Technology Stack

Electric Motor Temperature Prediction using Machine Learning

1. Programming Language

Python - Used for data processing, model development, and deployment.

2. Data Processing & Visualization

- NumPy - Numerical computations
- Pandas - Data cleaning and preprocessing
- Matplotlib - Data visualization
- Seaborn - Statistical data visualization

3. Machine Learning Libraries

- Scikit-learn - Regression models and evaluation metrics
- XGBoost - Gradient boosting algorithm
- TensorFlow / Keras - Deep learning models (optional)

4. Model Deployment

- Flask - Web API deployment
- FastAPI - High-performance API framework
- Streamlit - Quick ML web application deployment

5. Database (Optional)

- MySQL - Structured data storage

- MongoDB - NoSQL flexible storage

6. Development Environment

- Jupyter Notebook - Model experimentation
- VS Code - Full project development
- Google Colab - Cloud-based training

7. Version Control

Git and GitHub - Code version management and collaboration.

8. Hardware Requirements

Minimum 8GB RAM system. CPU-based training is sufficient for small datasets. GPU recommended for large datasets or deep learning models.