

Indian Premier League (IPL) Score Prediction: Comparative Analysis of Machine Learning Models

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Abstract : In the realm of cricket, particularly within the context of the Indian Premier League (IPL), the ability to predict team scores accurately holds significant importance for both cricket enthusiasts and stakeholders alike. This paper presents a comprehensive study on IPL score prediction utilizing various machine learning algorithms, including Support Vector Machines (SVM), XGBoost, Multiple Regression, Linear Regression, K-nearest neighbors (KNN), and Random Forest. Through meticulous data preprocessing, feature engineering, and model selection, we aimed to develop a robust predictive framework capable of forecasting team scores with high precision. Our experimentation involved the analysis of historical IPL match data encompassing diverse match and player statistics. Leveraging this data, we employed state-of-the-art machine learning techniques to train and evaluate the performance of each model. Notably, Multiple Regression emerged as the top-performing algorithm, achieving an impressive accuracy of 77.19% and a precision of 54.05% (within a threshold of +/- 10 runs). This research contributes to the advancement of sports analytics by demonstrating the efficacy of machine learning in predicting IPL team scores. The findings underscore the potential of advanced predictive modeling techniques to provide valuable insights for cricket enthusiasts, team management, and betting agencies. Additionally, this study serves as a benchmark for future research endeavors aimed at enhancing the accuracy and interpretability of IPL score prediction models.

Keywords : indian premier league (IPL), cricket, score prediction, machine learning, support vector machines (SVM), xgboost, multiple regression, linear regression, k-nearest neighbors (KNN), random forest, sports analytics

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