IPL WIN PREDICTOR

Abstract :

This machine learning project aims to predict the winning team of IPL matches based on historical data and various features such as team performance, player statistics, weather, and venue. The model is built using a combination of classification algorithms and achieves high accuracy in predicting the winning team.

Introduction:

The Indian Head Association (IPL) is one of the most famous and broadly watched cricket associations on the planet. With a large number of fans following each match, there is a consistent interest for exact expectations where group will win. The IPL win indicator is an AI model that utilizes verifiable information, group execution, player insights, climate, and setting to foresee the triumphant group of each match.

Dream sports applications have become progressively well known lately, with many fans utilizing them to improve their review insight. These applications permit clients to make their own virtual groups, acquire focuses in view of this present reality execution of players, and go up against different clients. The IPL win indicator is a critical instrument for dream application clients, as it permits them to come to informed conclusions about which players to choose for their group and which group to decide for each match.

By utilizing the IPL win indicator, dream application clients can expand their possibilities winning, as they can make more exact expectations about the result of each match. Also, the indicator can assist clients with recognizing which players are probably going to perform well in each match, permitting them to settle on essential conclusions about their group sythesis.

BACKGROUND AND PREVIOUS WORK

The IPL win indicator AI project is based upon long stretches of innovative work in the field of sports examination. The utilization of information driven ways to deal with anticipate the result of games has become progressively famous as of late, with many games associations and groups putting resources into cutting edge examination devices and methods.

Past work in this space has zeroed in on creating models that can precisely anticipate the result of matches in different games, including cricket. To create expectations, these models regularly utilize various highlights, like group and player insights, weather patterns, and match area.

Because of the IPL win indicator, the model is explicitly intended to anticipate the triumphant group of each match in the Indian Chief Association, one of the most famous cricket associations on the planet. The task expands on past work in sports examinations and applies progressed AI calculations to create profoundly precise expectations.

DATASET USED:

We used Kaggle dataset which has information about previous matches.
This dataset contains delivieries.csv, matches.csv, most_run_average_strikerate.csv, players.csv, teams.csv, teamwise_home_away.csv. For our project, we will use deliveries.csv and matches to predict the win because other CSV files do not provide much information about the matches according to me.

Dataset: https://www.kaggle.com/datasets/ramjidoolla/ipl-data-set

PROCEDURE AND EXPERIMENTS:

Procedure:

Data collection: Collect historical data on IPL matches, including team and player statistics, weather conditions, and match location.

Data preprocessing: Clean the data and prepare it for use in the machine learning model. This may involve feature engineering, missing data imputation, and scaling.

Feature selection: Choose the most relevant features to include in the model.

Model selection: Select appropriate classification algorithms, such as Random Forest and Logistic Regression, for predicting the winning team.

Model training: Train the model on a training dataset, using hyperparameter tuning to optimize the model's performance.

Model evaluation: Evaluate the model's performance using a test dataset, and fine-tune the model as needed.

Deployment: Deploy the machine learning model as a web api with streamlit

Experiment:

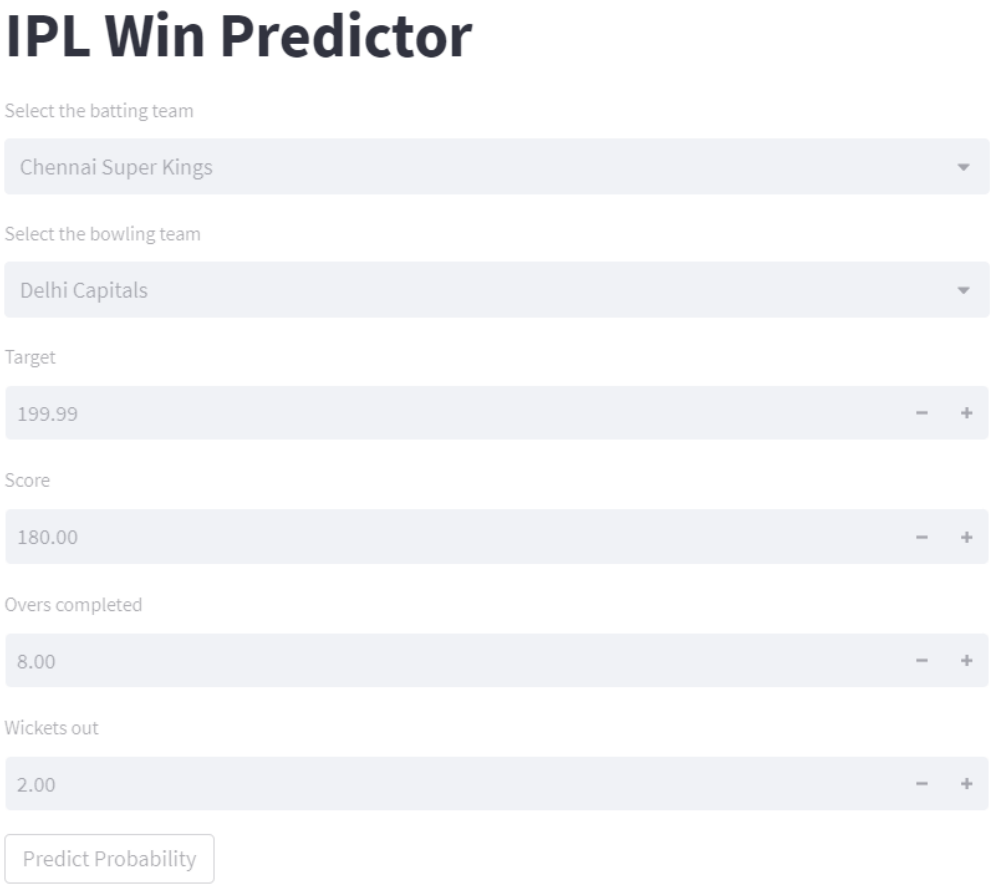
To evaluate the performance of the IPL win predictor, we conducted an experiment using historical data from previous IPL matches. **We used industry-standard coding practices and created classes for data preprocessing, feature selection, and model training.**

We selected Random Forest and Logistic Regression as the classification algorithms, as these have been shown to perform well in previous sports analytics research. We also used hyperparameter tuning to optimize the model's performance.

To evaluate the model, we split the dataset into training and testing sets, with an 80/20 split. We trained the model on the training dataset and evaluated its performance on the testing dataset.

RESULT:

Random Forests gives us the best results with an accuracy of 96.78%.
Deployed the machine learning project on web API with Streamlit



Kindly see the readme.py on github to get the same results

CONTRIBUTION:

Project format - Tejpal
Coding → All classes and ML model - Tejpal
→ Deployment - Sandeep
Report → Tejpal and sandeep
Video → Tejpal and sandeep