

Fantasy Football Draft Computer

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Executive Summary:

I am using what I know and can expand on spreadsheets to create a data-driven Fantasy Football draft strategy for my family's Fantasy Football league.

Introduction:

I recently joined my family's fantasy football league. Last year I joined the same league, but I was unable to draft my team due to a schedule conflict. This year I have the same problem, and I wanted to give my auto draft a data-driven strategy.

I decided to create a data project to build me a viable draft list so the auto-draft could be as effective as possible. There are two phases to this project.

Phase one is to create the draft order before draft day on August 29th. The second phase will track the progress of the resulting draft through the fantasy season and compare the result with a control team. Since the project started on August 22nd, I had limited time to complete phase one, but it was useful to see how I could work with a deadline like this.

Data Collection:

My initial methodology was to use last year's NFL player statistics with their average draft rankings. I assumed this information would be fairly easy to gather, but it turned out to be a bit of both easy and more difficult data to capture.

All of the data was sourced from sports and fantasy-related websites. In some cases, I copy and paste the data into Google Sheets directly; in other cases, I web scrape the data using a simple HTML code to copy the data from tables embedded in the webpage.

My league is hosted on Yahoo Sports, and our scoring system is set to the “half PPR” scoring system. The league has 12 teams, and the roster is set to: QB, WR, WR, RB, RB, TE, W/R/T, K, DEF, BN, BN, BN, BN, BN, BN, IR, IR.

All the sources of data contain statistics and measurements based on past and potential performance in the upcoming NFL season. These statistics and measurements are then combined and extrapolated into categories to compute a final rating.

These categories are weighted to:

Player Ranking: 25%

VORP: 25%

Risk Score: 25%

Player Flex: 25%

Player rank is based on a composite score between the ESPN overall rankings and the betiq.teamrankings.com total point projections for the top 300 players based on the half-PPR fantasy scoring system. I ended up not using the ESPN ranking in the computation of the ranking number and just using the potential points ranking based on the betIQ data, but I did compare the ranking I got with the ESPN list to make sure there wasn't too much deviation.

Value added over replacement (VORP) is valuable for assessing a player's relative value compared to replacement-level players at their position. This was a metric that was new to me. I had to read more about it to understand its significance. But it seems to be almost as important as potential points.

The risk score mainly has to do with the potential of a player missing playing time for various reasons. I decided to use a website for the injury metric, [draftsharks.com](https://www.draftsharks.com), and composite that against the player's age to complete my risk metric.

Player flex score gives a score based on the utility of a player starting in multiple positions in a fantasy week lineup. More weight is given to WRs, RBs, and TEs since there are six out of nine spots in the lineup, and any one of them can be an additional RB, WR, or TE. This could mean a lot of points either way, depending on which players you draft and are available.

My sources for the data are the following websites:

ESPN <https://fantasy.espn.com/football/players/projections> (Scraped)

BetIQ <https://betiq.teamrankings.com/fantasy-football/projections/half-ppr/> (Scraped)

Draft Sharks Injury Predictor: <https://www.draftsharks.com/injury-predictor/> (Scraped)

Google.com: (I googled a lot of player data directly from front page results, like age and position.)

Data Cleaning and Processing:

My data was gathered from a combination of web site tables and manually entering information from Google searches.

The “Player Ranking” consisted of the ESPN Fantasy Rankings by sports writer Tristan H. Cockcroft. This was scraped from the first table on the web page. The main ranking score was calculated by using BetIQ's rankings of potential point totals from the list. This data was also scraped from a table on the points totals page. After the data was saved in a spreadsheet, it needed to be copied into a new list for sorting purposes.

The data for the VORP score was copied from the player data sheet that was scraped from the BetIQ data sheet. I created another table for the lowest potential score by position and cross-referenced the two lists to make a score for each player. Lastly, I sorted the list by the final VORP score, from highest to lowest.

The flex score was done manually by giving weights to each player by position. Using a list of players from a master list, I assigned a score weight to each based on their position and value to a fantasy starting roster.

The risk score was mostly taken from the Draft Sharks website. They have a complete score for the probability of injury. (cite?) I used this list and cross-referenced it with the player's age. These two scores together made up the final risk score.

Combining the player lists was the most difficult, as players names were spelled differently and some disagreements on age, position, and injury status made it necessary to sort the list many times. I finally had to create codes for each player to solve many of the tabulation errors. I used vlookup, regenextract, and substitute in Google Sheets to help sort my player name data. I also created new “clean” versions of the list to make the final tabulations easier to sort.

Because some of the data was not directly available, such as player age, I had to Google it and manually enter it for the whole set. I would prefer not to have to do that and rather use some tool for the extraction of this data.

Exploratory Data Analysis (EDA):

After completing the tabulation of the results, I ended up with a draft board. Yahoo Sports allows you to enter a player by ranking for the auto draft feature, so it was an easily transferable thing to go from my spread sheet to the draft list.

After the draft was completed, my team:

				Fantasy				Passing				Rushing				Receiving				Ret		Misc	Fum
Edit	Offense			Forecast	Bye	Fan Pts	% Start	Yds	TD	Int	Att*	Yds	TD	Rec	Yds	TD	Tgt*	TD	2PT	Lost			
QB	<div><div></div><div></div></div>	Josh Allen	Buf - QB Mon 5:15 pm @NYJ	<div><div></div><div></div></div>	<div><div></div><div></div></div>	13	409.52	97%	4283	35	14	124	762	7	0	0	0	0	0	2	0		
WR	<div><div></div><div></div></div>	Amon-Ra St. Brown	Det - WR Thu 5:20 pm @KC	<div><div></div><div></div></div>	<div><div></div><div></div></div>	9	214.60	97%	0	0	0	9	95	0	106	1161	6	146	0	0	0		
WR	<div><div></div><div></div></div>	Chris Olave	NO - WR Sun 10:00 am vs Ten	<div><div></div><div></div></div>	<div><div></div><div></div></div>	11	162.20	95%	0	0	0	0	0	0	72	1042	4	119	0	1	0		
RB	<div><div></div><div></div></div>	Breece Hall	NYJ - RB Mon 5:15 pm vs Buf	<div><div></div><div></div></div>	<div><div></div><div></div></div>	7	105.60	60%	0	0	0	80	463	4	19	218	1	31	0	0	0		
RB	<div><div></div><div></div></div>	AJ Dillon	GB - RB Sun 1:25 pm @Chi	<div><div></div><div></div></div>	<div><div></div><div></div></div>	6	153.60	15%	0	0	0	186	770	7	28	206	0	43	0	0	0		
TE	<div><div></div><div></div></div>	Kyle Pitts	Atl - TE Sun 10:00 am vs Car	<div><div></div><div></div></div>	<div><div></div><div></div></div>	11	61.60	90%	0	0	0	0	0	0	28	356	2	59	0	0	0		
W/R/T	<div><div></div><div></div></div>	DK Metcalf	Sea - WR Sun 1:25 pm vs LAR	<div><div></div><div></div></div>	<div><div></div><div></div></div>	5	181.80	94%	0	0	0	0	0	0	90	1048	6	141	0	0	0		
BN	<div><div></div><div></div></div>	Jonathan Taylor	Ind - RB Sun 10:00 am vs Jax	<div><div></div><div></div></div>	<div><div></div><div></div></div>	11	132.40	29%	0	0	0	192	861	4	28	143	0	40	0	0	0		
BN	<div><div></div><div></div></div>	Tua Tagovailoa	Mia - QB Sun 1:25 pm @LAC	<div><div></div><div></div></div>	<div><div></div><div></div></div>	10	238.92	43%	3548	25	8	23	70	0	0	0	0	0	0	0	0		
BN	<div><div></div><div></div></div>	Jordan Addison	Min - WR Sun 10:00 am vs TB	<div><div></div><div></div></div>	<div><div></div><div></div></div>	13	0.00	15%	-	-	-	-	-	-	-	-	-	-	-	-	-		
BN	<div><div></div><div></div></div>	Sam LaPorta	Det - TE Thu 5:20 pm @KC	<div><div></div><div></div></div>	<div><div></div><div></div></div>	9	0.00	10%	-	-	-	-	-	-	-	-	-	-	-	-	-		
BN	<div><div></div><div></div></div>	Devin Singletary	Hou - RB Sun 10:00 am @Bal	<div><div></div><div></div></div>	<div><div></div><div></div></div>	7	158.90	1%	0	0	0	177	819	5	38	280	1	52	0	0	0		
				Fantasy				Field Goals Made				PAT											
Edit	Kickers			Bye	Fan Pts	% Start	0-19	20-29	30-39	40-49	50+	Made											
K	<div><div></div><div></div></div>	Jason Myers	Sea - K Sun 1:25 pm vs LAR	<div><div></div><div></div></div>	5	159.00	52%	0	9	15	4	6	41										
BN	<div><div></div><div></div></div>	Jason Sanders	Mia - K Sun 1:25 pm @LAC	<div><div></div><div></div></div>	10	135.00	64%	0	5	7	12	2	41										
				Fantasy				Tackles		Turnovers		TD	Misc	Ret									
Edit	Defense/Special Teams			Bye	Fan Pts	% Start	Pts vs.*	Sack	Safe	Int	Fum Rec	TD	Blk Kick	TD									
DEF	<div><div></div><div></div></div>	Dallas	Dal - DEF Sun 5:20 pm @NYG	<div><div></div><div></div></div>	7	170.00	94%	324	54	0	16	17	3	2	0								

Shortly after the draft, I made one transaction:

Dropped WR Trylon Burkes, added RB Devin Singletary, and needed another running back since Johnathan Taylor was on the PUP list for the first few games.

My draft was graded by Yahoo at A-, and I am projected to finish third in the league by record, so initially the selections seem to be generally favorable.

“Jason’s Argonauts.”

League Draft Grades

JES3 Steelers	A ⁺
OC Quakes	A ⁺
Jason's Argonauts	A ⁻
ARS Wildcats	B
The A Rays	C ⁺
Low End Theory	D ⁺
The More You Joe	D ⁺
AJ C's Amazing Team	D
Mother of Drag-routes	D
Sudbury Sour Patch Kids	F

Before I start tracking the progress of this drafted team, I felt it necessary to add a control to use to help compare the results.

I used <https://www.fantasypros.com/> mock draft system to create the “mock.” team. I used the same draft board I made for my league, but I drafted in real time against CPU players in a mock 10-team draft.

The mock draft result:

Mock Draft Simulator

🔍

Analyze

↶ Undo

↷ Restart

🏈

Your draft is complete!

➤

Suggestions

Cheat Sheets

Draft Board

Pick Predictor

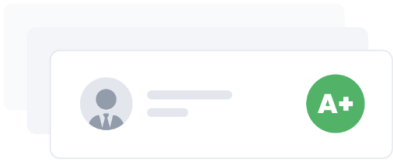
By round

By roster

Bryce Young At Heart	Levis La Vida Loca	YOUR TEAM	Dyami Vice	CeeDee Burner	Harbaughcaly pse Now	I Pittsy The Fool	Better Call Hall	For Whom D. Bell Tolls	Storm Hoopers
Patrick Mahomes II QB - KC	Trevor Lawrence QB - JAC	Joe Burrow QB - CIN	Deshaun Watson QB - CLE	Daniel Jones QB - NYG	Josh Allen QB - BUF	Justin Herbert QB - LAC	Justin Fields QB - CHI	Jalen Hurts QB - PHI	Lamar Jackson QB - BAL
Kenneth Walker III RB - SEA	Austin Ekeler RB - LAC	Christian McCaffrey RB - SF	Josh Jacobs RB - LV	Nick Chubb RB - CLE	Jahmyr Gibbs RB - DET	Travis Etienne Jr. RB - JAC	Saquon Barkley RB - NYG	Derrick Henry RB - TEN	Bijan Robinson RB - ATL
Dalvin Cook RB - NYJ	Rhamondre Stevenson RB - NE	Joe Mixon RB - CIN	Dameon Pierce RB - HOU	Tony Pollard RB - DAL	Javonte Williams RB - DEN	Cam Akers RB - LAR	Aaron Jones RB - GB	Breece Hall RB - NYJ	Najee Harris RB - PIT
Justin Jefferson WR - MIN	Tee Higgins WR - CIN	DeAndre Hopkins WR - TEN	Ja'Marr Chase WR - CIN	Garrett Wilson WR - NYJ	Tyreek Hill WR - MIA	Cooper Kupp WR - LAR	CeeDee Lamb WR - DAL	DeVonta Smith WR - PHI	Stefon Diggs WR - BUF
Davante Adams WR - LV	Terry McLaurin WR - WAS	Deebo Samuel WR - SF	Christian Watson WR - GB	Calvin Ridley WR - JAC	A.J. Brown WR - PHI	Amon-Ra St. Brown WR - DET	Keenan Allen WR - LAC	Amari Cooper WR - CLE	Jaylen Waddle WR - MIA
George Kittle TE - SF	Mark Andrews TE - BAL	Dallas Goedert TE - PHI	T.J. Hockenson TE - MIN	Darren Waller TE - NYG	Dalton Kincaid TE - BUF	Pat Freiermuth TE - PIT	David Njoku TE - CLE	Travis Kelce TE - KC	Evan Engram TE - JAC
Chris Olave WR - NO	Alexander Mattison RB - MIN	James Conner RB - ARI	Jonathan Taylor RB - IND	Rachaad White RB - TB	DK Metcalf WR - SEA	DJ Moore WR - CHI	Miles Sanders RB - CAR	Tyler Lockett WR - SEA	J.K. Dobbins RB - PIT
Philadelphia Eagles DST	Baltimore Ravens DST	Dallas Cowboys DST	Tampa Bay Buccaneers DST	Denver Broncos DST	New England Patriots DST	Pittsburgh Steelers DST	New York Jets DST	San Francisco 49ers DST	Buffalo Bills DST
Tyler Bass K - BUF	Harrison Butker K - KC	Justin Tucker K - BAL	Brett Maher K - DEN	Evan McPherson K - CIN	Jason Myers K - SEA	Daniel Carlson K - LV	Younghoe Koo K - ATL	Cameron Dicker K - LAC	Jake Elliott K - PHI
AJ Dillon RB - GB	Drake London WR - ATL	David Montgomery RB - DET	Brandin Cooks WR - DAL	Chris Godwin WR - TB	James Cook RB - BUF	Diontae Johnson WR - PIT	Alvin Kamara RB - NO	Brian Robinson Jr. RB - WAS	D'Andre Swift RB - PHI
Khalil Herbert RB - CHI	Marquise Brown WR - ARI	Kyle Pitts TE - ATL	Antonio Gibson RB - WAS	George Pickens WR - PIT	Mike Williams WR - LAC	Jahan Dotson WR - WAS	Isiah Pacheco RB - KC	Jamaal Williams RB - NO	Jerry Jeudy WR - DEN
Rashaad Penny RB - PHI	Zach Charbonnet RB - SEA	Jimmy Garoppolo QB - LV	Sky Moore WR - KC	Samaje Perine RB - DEN	Christian Kirk WR - JAC	Brandon Aiyuk WR - SF	Jordan Addison WR - MIN	Michael Thomas WR - NO	Mike Evans WR - TB
Odell Beckham WR - BAL	Treyton Burks WR - TEN	Elijah Moore WR - CLE	De'Von Achane RB - MIA	Romeo Doubs WR - GB	Jaxon Smith-Njiguel WR - SEA	Gabe Davis WR - BUF	Courtland Sutton WR - DEN	Damien Harris RB - BUF	Michael Pittman WR - IND
Ezekiel Elliott RB - NE	Dak Prescott QB - DAL	Jakobi Meyers WR - LV	Tua Tagovailoa QB - MIA	Aaron Rodgers QB - NYJ	Juju Smith-Schuster WR - NE	Zay Flowers WR - BAL	Nico Collins WR - HOU	Michael Gallup WR - DAL	Kadarius Toney WR - KC
Dalton Schultz TE - HOU	Tank Bigsby RB - JAC	Rashod Bateman WR - BAL	Quentin Johnston WR - LAC	D'Onta Foreman RB - CHI	Jaylen Warren RB - PIT	Roschon Johnson RB - CHI	Tyler Higbee TE - LAR	Kenneth Gainwell RB - PHI	Elijah Mitchell RB - SF

The resulting Mock team:

Your Draft is Done!



See Your Draft Grade!

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MOCK DRAFT AGAIN

Your Team

QB	Joe Burrow	CIN
RB	Christian McCaffr...	SF
RB	Joe Mixon	CIN
WR	DeAndre Hopkins	TEN
WR	Deebo Samuel	SF
TE	Dallas Goedert	PHI
FLX	James Conner	ARI
DST	Dallas Cowboys	DAL
K	Justin Tucker	BAL
BN	David Montgome...	DET
BN	Kyle Pitts	ATL
BN	Jimmy Garoppolo	LV
BN	Elijah Moore	CLE
BN	Jakobi Meyers	LV
BN	Rashod Bateman	BAL

I will add a section on the data sheet for tracking fantasy points.

At the conclusion of the fantasy year, I will do a final report on the results of both teams.