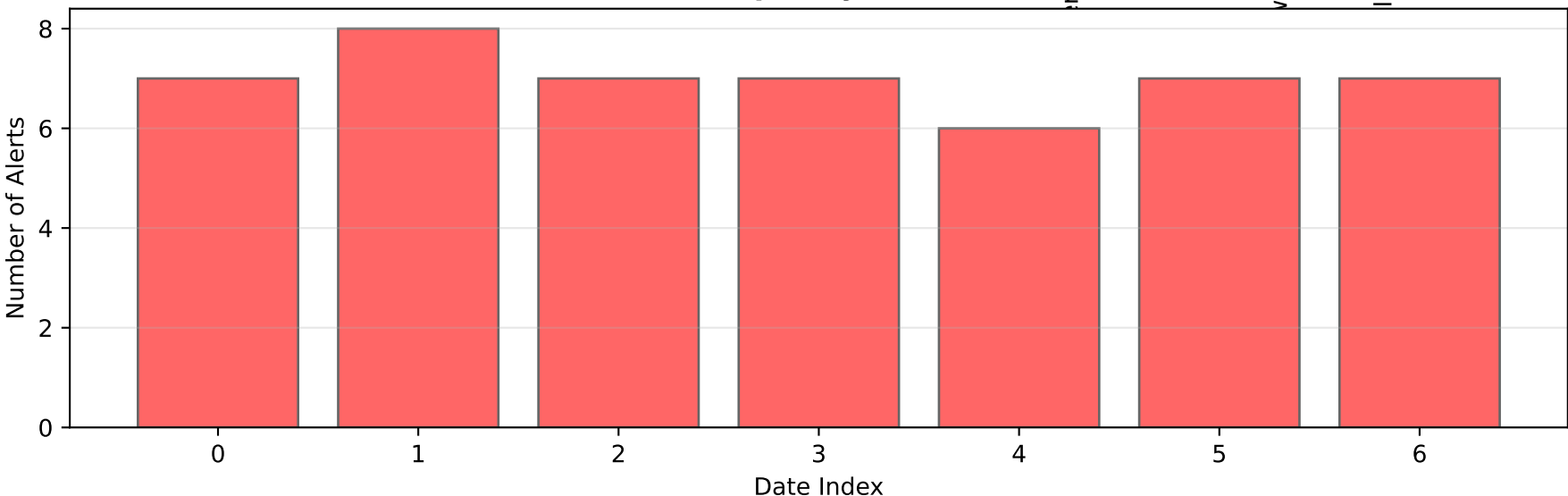
Parameter Correlations



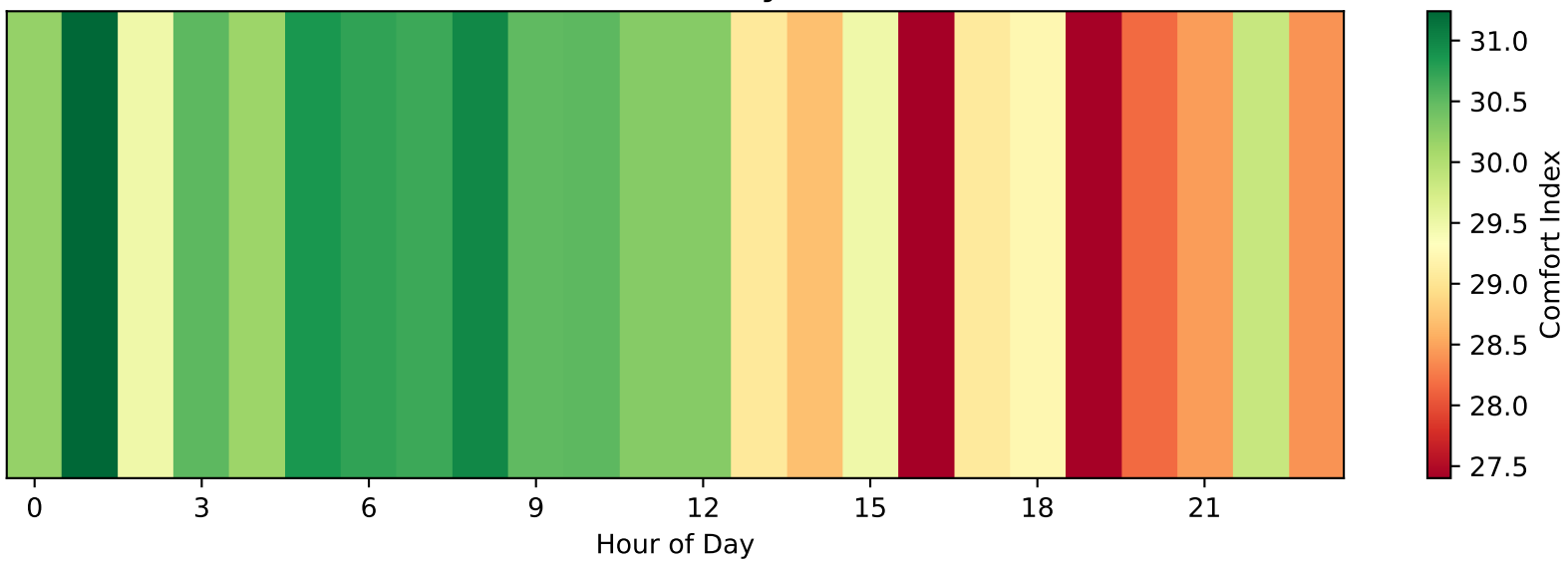
Machine Learning Model Performance



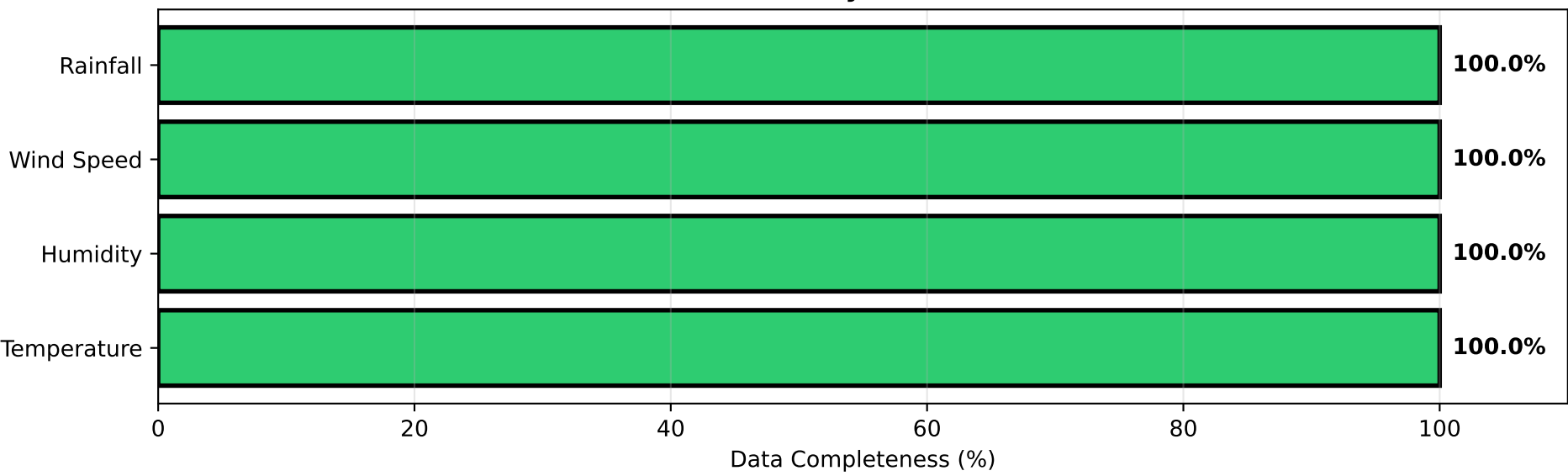
Alert Frequency Over Time



Comfort Index by Hour



Data Quality Assessment



```
=====
AUTOMATIC WEATHER STATION ANALYSIS
COMPREHENSIVE REPORT
=====

ANALYSIS PERIOD:
  Start: 2025-10-18 16:37:34.516571
  End: 2025-10-25 15:37:34.516571
  Total Records: 168
  Duration: 167.0 hours

=====

WEATHER STATISTICS
=====

TEMPERATURE:
  Mean: 24.98°C
  Min: 16.57°C
  Max: 35.28°C
  Std Dev: 4.28°C

HUMIDITY:
  Mean: 60.51%
  Min: 45.50%
  Max: 74.91%
  Std Dev: 5.69%

WIND SPEED:
  Mean: 4.98 m/s
  Min: 0.93 m/s
  Max: 9.47 m/s
  Std Dev: 1.68 m/s

RAINFALL:
  Total: 115.07 mm
  Max Intensity: 6.95 mm/hr
  Avg Intensity: 5.00 mm/hr
  Rain Hours: 23

=====

MACHINE LEARNING MODELS
=====

TEMPERATURE PREDICTION (Random Forest):
  R² Score: 0.6769
  RMSE: 2.4842°C
  CV R² Mean: 0.6522
  CV R² Std: 0.0542

RAINFALL CLASSIFICATION (Gradient Boosting):
  Accuracy: 0.8039

=====

ALERT SYSTEM
=====

Total Alerts Generated: 49

Alert Types:
  High Heat: 27
  Extreme Heat: 15
  Fresh Breeze: 6
  Stormy Conditions: 1

=====

DATA QUALITY
=====

Temperature Completeness: 100.0%
Humidity Completeness: 100.0%
Wind Speed Completeness: 100.0%
Rainfall Completeness: 100.0%

=====

FILES GENERATED
=====
✓ Data File: c:\Users\rkste\Desktop\AI Rockfall Prediction\Data\weather_station_data.csv
✓ Predictions CSV: c:\Users\rkste\Desktop\AI Rockfall Prediction\Upload\Auto Weather station\Analysis\weather_predictions.csv
✓ PDF Report: c:\Users\rkste\Desktop\AI Rockfall Prediction\Upload\Auto Weather station\Report\weather_analysis_report.pdf

=====
☐ Weather Station Analysis Complete!
☐ All visualizations, models, and reports generated successfully!
=====
```