Project Flow

Electric motor temperature prediction
using machine
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1.Problem Identification

- Identify the problem of motor overheating
- Define the goal:
- Predict motor temperature using sensor data

2.Data Collection

- Collect electric motor sensor data
- Parameters may include:
- Voltage
- Current
- Speed
- Torque
- Ambient Temperature
- Motor Temperature (target

3.Data Understanding

- Study dataset structure
- Understand features and target variable
- Identify relationships between variables

4.Data Preprocessing

- Handle missing values
- Remove duplicate data
- Feature selection
- Data normalization / scaling

5.Exploratory Data Analysis (EDA)

- Analyze data patterns
- Identify correlations
- Visualize temperature variations
- Detect outliers

6.Model Selection

- Choose suitable regression algorithm:
- Linear Regression
- Decision Tree
- Random Forest

- Gradient Boosting

7.Model Training
- Split data into training and testing sets
- Train the model using training data

8.Model Evaluation
- Test model performance
- Evaluate using:
- MAE
- MSE
- R^2 Score

9. Model Optimization
- Tune hyperparameters
- Improve accuracy
- Reduce error

10.Model Saving
- Save trained model for future prediction

11.Deployment
- Create web application (Streamlit / Flask)
- Allow user to input motor parameters
- Display predicted temperature

12.Final Output
- GitHub Repository
- Deployment Link
- Project Report
- Demo Video