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Predicting a top rank batsman in an ODI match, using the first few balls faced: A case study

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Predicting the success of a top-rank batsman will play a crucial role in the decision-making process in the game of cricket, on the field as well as off the field. This research is carried out with the purpose of achieving the aforementioned task. The proposed procedure explicitly followed to rank one, two and three players in the world by August 2021. Therefore, the results cannot be generalized to a wider set of players. Among several models tried out, Decision Tree (DT) model with a training ratio of 0.9 showed the highest accuracy of 72% in predicting whether the batsman will be successful, i.e., scoring fifty or more runs on a given day. Probabilistic Neural Network (PNN) and Support Vector Machine (SVM) models with a similar test ratio resulted in an accuracy of around 65% for the three players, Rohit Sharma, Babar Azam and Virat Kohli. PNN recorded a maximum accuracy of 64.2% when predicting the performance of Rohit Sharma and the SVM model recorded a maximum accuracy of 59% when predicting the success of Babar Azam. The aforementioned accuracy of the DT model was achieved using the first five balls for Virat Kohli and Rohit Sharma and the first seven balls for Babar Azam. The findings of the study can be used to make accurate decisions in the game of cricket.

Keywords: Cricket, Decision tree, Probabilistic Neural Network, Support Vector Machine