

Enhancing Fantasy Football Team Analysis with the "Zest Calculator"

Introduction:

Fantasy football has emerged as a captivating fusion of sports enthusiasm and strategic decision-making, captivating millions of participants worldwide. The crux of fantasy football lies in crafting a well-balanced team, which is a formidable amalgamation of top-performing players across various positions, tailored to exploit the intricacies of the sport. While the fundamental goal remains simple – accruing the most points within the framework of a league – the intricacies of player selection, drafting strategy, and team composition demand thorough analytical insight. In this context, the "Zest Calculator" emerges as a pioneering tool poised to revolutionize the landscape of fantasy football team analysis.

The "Zest Calculator" is a comprehensive analytical framework that introduces a multidimensional approach to evaluating the value and efficacy of fantasy football teams. By meticulously amalgamating factors such as draft strategy, consensus comparison, player value assessment, and roster construction, the "Zest Calculator" transcends the boundaries of conventional analysis, offering a more nuanced and informed perspective on team performance. This tool holds immense potential to empower both novice and seasoned fantasy football managers in their quest for success, leveraging data-driven insights to elevate their decision-making prowess.

Draft Strategy Assessment:

The cornerstone of fantasy football begins with the drafting phase, where managers must formulate a strategy that capitalizes on player rankings, positional scarcity, and individual performance forecasts. The "Zest Calculator" delves deep into the realm of draft strategy by integrating historical data, expert consensus, and predictive modeling. By aligning these elements, the tool provides a panoramic view of potential draft outcomes and their subsequent impact on team performance, enabling managers to make informed decisions that resonate with their strategic inclinations.

Consensus Comparison:

Gauging a player's potential in a fantasy football context often involves juxtaposing personal insights with expert opinions. The "Zest Calculator" harnesses this synergy by juxtaposing a team's composition against the prevailing consensus on player rankings. This comparative analysis identifies deviations, enabling managers to uncover hidden gems or overvalued assets. By advocating for an objective assessment grounded in collective wisdom, the tool offers a balanced perspective that transcends individual biases.

Player Value Assessment:

The heart of the "Zest Calculator" resides in its ability to dissect player value with a precision that befits the modern era of data analytics. Beyond conventional performance metrics, the tool integrates advanced statistical models, historical trends, and contextual factors to project a player's true potential. Consequently, managers are endowed with an enhanced understanding of player performance expectations, enabling them to construct a roster replete with players poised to thrive under diverse game scenarios.

Roster Construction Insight:

The synergy between individual player prowess and collective team composition defines the essence of fantasy football success. The "Zest Calculator" furnishes managers with a holistic vision of team synergy, recommending optimal roster constructions that optimize positional strengths, mitigate weaknesses, and harness the potential for interplay among players. This strategic advantage accentuates a team's resilience across the rigors of the fantasy football season.

In conclusion, the "Zest Calculator" transcends the boundaries of traditional fantasy football analysis, ushering in a new era of data-driven decision-making. By amalgamating draft strategy assessment, consensus comparison, player value assessment, and roster construction insight, this tool empowers fantasy football managers to sculpt teams that stand poised to dominate their leagues. The "Zest Calculator" represents a paradigm shift, emphasizing a multidimensional approach that champions informed, strategic, and insightful team construction, fostering a new age of competitive excellence in the realm of fantasy football.



Methods:

The "Zest Calculator" operates at the nexus of data analysis, predictive modeling, and strategic insight, providing a holistic approach to evaluating fantasy football teams. Central to its functionality is the synthesis of player value assessment, draft strategy analysis, and consensus comparison, which culminate in the calculation of both the "true value" and "zest value" for each selected player.

Player Value Assessment:

The foundation of the "Zest Calculator" lies in its intricate player value assessment methodology. To determine the "true value" of a player, historical data and models such as FantasyPros Rankings are employed. These models consider past performances, positional scarcity, and situational dynamics to estimate a player's anticipated point contribution.

The "zest value," on the other hand, constitutes a proprietary metric that encapsulates nuanced insights beyond conventional statistics. While the exact mechanics of the "zest value" remain a closely guarded secret, it encompasses factors like injury history, team dynamics, potential breakout scenarios, and statistical outliers, all aimed at capturing hidden gems and potential game-changers that might not be evident from traditional metrics alone.

Draft Strategy Analysis:

The efficacy of a fantasy football team is inherently intertwined with the draft strategy employed by its manager. The "Zest Calculator" meticulously analyzes a manager's draft strategy by simulating multiple draft scenarios, accounting for different player availability, positional needs, and historical trends. These simulations are then integrated with player value assessments to predict a team's performance under varying draft circumstances.

Consensus Comparison:

To enhance objectivity, the "Zest Calculator" leverages consensus rankings from expert sources in the field of fantasy football. This comparison gauges how a manager's team aligns with the broader perception of player value. Deviations between a player's "true value" and their consensus ranking prompt managers to critically evaluate their selections, potentially leading to adjustments that maximize team potential.

Calculation of Total Score:

The crux of the "Zest Calculator" lies in the calculation of a team's total score, which is outlined below:

$$\sum_{n=1}^{18} (\lambda) \sqrt{(\zeta) (p - z) + (p - t)}$$

Where:

p = pick used on the player

t = “true value” of the player

z = “zest value” of the player

ζ = pick weight

λ = adjustment factor

Example: Adam's Ideal Team

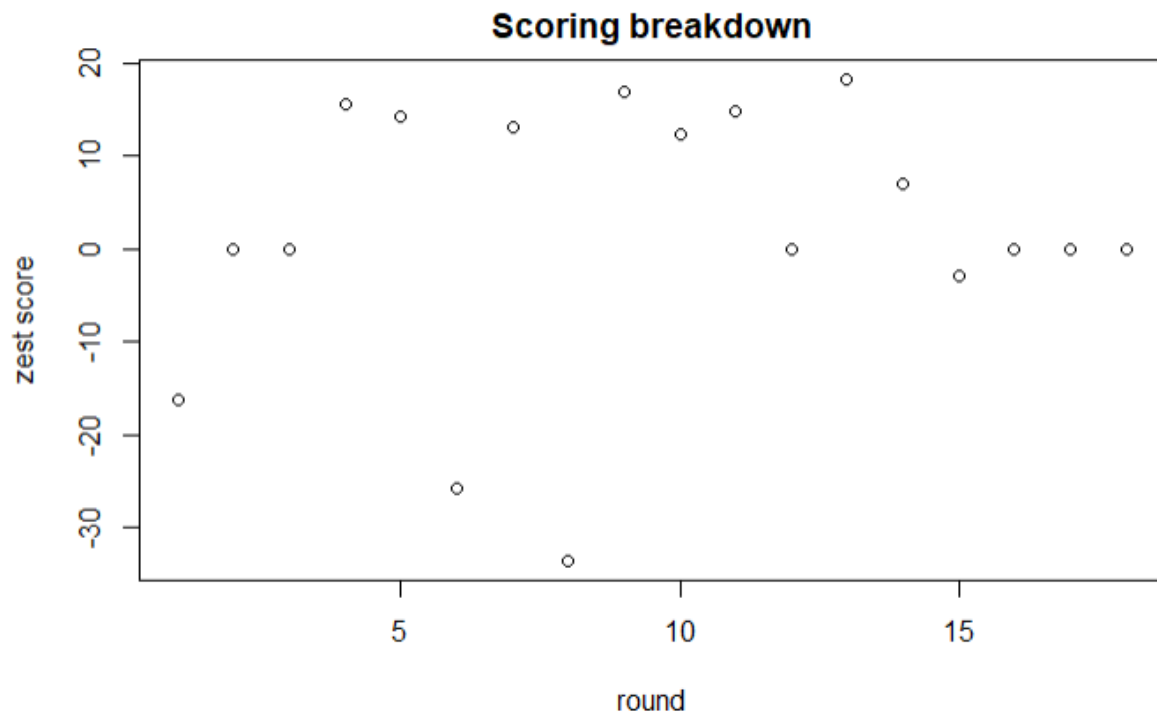
We will now run the model on a team we would expect Adam to pick. Adam has the 9th pick, unfortunate for him, so we will base our example picks off of that.

After running a bootstrapped simulation of Adam's decision making, we've returned this team:

Saquon Barkley, Ceedee Lamb, Travis Etienne, Calvin Ridley, Jerry Jeudy, Rashad Penny, Jahan Dotson, David Njoku, Jaxon Smith-Njigba, Elijah Moore, Aaron Rodgers, Ezequiel Elliot, Zach Charbonnet, Anthony Richardson, Tyler Bass, Patriots D/ST, DJ Chark, Joan Duggan

Now after running the model, we can visualize the following results:

```
> calc_score(9, "Saquon Barkley")
[1] -16.17096
> calc_score(16, "Ceedee Lamb")
[1] 0
> calc_score(33, "Travis Etienne")
[1] 0
> calc_score(40, "Calvin Ridley")
[1] 15.47256
> calc_score(57, "Jerry Jeudy")
[1] 14.28286
> calc_score(64, "Rashaad Penny")
[1] -25.73713
> calc_score(81, "Jahan Dotson")
[1] 13.14534
> calc_score(88, "David Njoku")
[1] -33.50075
> calc_score(105, "Jaxon Smith-Njigba")
[1] 16.94403
> calc_score(112, "Elijah Moore")
[1] 12.23111
> calc_score(129, "Aaron Rodgers")
[1] 14.84924
> calc_score(136, "Ezequiel Elliot")
[1] 0
> calc_score(153, "Zach Charbonnet")
[1] 18.25377
> calc_score(160, "Anthony Richardson")
[1] 7.028513
> calc_score(177, "Tyler Bass")
[1] -2.84605
> calc_score(194, "New England Patriots")
[1] 0
> calc_score(201, "D.J. Chark")
[1] 0
> calc_score(218, "Joan Duggan")
[1] 0
< |
```



Notice that Adam's worst pick was David Njoku in the 8th round (what an idiot), while his best pick was Zach Charbonnet in the 13th (I'll see it when I believe it). We can find Adam's total team score with the following command:

```

> total_team_score(9, c("Saquon Barkley", "CeDee Lamb", "Travis Etienne", "Calvin Ridley", "Jerry Jeudy", "Rashaad Penny", "Jahan Dotson", "David Njoku", "Jaxon Smith-Njigba", "Elijah Moore", "Aaron Rodgers", "Ezekiel Elliot", "Zach Charbonnet", "Anthony Richardson", "Tyler Bass", "New England Patriots", "DJ Chark", "Joan Duggan"))
[1] "Saquon Barkley"

```

The result of this returns approximately 33.95, indicating that Adam would be thrilled if this was his actual team. However, he shouldn't count his chickens before the eggs hatch.

HOW THIS APPLIES TO YOU:

Everyone wants to get their hands on the latest thing in big tech. Luckily, the zest calculator will be open source (see code base below) . Due to new innovations such as the Newman Google Sheet [™], it will be very easy to calculate your zest score and find even more applications with these dat viz tools. We will be releasing a few examples on analysis post draft. Please relay any questions to our work email:

Jduggan5@nd.edu

Code Base

Nick Gembs

8/12/2023

```
getwd()

## [1] "C:/Users/Nick/Downloads"

setwd("C:/Users/Nick/Downloads")
getwd()

## [1] "C:/Users/Nick/Downloads"

G_Rank <- read.csv("C:/Users/Nick/Downloads/fruity_and_zesty.csv")
T_Rank <- read.csv("C:/Users/Nick/Downloads/FantasyPros_2023_Draft_ALL_Rankin
gs (1).csv")
weights <- read.csv("C:/Users/Nick/Downloads/pick_weights.csv")

all_info_holder = merge(x = G_Rank, y = T_Rank, by.x = "Name", by.y = "PLAYER.
NAME")
subset = all_info_holder[,c("Name", "Overall.Rank", "RK")]

T_Rank

calc_score <- function (pick, name) {

  tryCatch({
    vals = subset[subset$Name == name, c(2,3)]
    weight = weights[pick, "Value"]
    i = 1
    if (weight * ((pick - vals[1, 1]) + (pick - vals[1, 2])) < 0) {
      i = -1
    }
    return(i * sqrt(abs(weight * ((pick - vals[1, 1]) + (pick - vals[1, 2])))))
  }, error = function(err) {
    return(0)
  })

}

total_team_score <- function(pick, players){
  gap1 = 2*(12-pick)+1
  gap2 = 2*(pick-1)+1
  picks = pick
  for (i in 2:18){
    if (i%%2 == 0){
      picks = c(picks, picks[i-1]+gap1)
    } else {
```



```

    picks = c(picks, picks[i-1]+gap2)
  }
}
p = 1
score = 0
for (i in picks){
  print (players[p])
  print (calc_score(i, players[p]))
  score = score + calc_score(i, players[p])
  p = p + 1
}
return(score)
}

total_team_score_list <- function(pick, players){
  gap1 = 2*(12-pick)+1
  gap2 = 2*(pick-1)+1
  picks = pick
  for (i in 2:18){
    if (i%%2 == 0){
      picks = c(picks, picks[i-1]+gap1)
    } else {
      picks = c(picks, picks[i-1]+gap2)
    }
  }
  p = 1
  score = c()
  for (i in picks){
    print (players[p])
    print (calc_score(i, players[p]))
    score = c(score, calc_score(i, players[p]))
    p = p + 1
  }
  return(score)
}

calc_score(9, "Saquon Barkley")
## [1] -16.17096

calc_score(16, "Ceedee Lamb")
## [1] 0

calc_score(33, "Travis Etienne")
## [1] 0

calc_score(40, "Calvin Ridley")
## [1] 15.47256

```

```
calc_score(57, "Jerry Jeudy")
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