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What Affects Winning in the UFC: The Dominance of Khabib Nurmagomedov

To examine what affects winning in the UFC, we utilized a data set with information on the types of strikes landed by both fighters during every UFC fight from the inception of the league in 1993 until 2021, as well as which fighter won and the type of win (ie. Knockout vs. Decision). We assigned each win to either the red corner with a 1 or the blue corner with a 0.

We started by utilizing decision trees to predict the winner of a fight based on our data. The most important factor in this model was whether or not the blue corner (usually the underdog) scored a knockdown. After this, the number of ground strikes landed by both fighters was the next most important predictor. The last group of predictors were striking attempts.

We next moved on to logistic regression, again predicting whether the blue or red fighter would win a given fight. We utilized a 70/30 data split. Knockdowns, submission attempts, and significant strikes for both fighters proved to be the most important predictors. Our model had an accuracy of 88.3% on our testing data. The red fighter won 67.5% of the time overall in our data set, so our model not only vastly outperforms choosing a fighter at random, but also outperforms simply picking the favored fighter.

Khabib Nurmagomedov is considered one of the greatest mixed martial artists of all time. As a result, we wanted to see how he stacked up against average lightweight fighters and examine how his fighting and fight style were different to his peers. We found that he had significantly more time spent on the ground at 54% leading to his submission of his opponents 38% of the time. When compared to an average lightweight they only spent 14% of their time on the ground and the submission rate among lightweights is only 23.3% of fights. . Not only did Nurmagomedov spend more time on the ground but he struck the head 86% of the time when other lightweights only struck the head 61.3% . We came to the conclusion that Nurmagomedov's fighting style is more distinct than the common lightweight due to his emphasis on trying to submit his opponents on the ground and in the process trying to inflict as much damage into the head area. We also ran a logistic regression model using only lightweight fights, getting an accuracy of 87%, and found submission attempts and time in control to be much more important than for the overall UFC landscape, both of which are areas in which Khabib excels.