



1. Introduction

In any game, the selection of a team's best players significantly impacts the overall team performance. This work aims to leverage machine learning techniques to predict player performance in T20 cricket matches, ultimately aiding in the selection of players for national teams. At this stage, this study only considers about the Batting and Bowling performance for making predictions in T20 format using Linear Regression and Random forest.

3. Dataset

•	Kaggle:
	www.kaggle.com/dat

www.kaggle.com/datasets/bhuvaneshprasad/all-t20-internationalsdataset-2005-to-2023

Batting Features	Bowling Features
Match ID	Match ID
Innings	Innings
Team	Team
Batsman	Opposition
Runs	Bowler ID
Fours	Overs
Balls	Balls
Sixers	Maidens
Strike Rate	Conceded
isOut	Wickets
WicketType	Economy
Feilders	Dots
Bowlers	Fours
	Sixers
	wides
	No Balls

Table 1: Features of the Dataset

5.Results

a) For Batting,

Runs are the most influential feature contributing to PCA-1 when applying PCA to the entire batting dataset. After correlating with runs, the plot appears as follows:



Step 1: Pre-processing

respective column.

Step 2: Feature Selection

predict the target variable.

b) For Bowling,



Figure 2: Correlated Features with Runs

Predicting Players' Performance in T20 Cricket Matches Using Machine Learning Approaches

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Figure 3: Correlated Features with Conceded

6. Overall Results

Table 2: Overall results							
Costion	Algorithms	Training Dataset		Testing Dataset			
Section	Algorithms	RSE MSE RSE	MSE				
Datting	Linear Regression	0.9752	6.2218	0.9551	6.6149		
Datting	Random Forest	0.9873	0.9965	0.9941	1.5066		
Douding	Linear Regression	0.9015	10.9456	0.8898	9.8721		
DOWING	Random Forest	0.9456	0.0054	0.9098	5.1478		

7. Discussion

This study utilises machine learning techniques to predict cricket performance metrics for both batting and bowling. By analysing key statistics such as balls faced, fours, sixes, and economy rate, we developed predictive models using Linear Regression and Random Forest Regressor. The models achieved high accuracy, with Random Forest performing particularly well. These findings underscore the potential of machine learning in sports analytics, offering valuable insights for player performance evaluation and strategy

8 Conclusion		
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ctors that influence player performance, such as conditions or the nature of the wicket, could not be in this study due to data unavailability. the right players for each match plays a crucial role in a uccess. Accurate predictions of how many runs a is likely to score or the number of runs a bowler might	1. 2. 3. 4.	 Jhanwar, M. Matches: A T Manivannan feature enco <i>Conference</i> of Wickramasin ODI cricket g Wickramasin systematic re
can aid team management in selecting the best players natch.	5.	Passi, K., & internationa
udy, we modelled batting and bowling datasets based rs' statistics. Among the models tested, Random Forest as the most accurate for predicting batting and bowling nce, achieving a 98% accuracy score. Previous work [5]	6.	Information Hasanika, D. (2021). Data IEEE 16th In (ICIIS) (pp. 92
ved Random Forest performing best, with accuracies of	7.	Bajaj, A. (20

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Figure 6: Actual vs Predicted for Conceded

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