**ICC-2023-Cricket-World-Cup-Predictor**

**Utilizing Random Forest Algorithm for Accurate 2023 Cricket World Cup Winner Prediction**

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The prediction of the 2023 Cricket World Cup winner through the Random Forest algorithm involves a sophisticated machine learning approach. This algorithm meticulously analyzes diverse historical and contemporary cricket data facets, encompassing team performance, player statistics, pitch conditions, and more. By comprehensively considering these factors, the Random Forest algorithm generates precise predictions regarding the tournament's ultimate victor. This method, leveraging the power of aggregated decision trees, significantly enhances the accuracy of forecasts. It serves as a valuable tool for cricket enthusiasts and analysts, enabling them to make well-informed projections about the potential champion of the 2023 Cricket World Cup.

Explore the associated Medium blog post for additional insights: [The Road to Glory: Predicting the ICC World Cup 2023 Champion](https://medium.com/@paulandrew1507/the-road-to-glory-predicting-the-icc-world-cup-2023-champion-dd44f9328bd2)

**Objectives**

1. Forecast the tournament's winner with a high degree of accuracy, leveraging both historical and current data.
2. Analyze diverse cricket-related data, including team performance and player statistics.
3. Identify and evaluate the most influential factors affecting a team's chances of winning, assisting teams and analysts in focusing on critical aspects.
4. Predict the outcomes of individual matches throughout the entire tournament.
5. Conduct simulations for upcoming matches, particularly the semi-finals and finals

**Data Sources**

Data for this prediction model was sourced from HowStat.com, encompassing ODI match results since the 2015 World Cup. Acknowledging potential limitations, particularly in the model's accuracy, I opted to exclude matches preceding the 2015 World Cup. Recent results were prioritized, given their perceived greater influence, with older data carrying less weight. Additional data files were obtained from the Cricbuzz website.

**Tools and Environment**

1. Google Colab
2. Numpy
3. Pandas
4. Seaborn
5. Matplotlib
6. Scikit-learn

**Model Evaluation**

Utilizing datasets featuring ICC rankings as of August 2023 and a fixture dataset outlining group stage matches, I conducted a comprehensive comparative analysis of Support Vector Machines, Naive Bayes, Random Forest, and K-Nearest Neighbors models.

Among these models, Random Forest emerged as the top performer, achieving a commendable training accuracy of 74.9% and a test accuracy of 67.3%.

Based on the model outcomes, the prediction favors India as the team with a higher likelihood of winning the World Cup.

**Reference**

[GitHub Repository - ICC 2019 World Cup Prediction](https://github.com/abhinavsagar/ICC-2019-WC-prediction)