Customer Journey Map

Electric Motor Temperature Prediction System

Scenario: Using the web application to predict motor rotor temperature and monitor safety levels.

User Type: Maintenance Engineer

1. Enter: Opens the web application to check motor temperature.
Goal: Help me quickly predict motor temperature without physical sensors.

2. Engage: Inputs torque, current, RPM, ambient and coolant temperature.
Positive: Easy interface, fast response.
Negative: Confusion about input ranges.
Opportunity: Add tooltips and real-time validation.

3. View Prediction: Sees predicted temperature with color safety indicator.
Green (<80°C), Yellow (80–95°C), Red (>95°C).
Goal: Help me quickly decide if motor is safe.
Opportunity: Show maintenance recommendations.

4. Exit: Option to download results as CSV.
Opportunity: Add historical tracking dashboard.

User Type: Data Scientist / ML Engineer

1. Retrain Model using training script.
2. View MAE and R^2 metrics.
Positive: Clear performance metrics.
Negative: Training time.
Opportunity: Hyperparameter tuning & model comparison dashboard.

User Type: System Administrator

1. Monitor /health endpoint.
2. Deploy to IBM Cloud (Port 5001).
3. Monitor uptime and response time.

Opportunity: Docker container & monitoring dashboard.

User Type: Quality Assurance Engineer

1. Test invalid inputs (negative, missing, non-numeric).
2. Verify 400 Bad Request for invalid data.
3. Validate prediction accuracy (MAE < 5°C).
Opportunity: Automated regression testing suite.