Predicting the Success of NFL Wide Receivers Based on their College Careers Using Classification Models

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**Problem Statement**

The National Football League (NFL) and the National Collegiate Athletic Association (NCAA) are the most popular American football leagues in the USA, a sport that is deeply ingrained in the country’s culture and history but is relatively unknown abroad. We will refer to American football as football for the sake of brevity.

Unlike other professional sports leagues, the NFL does not have a minor league where players can be developed and trained until deemed ready to compete at the highest level. College football fills this role as the second highest tier of football competition in the US. The overwhelming majority of NFL players compete in the NCAA Division I before being selected in the NFL draft or being signed as undrafted free agent. However, only around 1.6% of NCAA college football players are given the opportunity to play in the NFL[1]. Based on a study of 1996-2016 draft picks, only about 8% of drafted players make a difference in the NFL beyond replacement value, and around 30% see significant play time or make contributions to their teams[2].

In this project, I will be focusing on the wide receiver position on the offense that specializes in catching the ball. I am interested in predicting whether an NFL wide receiver will have a productive season based on data from their college careers. First, I will create a threshold on what constitutes a successful season for a WR in the NFL. Then I will implement and compare seven classification models which are Naïve Bayes, Logistic Regression, Support Vector Machine, Neural Networks, KNN, Decision Tree and Random Forests to see whether they can accurately make predictions about the success of a wide receiver in the NFL.

**Data Source**

Methodology

Evaluation and Final Results

1. <https://operations.nfl.com/journey-to-the-nfl/nfl-development-pipeline/college-advisory-committee/>
2. <https://www.dailynorseman.com/2022/4/26/23042105/nfl-draft-pick-bust-rate-remains-very-high>