CrickXpert

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Abstract

This project utilizes machine learning to forecast cricket inning results, encompassing runs, wickets, boundaries, and event likelihoods. By uncovering patterns, it informs strategies, real-time analysis, and enriches sports understanding, spotlighting data science's role in elevating cricket comprehension and enjoyment.

1. Motivation

Merging our love for sports and technology, predicting cricket scores with machine learning captivates us. Unveiling data trends for match outcomes enriches our cricket passion. This project sharpens skills, pioneers innovation, and adds thrill to the game. Our shared ambition drives this journey. Hence, we aim to build models that can predict key metrics in a IPL cricket match.

2. Related works

2.1. The article centers on predicting IPL match winners via match stats, introducing data analysis and feature engineering for data processing.[1]

2.2. The article presents unbiased IPL match prediction till 2020, 24 hours prior, using algorithms analyzing team, player, weather, and historical data.[2]

3. Timeline

1. **Data Collection and Preprocessing (15th Aug – 22nd Aug):** Gather historical match data, clean and preprocess the dataset, handle missing values, and create relevant features.
2. **Exploratory Data Analysis (23th Aug – 10th Oct):** Explore the dataset to understand distributions, correlations, and patterns in the data.
3. **Feature Engineering (11th Oct – 31st Oct)**: Engineering features that capture relevant information, such as batting team, bowling team, runs, wickets and overs completed in that innings.
4. **Model Development (1st Nov – 25th Nov):** Build and train machine learning models for predicting runs,
   wickets, sixes/fours, and ball outcomes. Experimenting it with various algorithms like Decision Trees, SVM and Regression.
5. **Model Evaluation and Fine-Tuning (26th Nov – 4th Dec)**: Evaluate model performance using appropriate metrics, fine-tune hyperparameters, and conducting K-Fold cross-validation to ensure robustness.

4. Individual tasks

All team members will collaboratively contribute to all tasks outlined in the timeline. The distribution of work will be based on individual expertise and availability, ensuring a balanced division of responsibilities throughout the project.

5. Final Outcome

The project aims to produce a set of machine learning models that can predict key metrics in a cricket match, providing insights into the game's dynamics. Additionally, it will contribute to the larger field of sports analytics by showcasing the potential of AI in predicting cricket match outcomes. The final outcome is to have a well-documented, functional system that can make real-time predictions during live matches, potentially enhancing fan engagement and providing valuable insights for team management, broadcasters and bettors.

REFERENCES:

[1] https://www.analyticsvidhya.com/blog/2022/05/ipl-team-win-prediction-project-using-machine-learning/
[2] https://github.com/PtPrashantTripathi/IPL-2020-Prediction