HVAC Sentinel Dashboard

A one stop User-Centric solution for HVAC Predictive Maintenance based on real-time sensor data

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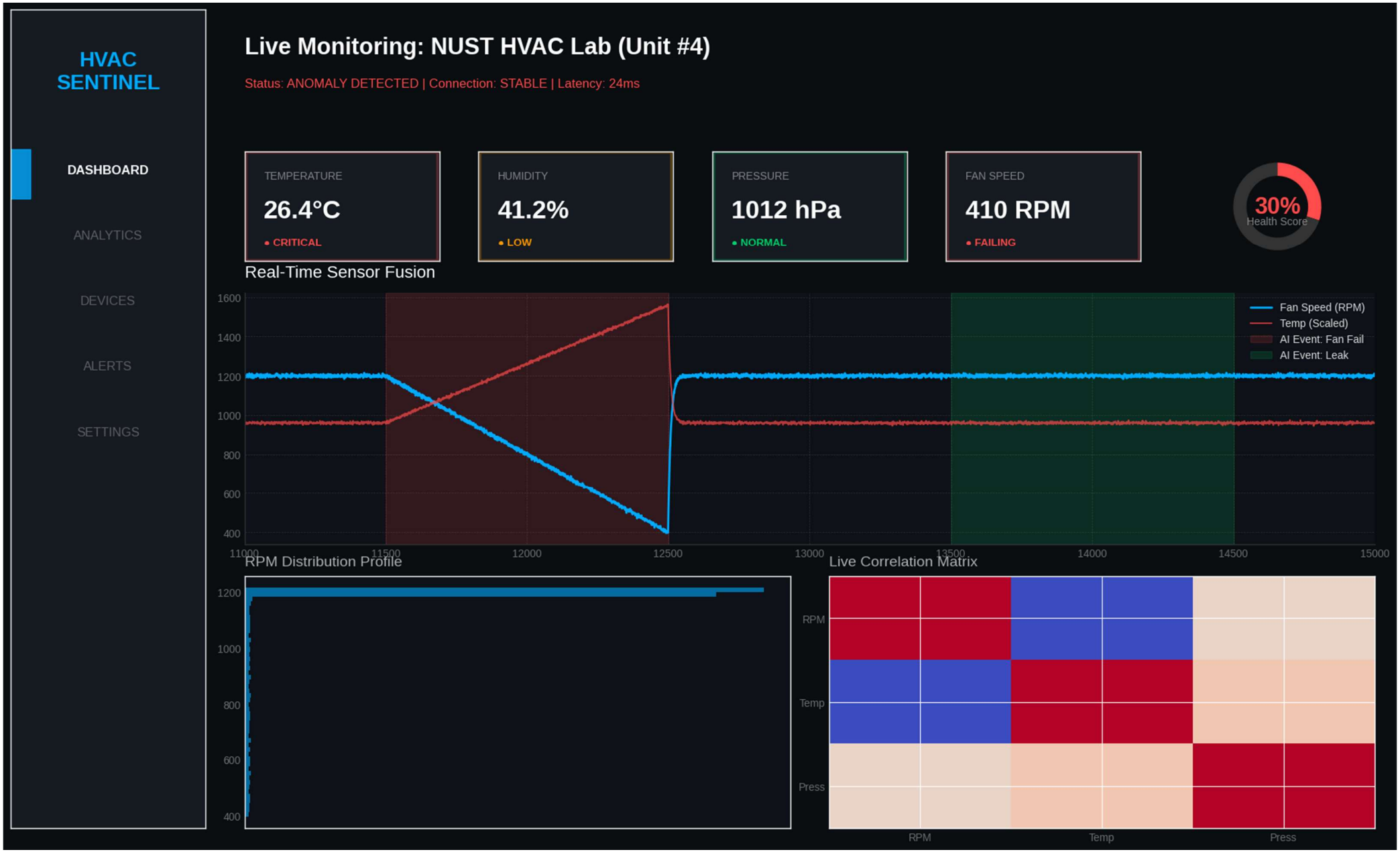
HVAC SENTINEL
DASHBOARD
ANALYTICS
DEVICES
ALERTS
SETTINGS
Live Monitoring: NUST HVAC Lab (Unit #4)
Status: ANOMALY DETECTED | Connection: STABLE | Latency: 24ms
TEMPERATURE
26.4°C
• CRITICAL
HUMIDITY
41.2%
• LOW
PRESSURE
1012 hPa
• NORMAL
FAN SPEED
410 RPM
• FAILING
30%
Health Score
Real-Time Sensor Fusion
1600
1400
1200
1000
800
600
400
11000
11500
12000
12500
13000
13500
14000
14500
15000
Fan Speed (RPM)
Temp (Scaled)
AI Event: Fan Fail
AI Event: Leak
RPM Distribution Profile
1200
1000
800
600
400
Live Correlation Matrix
RPM
Temp
Press
RPM
Temp
Press

HVAC SENTINEL

DASHBOARD

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System Performance Analytics

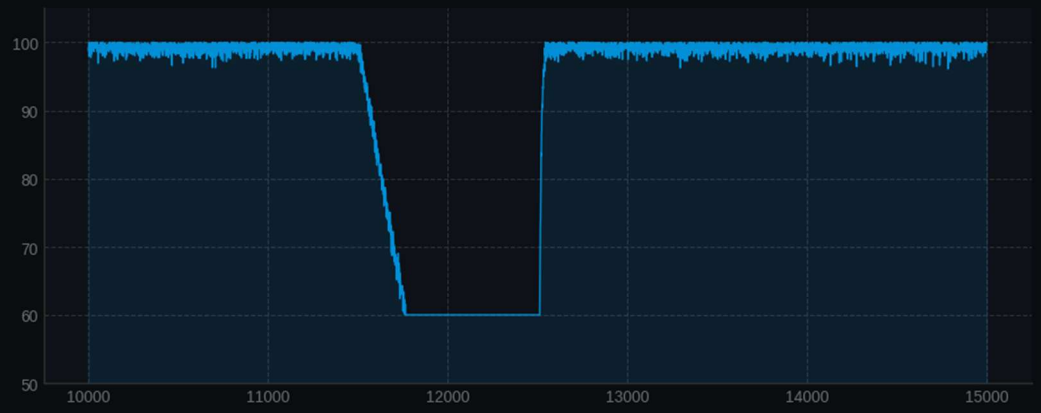
Reporting Period: Last 30 Days | AI Confidence: 98.4%

TOTAL ANOMALIES
2 Events
Detected

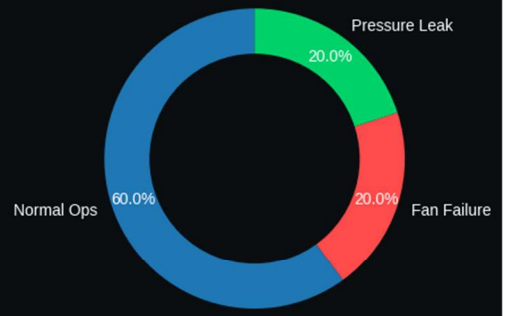
EST. ENERGY WASTE
14.2 kWh
+12% vs Avg

MEAN TIME TO RECOVER
45 Min
Excellent

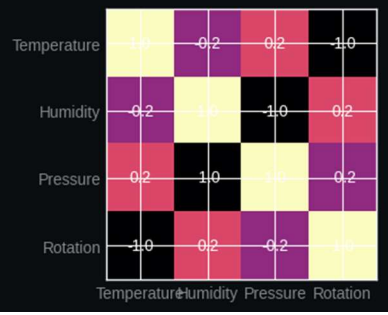
System Efficiency Score (%)



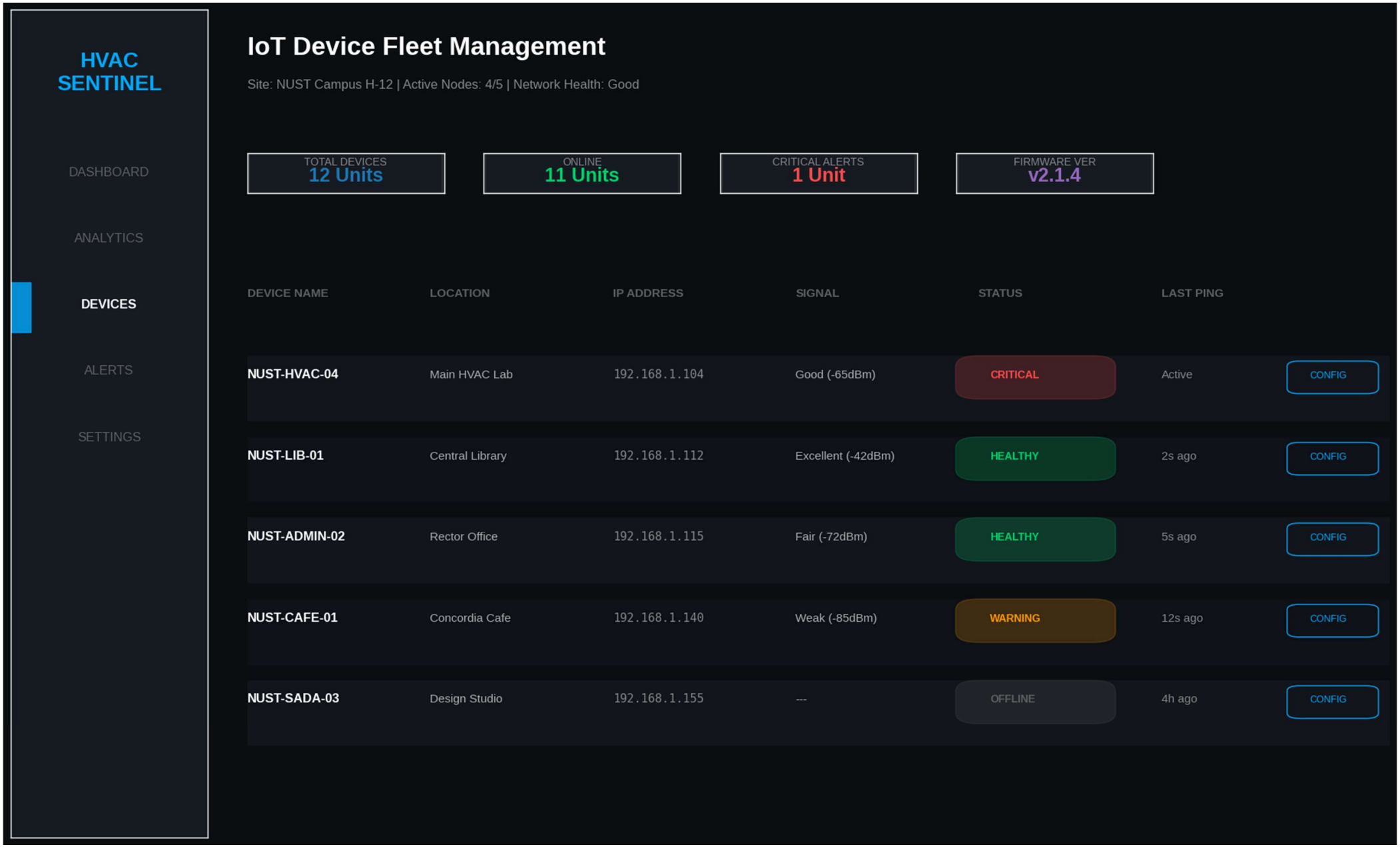
Anomaly Classification



Sensor Correlation Heatmap



Predicted Health Forecast


HVAC SENTINEL
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IoT Device Fleet Management
Site: NUST Campus H-12 | Active Nodes: 4/5 | Network Health: Good
TOTAL DEVICES 12 Units
ONLINE 11 Units
CRITICAL ALERTS 1 Unit
FIRMWARE VER v2.1.4
DEVICE NAME
LOCATION
IP ADDRESS
SIGNAL
STATUS
LAST PING
NUST-HVAC-04
Main HVAC Lab
192.168.1.104
Good (-65dBm)
CRITICAL
Active
CONFIG
NUST-LIB-01
Central Library
192.168.1.112
Excellent (-42dBm)
HEALTHY
2s ago
CONFIG
NUST-ADMIN-02
Rector Office
192.168.1.115
Fair (-72dBm)
HEALTHY
5s ago
CONFIG
NUST-CAFE-01
Concordia Cafe
192.168.1.140
Weak (-85dBm)
WARNING
12s ago
CONFIG
NUST-SADA-03
Design Studio
192.168.1.155

OFFLINE
4h ago
CONFIG

HVAC SENTINEL

DASHBOARD

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Incident Response Log

Priority: All | Status: Unresolved | Sort: Newest First

ACTIVE ALERTS	ACKNOWLEDGED	RESOLVED (24H)	AVG RESPONSE
3 Open	1 In Progress	5 Closed	12 Mins

Recent Incident Feed

10:42 AM	**Fan RPM drops below threshold (0 RPM)** ID: INC-2025-092 | Location: NUST-HVAC-04	CRITICAL
09:15 AM	**Abnormal Pressure Decay (-5%)** ID: INC-2025-091 | Location: NUST-HVAC-04	WARNING
08:30 AM	**System Startup Sequence Complete** ID: INC-2025-090 | Location: NUST-HVAC-04	INFO
Yesterday	**Routine Maintenance Check** ID: INC-2025-089 | Location: NUST-ADMIN-02	RESOLVED

Ticket Details

ID: INC-2025-092

AI Detection Model identified a sudden loss of rotation in Unit #4.

Root Cause Analysis suggests:
1. Motor Electrical Fault (85%)
2. Belt Slippage (15%)

Rec: Inspect motor windings.

[Location Map]

ASSIGN TECHNICIAN

MARK FALSE POSITIVE

HVAC SENTINEL

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System Configuration

Admin Panel | Version 2.1.4 (Build 8902) | Last Backup: 2 Hours Ago

AI Sensitivity Parameters

Anomaly Detection Threshold (MSE)

0.045

Sensor Sampling Rate (Hz)

10 Hz

Auto-Retrain Model on new data

Alert & Notification Channels

Email Recipients

admin@nust.edu.pk; maintenance@nust.edu.pk

Emergency SMS (Twilio/GSM)

+92 321 1234567

SEND TEST ALERT

Team Access Control

Ali Khan (You)
Super Admin

Sarah Ahmed
Maintenance Lead

NUST Lab Tech
Viewer Only

> System Event Log

```
[14:02:22] INFO: Model retraining initiated (v2.1.5)
[14:02:15] WARN: High latency detected on Node-04 (150ms)
[13:55:00] INFO: Daily backup completed successfully
[12:30:45] AUTH: Admin user logged in from 192.168.1.5
[10:42:10] CRIT: Anomaly Alert #92 sent to email gateway
```