NFL Fantasy Football: Sleeper Analysis

Tony Nguyen[1], Andrew Poole[2], Tucker Wheaton[3], and Trey Winters[4]

I. INTRODUCTION

A. Objective

Our objective for this study is to take data from successful sleepers, players that are playing in the NFL and are projected to bring little to no points at the beginning of the season but by the end are one of the highest ranked players in the NFL league. We want to analyze sleepers and find common data between them and see if that data will help us project future sleepers of the league.

B. Motivation

We got the motivation behind this project from all of us participating in an NFL Fantasy Football league this year. In a fantasy league you and your friends are playing as the general managers of a virtual NFL football team. The league kicks off by having a mock draft where each general manager acquires players to be on their team, in a set order. As the NFL season carries on each general manager sets their starting lineup to accumulate points from touchdowns, field goals, interceptions, pass completions, and a whole lot more. The person with the highest amount of points at the end of the season wins the league and generally the leagues are very competitive and are competing for money. As the season progresses you can play the waiver wire which is where you can auction on players that have not been picked up by any other teams. In the waiver wire you will find players that were projected to make little to no points but by the end of the season they are one of the top ranked players in the NFL league, these are called sleepers. There are multiple sleepers every NFL season and are the key to winning the league.

II. DATASETS USED

The Data that will be obtained will be from a Python API by ESPN, This API allows access to their Fantasy football database. ESPN's API provides us with lots of data to work from such as scoreboard, player information, teams, etc. The one that we are most interested in is boxscore, which holds the values of the weekly points earned by the individual players. We will also look at the other data points to help provide context and insight when analyzing the "sleeper" player's score to determine any trends found on why they ended up doing so well.

Our first dataset will be to find players with low score projections and have performed higher than their projected scores. Once that is determined, looking at the overall score, scoreboard, will be the next dataset used to see if the overall team's performance help influenced the performance of the sleeper player. From this point on, other relative player statistics such as height, weight, and position will be gathered that can positively or negatively affect the player's projection.

All of the datasets gathered will then be graphed and analyzed to spot any trends among the sleeper players that did well. Graphs such as player's physical attributes will be graphed each other, where the X and Y axis will be player name and the individual attributes(height, weight) respectively.

III. RESPONSIBILITIES

Tucker Wheaton: Data Analyst, Data scraper for quarterbacks, Lead presenter

Andrew Poole: Data analyst, Data scraper for wide receivers, Graph/Table creator

Tony Nguyen: Data Analyst, Data scraper for running backs, Lead presenter

Trey Winters: Data Analyst, Data scraper for defense, Presentation creator

IV. TIMELINE OF DELIVERABLE(S)

September 30th: Group meeting to setup Python, Pymongo, and ESPN Fantasy Football API. This day will be used to familiarize ourselves with the API and accessing data. Each member is tasked to find some NFL statistics from a sleeper pick in the NFL draft and find similarities in their position, weight, height, or any data that reflects direct correlations with previous sleeper picks playing successfully in the NFL.

October 21st: Team members meet again to display some data they found. We will use this day to finish up some in class assignments and implement some code that utilizes each of each other's findings while using the ESPN Fantasy Football API. By then we should have a better understanding of the goal of our implementation.

November 9th: Team members will meet again to discuss better methods of data scraping. By this time we would like to have the majority of our data gathered for presentation. This meeting will be used to finalize that we all have the data ready for analysis.

November 20th: By this time we would like to have our graphs and tables completed using the data we found from the ESPN Fantasy Football API. Our group will meet and compile this data into graphs of a similar format.

December 3rd: Our group plans to be completed with our study by this time. We hope to have compiled graphs and tables showing data that correlates with NFL sleeper picks.

We hope to use this data to predict if 5th or 6th round picks will be successful in the NFL.

V. Expected Outcome

By the end of this project we would like to have a set of data that would help us project and find future sleepers of the NFL. We would like to be able to predict what makes sleepers stand out from other NFL players and what are their common similarities. After finding similarities and differences we would like to put our data to the test and project a future sleeper.

As a group, we hope to obtain better knowledge of data analysis and data archaeology using Python. With the help of PyMongo's documention, we plan to learn more about data storage and analysis.

As for what we plan to complete for the semester, we will follow our timeline to the best of our ability. But much of our progress requires us to immediately get started using Python and many other libraries and API's. This can be a very large learning curve but we still believe that we will be able to complete this study before December 3rd. We are motivated to learn more about Fantasy Football and at the same time learn more about data analysis and algorithms using Python.