Predicting Soccer Match Outcomes Using Machine Learning

1. Introduction

This project aims to build a machine learning model to predict soccer match outcomes (win/draw/loss) based on team statistics.

2. Problem Statement

Predicting soccer match results is challenging due to many dynamic factors like player performance, team strategy, and random events.

3. Societal or Industrial Impact

The model can assist fans, analysts, and businesses (sports betting, marketing) to make smarter decisions.

4. Research Questions

- What team features (e.g., goals, player ratings) affect match results?
- Why is prediction important for sports analytics?
- How can ML models provide better forecasts compared to random guessing?

5. Contributions

- Design and train an ML model for match prediction.
- Analyze key factors that influence outcomes.
- Share findings and model publicly.

6. Dataset

Source: Kaggle - European Soccer Database (Secondary Data).

7. Methodology

- Data Cleaning and Preprocessing
- Feature Selection (team strength, goals scored, etc.)
- Model Training (Random Forest Classifier)
- Model Evaluation (Accuracy Score, Confusion Matrix)

8. Conclusion

This project will demonstrate how data science and machine learning can be applied to predict soccer match results, potentially improving decision-making in sports industries

Name: Thaing Parinha
Date: April 19, 2025
Course: Soccer Match Prediction Project
Instructor: K. Dinesh Kumar