

Project Design Phase

Solution Architecture

Date	18 February 2026
Team ID	LTVIP2026TMIDS84143
Project Name	Electric Motor Temperature Prediction using Machine Learning
Maximum Marks	4 Marks

Solution Architecture:

The solution follows a 3-tier architecture consisting of a web-based frontend, Flask backend, and a machine learning model layer. The user enters motor sensor parameters through the web interface. The backend preprocesses the input using MinMaxScaler and loads the trained regression model to predict the permanent magnet temperature. The predicted result is then displayed to the user through the Flask UI. The model is trained offline using a dataset and stored as a .save file for deployment.

Solution Architecture Diagram:

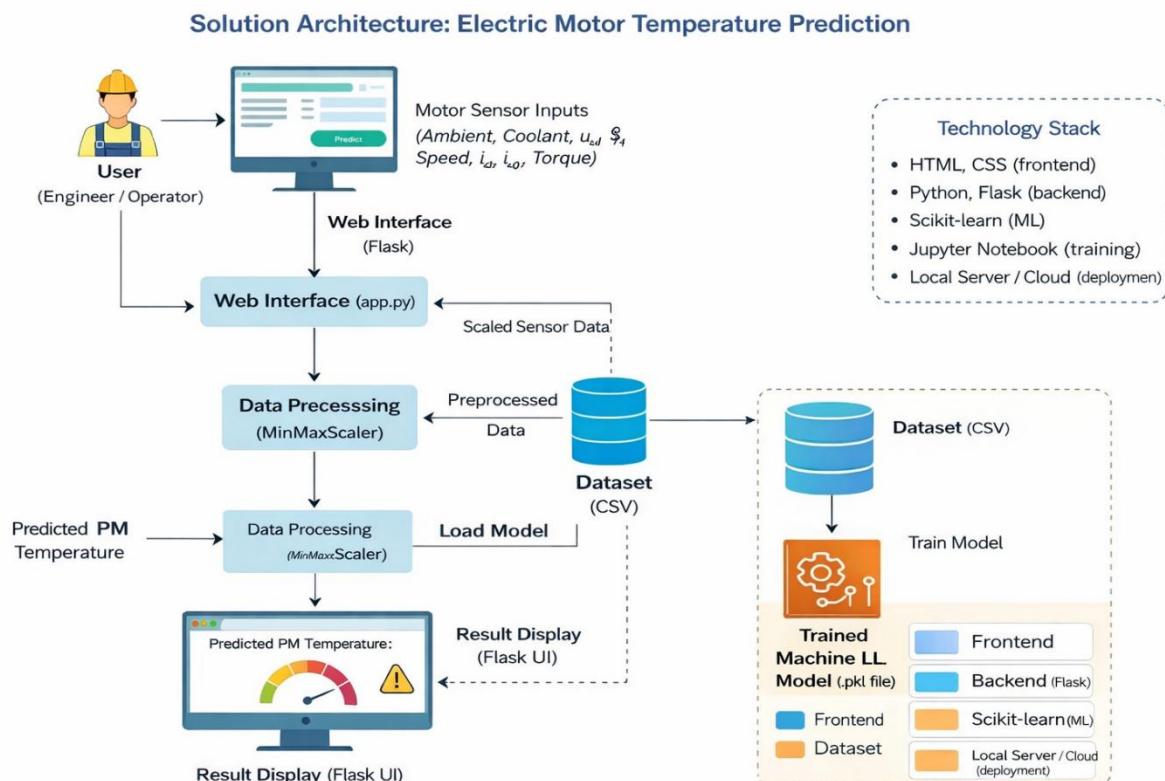


Figure 1: Architecture and data flow of the electric motor temperature prediction