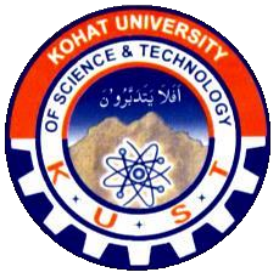
Leveraging Deep Neural Network for Selecting Players of Pakistan Super League on the Root of their Enactment Prediction.

By

Qazi Muzzamil Shah



Institute of Computing

Kohat University of Science & Technology, Kohat-26000

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Submitted in partial fulfillment of the requirements for the degree of

MS in Computer Science

By

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Kohat University of Science and Technology, Kohat-26000

Khyber Pakhtunkhwa, Pakistan 2023

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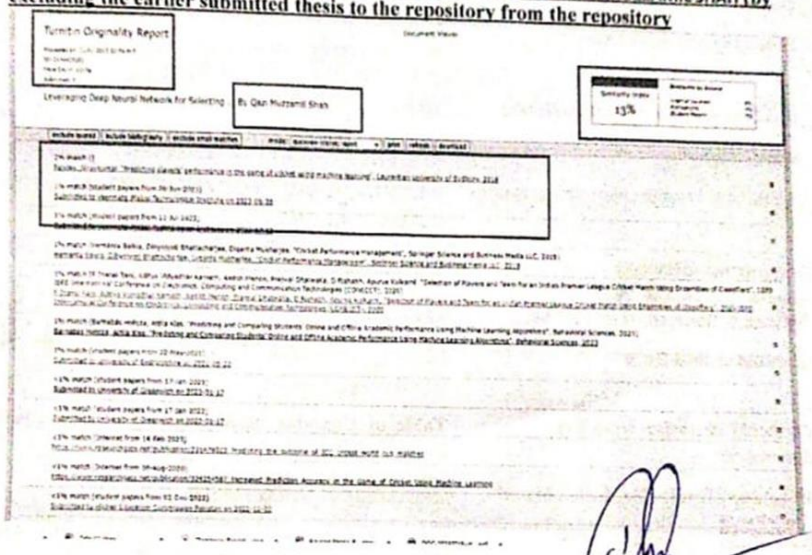

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Qazi Muzzamil Shah

DEDICATED

TO

"The Teacher of the Universe (PBUH)" &

TO

MY LOVING PARENTS

The one and only reason of what I became today.

Thanks for your great support and continuous care.

And I am honoured to have you as my parents.

Without you none of my success would be possible.

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ABSTRACT

Due to the play's briefness and rapid pace, Twenty20 is the adored format of cricket sport. Pakistan Super League (PSL) is one of the most well-known professional T20 cricket leagues. It was created to improve Pakistan cricket by evaluating emerging talent. However, choosing the greatest players for PSL teams is a crucial step that affects the game's outcomes. Players' performances differ according to a variety of conditions, including the opponent team, the atmosphere, their present form, etc. To prevent selection processes from being biased due to human nature, using a machine learning method, this study seeks to identify and rank the best fifteen players on the PSL squad based on their bowling and batting statistics over the previous five seasons. For this purpose, we used Naïve Bayes, Random Forest, Support Vector Machine, and Decision Tree (classifier) are used to create a prediction model using the individual batting and bowling feature sets. The confusion matrix conclusions have been plotted in terms of precision accuracy, recall, and "f1score" based on a comparison of the algorithms used. To choose both pitchers and batsmen based on runs scored (in terms of wickets taken), Random Forest proved to be the most reliable classifier for both datasets, predicting batsman runs scored by 90.74% and bowler wickets taken by 92.25%, respectively. This study's conclusions also show that bowling performance lags behind batting performance.

Table of Contents

Chapter 1.....**13**
1. Introduction 13
1.1. Formats in cricket ……..……..01
2. 1.2. Importance of domestic league in Pakistan ……..01
3. 1.3. Pakistan Super League……...02
4. 1.4. Motivation…….02
5. 1.5. Problem Statement…….....03
6. 1.6. Aim of Research……03
7. 1.7. Objectives ……....03
8. 1.8. Contributions ……..…..04
9. 1.9. Thesis Organization……..…..04
Chapter 2……..…...**05**
1. 2.1. Back Ground Study ……..……..05
2. 2.2. Literature Review ……..……...06
Chapter 3……..……**13**
3.1. Methodology...…….…13
3.2. Introduction ……..……..….13
3.3. Data and Preprocessing……...….14
3.3.1. Data Collection……....….14
3.3.2. Player Statistics……....15
3.3.3. Batting Measures……..….16
3.3.4. Bowling Measures……..……...…17
3.4. Pre-Processing of Dataset…….…17
3.4.1. Weight Combination…….…18
3.5. Additional Features……..……21
3.5.1. Evaluation of Common Measures……...……...23
3.5.2. Further Input Parameters……...23
3.5.3. Data Cleaning……24
3.5.4. Removing Unwanted Columns...…….....24
3.5.5. Placing Unique Attributes……...……..24
3.5.6. One Hot Encoding……24
3.5.7. Data Transformation……..24
3.6. Feature Selection……..25
Chapter 4.....29
4.1. Result and Discussion…….…29
4.2 Machine Learning Algorithms……29
4.2.1 ML & DL……29
4.2.2 Random Forest……29
4.2.3 Naïve bayes……..30
4.2.4 Decision Tree……30

4.3 EVALUATION PARAMETERS……31
4.3.1. Precision…..……..…….……31
4.3.2. Accuracy…….……...…31
4.3.3. Recall……..…….....…31
4.3.4. F1 Score…….…..….32
4.4. Random Forest……..……..…..32
4.5. Support Vector Machine……..……....33
4.6. Decision Tree…….…..34
4.7. Naïve Bayes…….36
4.8. Summary…….……37
4.9. Batting Analysis……..…….....42
4.10. Batting Index…….....43
4.11. Bowling Analysis……44
4.12 Bowling Index..…….....45
Chapter 5.....**.46**
5.1. Conclusion and Future work……..……..46
5.2. Conclusion…….…47
5.3. Limitation……..……....47
5.4. Future Work……..…….....47
Chapter 6.....**48**
6.1. References……..…….....50

List of Tables

Table 1 Summary of Related Work……12

Table 2 Levels of relative importance for the goals and features…… 19

Table 3 Similarity-based evaluation of the features…….……..…….. 20

Table 4 Batting and Bowling Attributes…….……26

Table 5 Run prediction accuracy with Random Forest…….……... 32

Table 6 Run prediction evaluation of Random Forest with 10% testing set, 90% training set……32

Table 7 Wicket prediction accuracy with Random Forest…….…….. 32

Table 8 Evaluation of Random Forest for predicting Wickets using 10% testing data and 90% training data……..……... 33

Table 9 Run prediction accuracy with SVM…….……..…… 33

Table 10 Performance of SVM for predicting Wickets using 10% testing data and 90% training data…… 33

Table 11 Demonstrate that Support Vector Machine prediction accuracy for Wickets with various training. and test set size……... 34

Table 12 Evaluation of SVM for Predicting Wickets with 10% Test Data and 90% Training Data……... 34

Table 13 Run prediction accuracy using a Decision tree…….…… 34

Table 14 Decision tree performances for predicting runs using 10% testing data and 70% training data…….. 35

Table 15 Indicates that Decision Tree accuracy for predicting Wickets with various training and test set size.. 35

Table 16 Evaluation of Decision Tree for Predicting Wickets with 10% Test Data and 90% Training Data……35

Table 17 Run prediction accuracy with Naive Bayes…….……..…….. 36

Table 18 Performance of Nave Bayes for predicting wickets using 10% testing data and 90% train data…….. 36

Table 19 Naive Bayes wickets prediction accuracy for different training and test set sizes…… 36

Table 20 Nave Bayes' performance in predicting wickets using 10% test data and 90% train data…… 37

Table 21 Summary…….37

Table 22 performance evaluation of run prediction algorithms……

Table 23 Efficiency of such classifiers used to predict wickets…….…….. 41

List of Figures

Figure 1 Graph of the D/L model…… 7

Figure 2 Proposed methodology……..... 13

Figure 3 Batsmen and Bowler's dataset…… 15

Figure 4 Descriptive analysis of top batsmen in PSL…….26

Figure 5 Top Batsman Based on Feature Score……29

Figure 6 A qualitative investigation of the PSL's Top bowlers…….30

Figure 7 Accuracy for top batsmen using Machine learning Algorithm……...38

Figure 8 Accuracy for top bowlers using Machine learning Algorithm……..41

Figure 9 Machine Learning Evaluation of Recall Precision and F1 Score for Top PSL bowlers.....42

Figure 10 Top Batsman Based on Feature Score…… 43

Figure 11 Batting index of top batsmen……..44

Figure 12 Top Bowlers Based on Feature Score……. 44

Figure 13 Bowling index of PSL players…… 45

CHAPTER 1

INTRODUCTION

1.1 Formats in Cricket

Cricket is played in three different formats at the international level, for example, T20 (Twenty20), one-day, and test matches. Each side has one opportunity to bat and one option to bowl during the two innings in these formats. A total of fifty over's can be bowled in one session during one-day international matches. The newest and shortest format of cricket, T20, only allows for 20 overs. The five-day tournament (known as a test) came first in the cricket matches before the one-day game was added. In 2003, the England and Wales Cricket Board (ECB) introduced a format known as Twenty20. (Or T20 cricket). Since then, five world cups and numerous leagues have been played. The Australian BBL Big Bash T20 League and the IPL (Indian premier league) are considered the first successful cricket leagues, respectively. Supporters from one country cheered for a cricket player from another. The potential to compete with other international athletes and evolve from being a national hero to an international celebrity has now been provided. There are numerous well-known and popular T20 leagues, including the (BPL) Bangladesh Premier League, (BBL) Big Bash League, (IPL) Indian Premier League, (PSL) Pakistan Super League, and (CPL) Caribbean Premier League.[1] [2]

1.2 Importance of domestic league in Pakistan

Cricket is the most widely played sport in Pakistan, where the majority of the population is sports-loving for its Field Hockey quash players and cricket greater than 190 million people living there. The Sri Lankan cricket team was the target of extremists on March 3, 2009. The sad incident effectively ended Pakistan's participation in international cricket. As a result of the attack, the International Cricket Council stripped Pakistan of its ability to host the 2011 World Cup. All games were played in the United Arab Emirates until the championship game in 2017, which served as the final test to determine whether top-level cricket could return to Pakistan, due to safety concerns resulting from a terrorist attack in Lahore, Pakistan, in 2009. The Pakistan Super League (PSL) is a significant step in reviving cricket in Pakistan. It is an effective effort to revive international cricket and gives young, skilled players a chance to develop.[3] [5]