

Finding Breakout Fantasy Players

Spotting a breakout player before your league mates can make or break your season. It's the difference between drafting the next Justin Jefferson in the late rounds and watching him lead another team to victory. When it comes to this decision process, this project aims to move beyond gut feelings and into the realm of data-driven predictions, focusing on identifying NFL players who are being heavily underrated based on their average draft positions (ADP) in fantasy football leagues. To achieve this, we're leveraging comprehensive datasets sourced from [ProFootballReference](#) and [FantasyPros](#), focusing on Points-Per-Reception (PPR) scoring.

First, I will start with a crucial yet often overlooked step: data preparation. By examining advanced metrics for wide receivers, running backs, tight ends, and quarterbacks, I aim to uncover the hidden gems poised for breakout seasons. This analysis isn't just about who performed well last season, but about identifying the players whose advanced metrics suggest they're on the verge of a breakout. Whether it's a running back seeing increased red zone usage or a wide receiver whose target share is trending upwards, these insights could be the key to fantasy football glory.

Data

For this project, I relied on two of the most comprehensive football databases available: ProFootballReference and FantasyPros. These treasure troves of information form the backbone of my analysis, providing everything from fantasy points to advanced passing, receiving, and rushing metrics, as well as crucial redzone and ADP data.

By combining these rich data sources, I'm aiming to create a time machine for fantasy football, with the goal of spotting the next breakout star before they explode onto the scene. To do this, I'm not just looking at last year's stats, but also thousands of data points spanning from 2018 to 2023. By using SQL, this approach allows me to spot trends that might be invisible when looking at a single season in isolation.

One of the more challenging aspects I experienced when cleaning the data was the inconsistency in player names. Is it "Odell Beckham Jr." or just "Odell Beckham"? What about players with apostrophes in their names like Le'Veon Bell? To fix this, I created a script that meticulously cleans and standardizes these names, ensuring that when we're tracking a player's progress over time, we're actually following the same player throughout their career.

To ensure realistic results, I am not looking at each dataset alone, as this is very one-dimensional. Instead, by combining rushing and receiving stats for running backs, or passing and rushing for quarterbacks, I'm painting a complete picture of a player's contributions. This is crucial because fantasy football doesn't care if a touchdown comes through the air or on the ground - points are points. It's also become more important in the modern NFL as players in each position are being asked to do more and more, such as the increase in mobile QBs.

Finally, after a few days of cleaning data, combining tables, eliminating columns, renaming players, and filtering inconsistencies, I had several large datasets that will allow me to begin my analysis.

Wide Receivers (WR)

In my analysis of wide receivers, I focused on identifying potential breakout candidates using just the advanced receiving metrics. I figured that wide receivers rely mostly on yardage rather than touchdowns. This is even more important in PPR as receptions become one of the biggest sources of a wide receiver's points. I integrated these statistics with ADP from ProFootballReference and PPR fantasy points from FantasyPros, concentrating on key metrics that resulted from comparing the averages of players who were determined to be breakout players (players who drastically outperformed their ADP) vs the normal averages. This led me to determine that Receptions per Broken Tackle (rec_Rec/Br) and Yards After Catch per Reception (rec_YAC/R) as positive indicators of a breakout year, and Drop Percentage (rec_Drop%) and Interceptions when Targeted (rec_Int) as negative indicators.

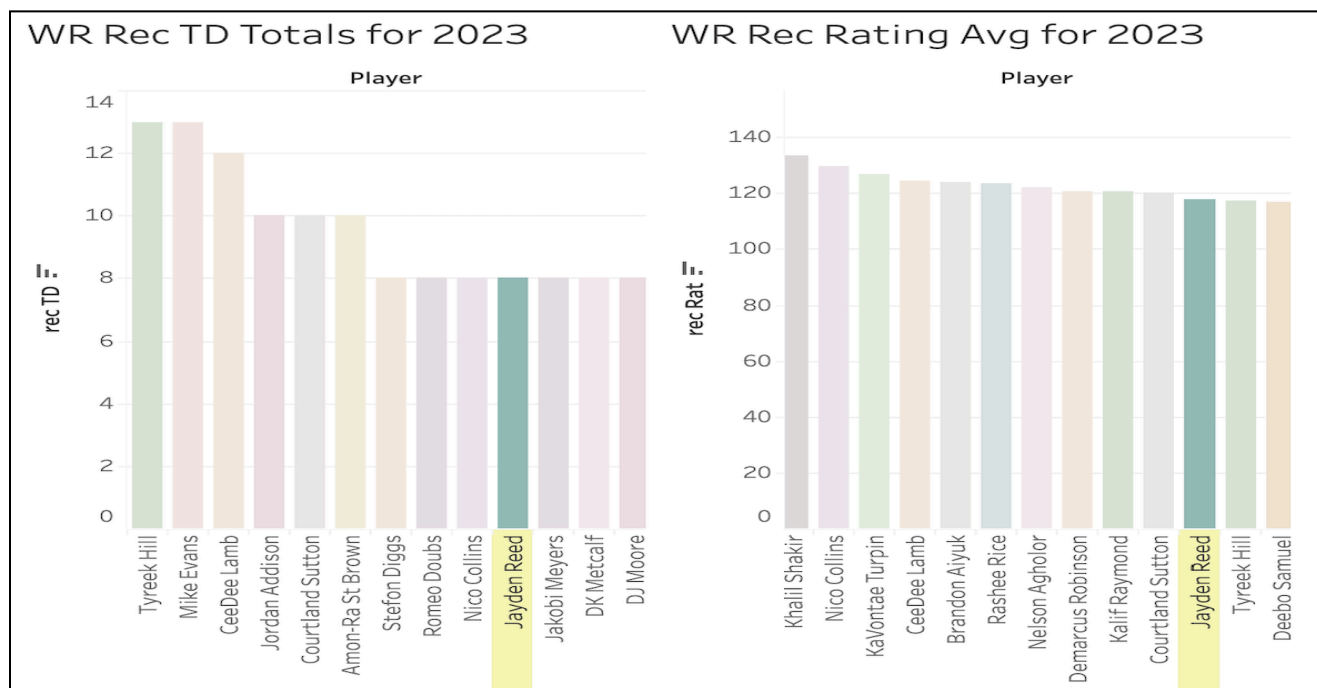
	pre_breakout_avg	normal_avg	percentage_diff
rec_Rec/Br	21.8216	20.674318507891000	5.549307425399020
rec_YAC/R	4.548309178743960	4.354397950469680	4.453227070193750
rec_Drop%	4.454106280193240	4.897610921501710	-9.055530306855860
rec_Int	1.2705314009661800	1.4876174210076900	-14.592866215189400

Using a 50/50 percentile threshold, I looked for players in the top 50% of the positive categories and the bottom 50% of the negative categories. This approach, combined with a 'breakout score' comparing total points rank to ADP rank, helped identify players who could significantly outperform their draft expectations.

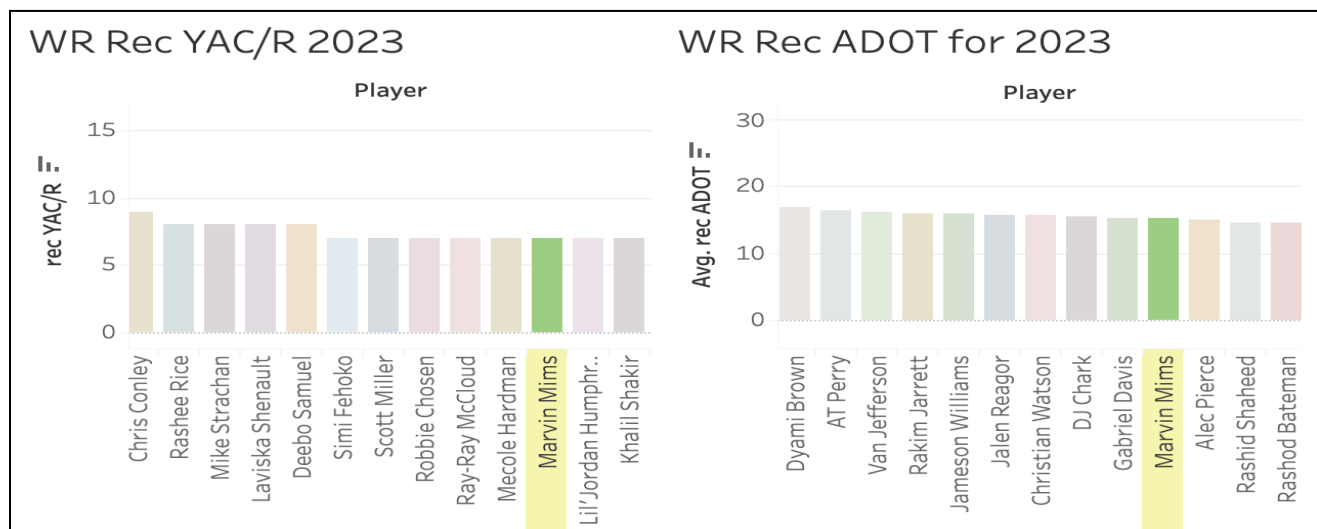
Player	year	rec_Rec/Br	rec_YAC/R	rec_Drop%	rec_Int
Jayden Reed	2023	21.3	5.0	3	1.0
Quentin Johnston	2023	19.0	4.0	4	1.0
Nelson Agholor	2023	17.5	4.0	4	1.0
Kalif Raymond	2023	35.0	6.0	4	0.0
Greg Dortch	2023	24.0	6.0	0	0.0
Marvin Mims	2023	22.0	7.0	3	1.0
Jake Bobo	2023	19.0	4.0	0	1.0
Mike Williams	2023	19.0	5.0	0	0.0

Applying this methodology to the 2023 season data, several interesting candidates emerged, led by Jayden Reed. Reed is entering his second NFL season after a promising rookie year where he recorded 10 touchdowns, 8 in the air and 2 on the ground, and showcased elite space-finding ability. While he can improve against press coverage, his fundamentals and versatility make him a reliable target for Jordan Love. With the Packers' offense expected to grow, Reed offers a more stable profile than Christian Watson, a competing wide receiver, but without the same injury concerns. His lower average depth of target (ADOT) suggests consistent targets, and his efficiency in yards per route run places him among top receivers. As

his ADP dips into the seventh round, Reed's mix of talent, opportunity, and consistency makes him a valuable pick, especially against vulnerable defenses in the crucial late-season stretch.



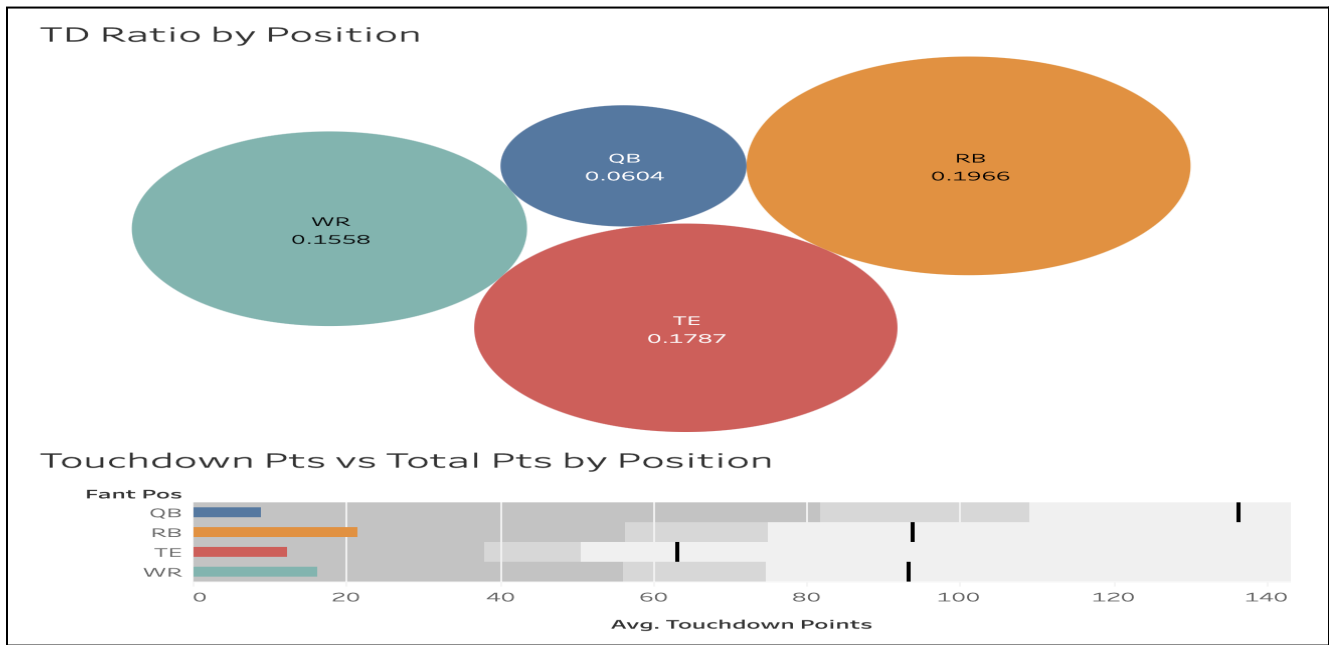
Another interesting candidate is Marvin Mims of the Denver Broncos. Mims, who is also heading into his second NFL season, presents a mixed bag of potential and uncertainty for fantasy managers. As the first offensive draft pick of the Sean Payton era in Denver, he is a very talented player, with a significant speed advantage over opposing defenders. However, Mims didn't deliver the production many hoped for in his rookie year, finishing with 22 receptions for 377 yards and just one touchdown, resulting in a WR89 finish. While he flashed big-play potential, with an impressive 17 yards per reception and a 15.1-yard average depth of target, his role in the Broncos' offense was limited, logging over 50% of offensive snaps in just two games. The arrival of new competition in Troy Franklin and the continued presence of Courtland Sutton complicates Mims' path to more consistent targets, but the departure of Jerry Jeudy and injury issues with Sutton could open the door for Mims to take on a larger role.



This analysis has demonstrated the value of looking beyond basic statistics to identify undervalued players. As I shift my focus to the other positions, I'll need to adjust my analytical approach. While wide receivers' value in PPR formats is heavily tied to receptions and yardage efficiency, running backs require consideration of different factors to help us uncover the next potential breakout stars.

Running Backs (RB)

For the running backs, I decided to not only include their yardage stats like I did with the wide receivers, but also their redzone stats, as touchdowns are much more important to running backs and tight ends than wide receivers. This is supported by looking at the average TD to PPR ratios for WRs and RBs, in which RBs lead by 23%.



To start, I joined tables that detail rushing statistics, receiving metrics, and red-zone performance. This helped establish a comprehensive view of each player's contributions. It was also crucial for capturing every facet of a running back's performance, ensuring that no critical detail was overlooked.

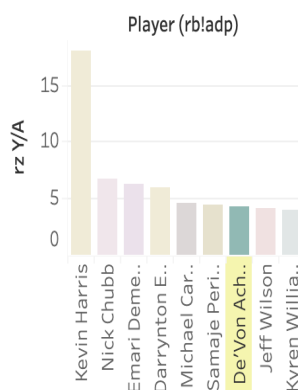
	pre_breakout_avg	normal_avg	percentage_diff
rec_ADOT	0.5846153846153850	0.5028064992614480	16.27045105305980
rush_YBC/Att	2.313076923076920	2.1775480059084200	6.2239232752053300
rz_Y/R	4.073076923076920	3.9137370753323500	4.071296683389070
rz_Y/A	2.6923076923076900	2.6022156573116700	3.4621279271333200
rec_Drop%	6.0	6.5376661742983800	-8.224130140081340
rec_Int	0.2153846153846150	0.29542097488921700	-27.092307692307700

Using the same method as the wide receivers, specific metrics like Rushing Yards Before Contact Per Attempt (rush_YBC/Att), Redzone Yards Per Reception (rz_Y/R), Redzone Yards per Attempt (rz_Y/A), and Average Distance of Target (rec_ADOT) were identified as positive indicators, while metrics like Drop Percentage (rec_Drop%) and Interceptions when Targeted (rec_Int) were identified as negative.

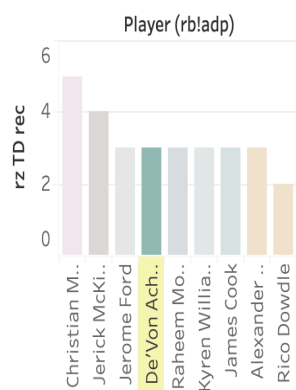
Player	year	rush_YBC/A tt	rz_Y/R	rz_Y/A	rec_ADOT	rec_Drop%	rec_Int
Alvin Kamara	2023	2.0	5.9	3.2	0.1	2	0
Samaje Perine	2023	2.0	6.3	4.4	-0.1	2	0
Devin Singletary	2023	2.0	5.0	2.8	0.3	5	0
Justice Hill	2023	3.0	11.0	2.9	0.6	5	0
De'Von Achane	2023	4.0	6.6	4.3	0.7	0	0
JK Dobbins	2023	2.0	5.0	4.0	1.0	0	0

For 2023, applying these criteria highlighted a few standout running backs: Alvin Kamara, Samaje Perine, Devin Singletary, Justice Hill, De'Von Achane, and JK Dobbins. Achane is by far the most realistic breakout candidate. As a rookie last year, he averaged an incredible 7.8 yards per carry, and ranked second in EPA per attempt and first in second-level yards per rush. Despite averaging just 12 touches per game, Achane still managed 17.3 PPR points per game, ranking fifth among all running backs. His speed and fit in Mike McDaniel's Miami offense make him a nightmare for opposing defenses, especially since they can't stack the box against him due to Miami's elite wide receivers. However, the primary concern with Achane is volume. Given his size and the presence of Raheem Mostert, who dominated goal-line work last season, it's unlikely Achane will see many 20-touch games. Still, his potential for big plays and his efficiency make him a high-risk, high-reward pick in fantasy drafts, where his explosiveness could be game-changing even with limited touches.

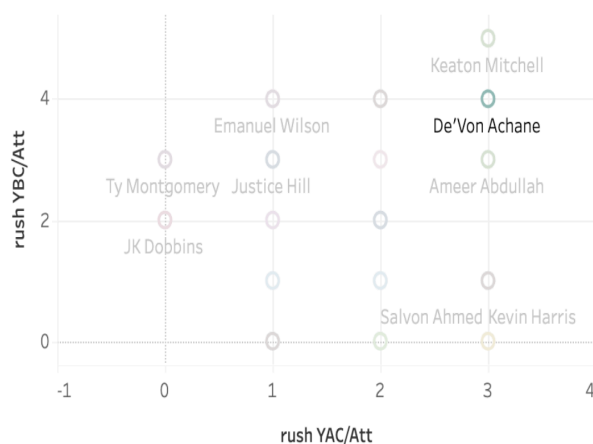
RB Rush Redzone Y/A
for 2023



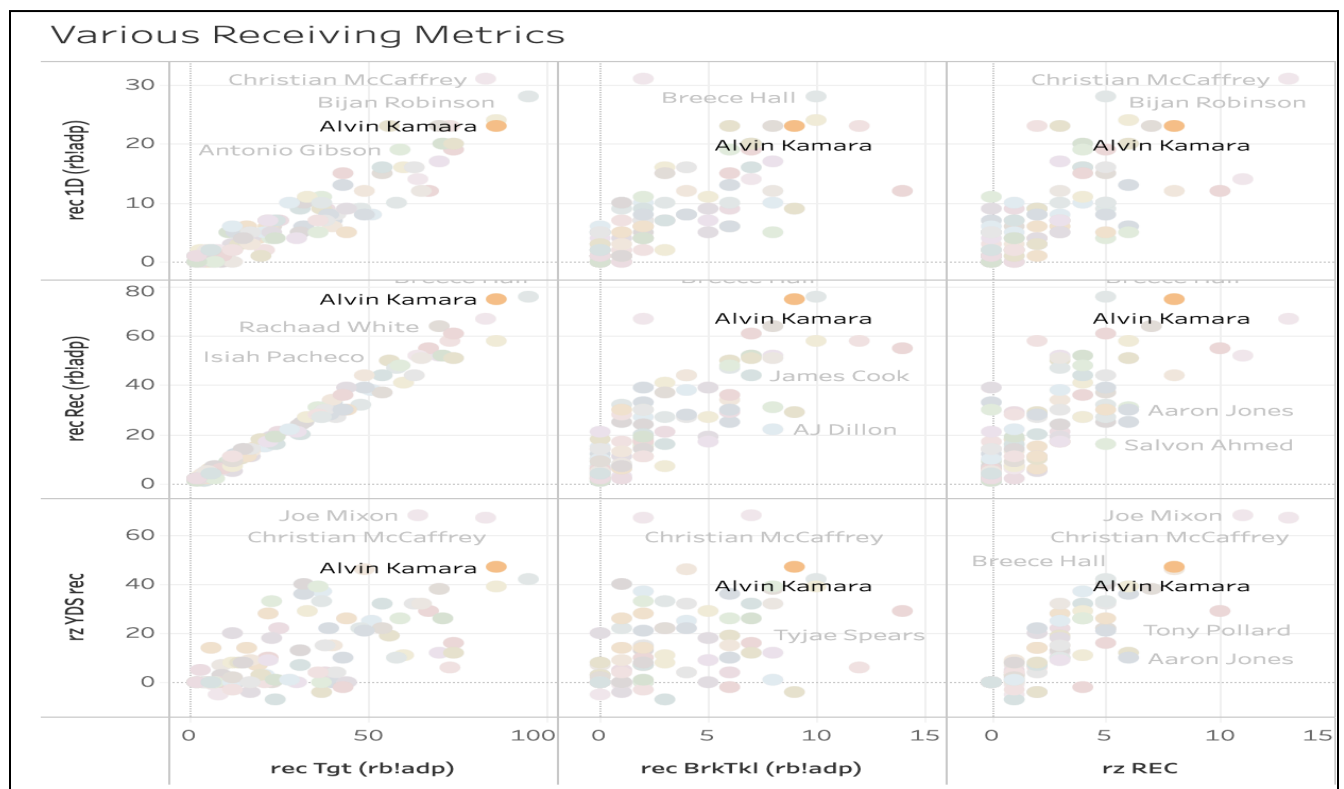
RB Redzone Rec TDs
for 2023



RB Rush YBC & YAC per Attempt by Position



Despite playing a completely different game than Achane, Alvin Kamara remains a strong fantasy option, especially in PPR leagues, despite being 29 years old. Even though his age and lack of carries drags his ADP down, Kamara can still dominate, as from Weeks 4-16 in 2022, Kamara was the RB2. Kamara's production mostly comes in the air, as he leads in more receiving categories than I can count. This is good since his quarterback, Derek Carr, heavily targets him on numerous check-downs and designed plays each game. Even though the Saints have a new offensive coordinator, the status of the other running backs on the roster—Kendre Miller, who is injury-prone, and Jamaal Williams, who seems past his prime—seems to secure Kamara's role as the primary back. The Saints also haven't added any notable competition at running back or receiver, leaving Kamara poised to continue thriving on checkdowns and targets. If he maintains his volume in the passing game, Kamara could still be a top fantasy RB this season, particularly in PPR formats.

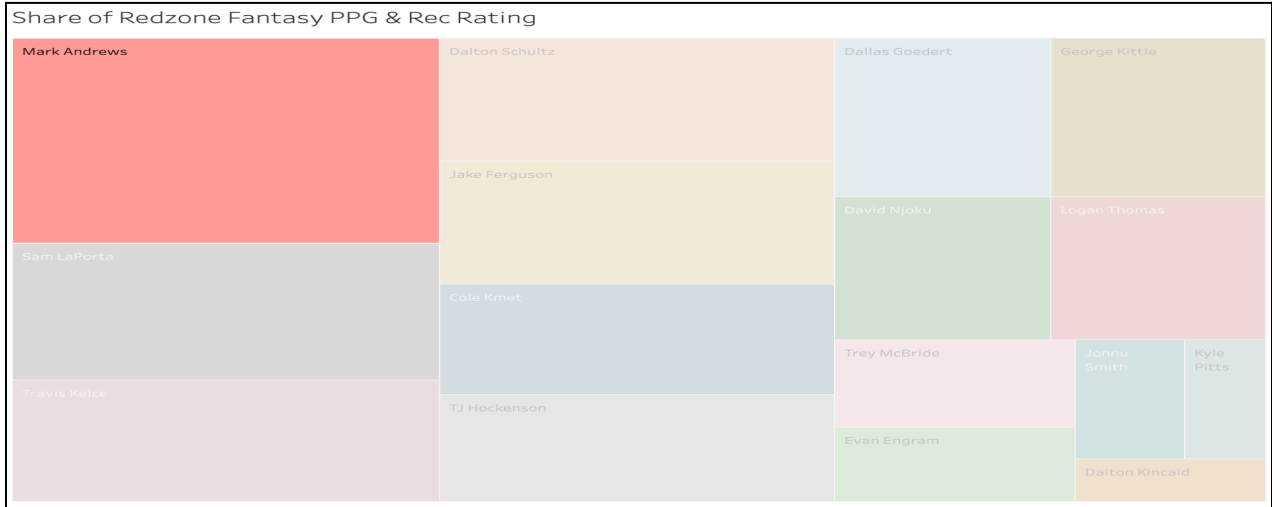


	pre_breakout_avg	normal_avg	percentage_diff
rz_Y/R	7.614285714285710	7.289583333333330	4.454333891315890
rec_Drop	2.9285714285714300	4.145833333333330	-29.361091170136400
rec_Int	1.5714285714285700	2.2291666666666700	-29.506008010680900

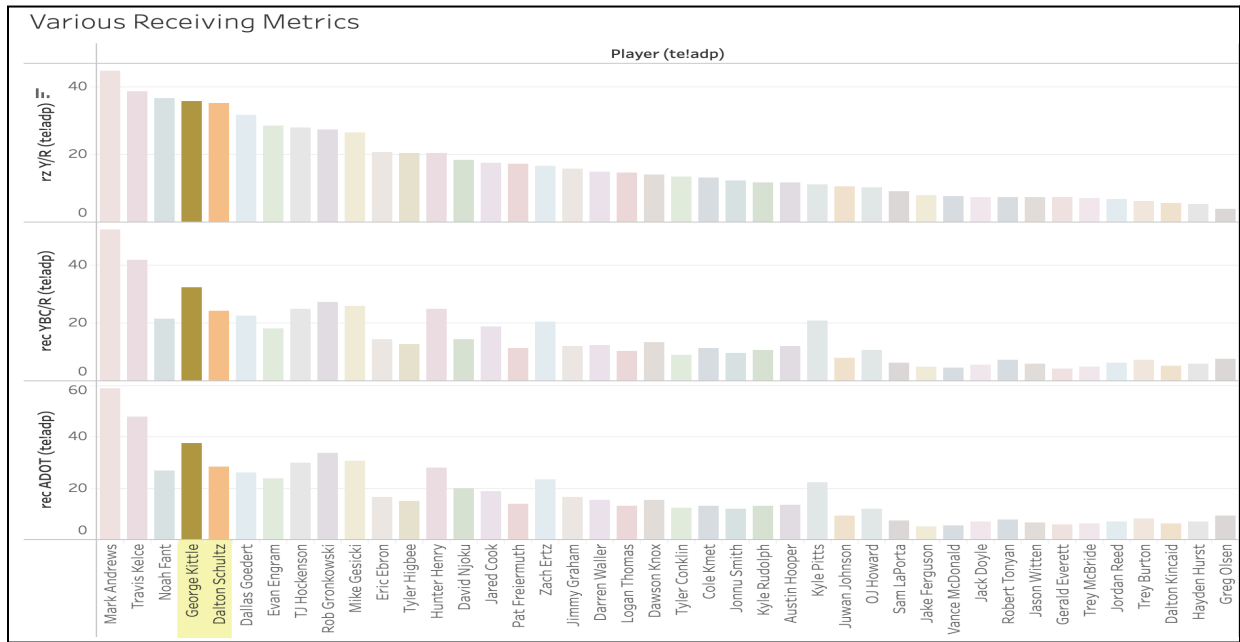
The analysis prioritized metrics like Redzone Yards Per Reception (rz_Y/R), which should be in the top percentile, while penalizing metrics such as Drop Percentage (rec_Drop) and Interceptions when Targeted (rec_Int), aiming to keep these in the bottom percentile. By joining tables that detailed both receiving metrics and red-zone performance, I ensured a comprehensive view of each TE's contributions.

Player	year	rz_Y/R	rec_Drop	rec_Int
George Kittle	2023	7.8	4	2
Dalton Schultz	2023	11.4	3	2
Logan Thomas	2023	7.0	2	2
Mark Andrews	2023	7.7	3	0

Given the smaller pool of impactful TEs in fantasy football, only those who finished within the top 15 were considered, keeping the analysis focused on the most relevant players. This method highlighted standout tight ends such as George Kittle, Dalton Schultz, Logan Thomas, and most notably, Mark Andrews. Out of the four guys listed, Mark Andrews has the highest ADP, showing that most fantasy users value him as a great tight end. Despite dealing with injuries last season, including a fibula fracture and ligament damage, Andrews still finished among the top tight ends, maintaining a 23.4% target share during his healthy games, slightly down from previous years due to the emergence of rookie WR Zay Flowers. However, Andrews' consistency in receptions, yards per game, and red-zone dominance remained intact, making him a key piece of Baltimore's offense, especially with minimal competition added in the offseason. With a healthy Lamar Jackson and a more efficient passing game under OC Todd Monken, Andrews is poised for another strong season where we could see him return to the top of the fantasy tight end rankings.



Similar to Andrews, George Kittle and Dalton Schultz are also two veteran tight ends who have already proven themselves to be valuable fantasy pieces. While I don't think they will perform as well as Andrews will in fantasy, they are still great football players. The only issues with them is volume as Kittle has to compete with a stacked 49ers offense led by Deebo Samuel and Christian McCaffery, and Schultz might see his targets decrease to the addition of Stefon Diggs to an already packed Texans receiving room.



Logan Thomas stands out as the outlier in this list. He is 33, and hasn't been fantasy relevant since 2020 where he finished as the TE3. However, his advanced metrics and production should not be overlooked. Despite concerns about his injury history, Thomas showed signs that can still be fantasy relevant, finishing as a top 10 TE in 4 separate weeks. Ironically, Thomas only scored 4 touchdowns all year, and every week that he was top 10 in was a week he scored a touchdown in, further showing the significance of redzone data and touchdowns for tight ends. Now with a revamped offense led by rookie QB and Heisman winner Jayden Daniels, Thomas might be able to rejuvenate his career in the same way that Schultz did last year with a rookie CJ Stroud.

This analysis for tight ends highlights the importance of red-zone efficiency and key performance metrics in identifying breakout candidates. Together, these insights provide valuable guidance for fantasy football managers looking to secure top-performing tight ends in the upcoming season.

Quarterbacks (QB):

For the 2023 quarterback analysis, the focus was extended beyond just passing stats to include rushing and red-zone performance, recognizing the dual-threat capabilities that many modern QBs possess.

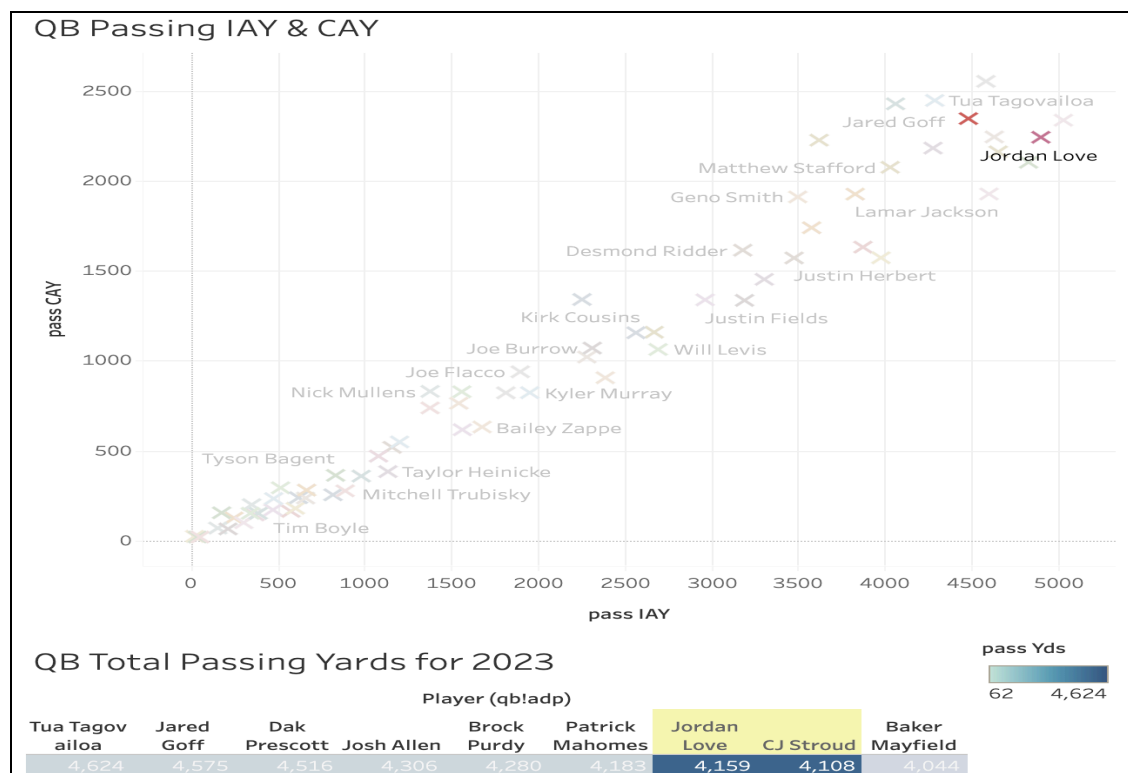
	pre_breakout_avg	normal_avg	percentage_diff
rush_Att/Br	28.41176470588240	25.756756756756800	10.3080056786618
pass_IAY/PA	8.123076923076920	7.877472527472530	3.1178070726093400
rz_Y/A	3.93076923076923	3.8211538461538500	2.868646200301940
pass_YAC/Cmp	5.326923076923080	5.1997252747252700	2.446240819992600

The analysis prioritized metrics like Rushing Attempts per Broken Tackle (rush_Att/Br), Intended Air Yards per Pass Attempt (pass_IAY/PA), Redzone Yards Per Attempt (rz_Y/A), and Yards After Catch per Completion (pass_YAC/Cmp), which were all identified as key indicators that should be in the top percentile. Unlike other positions, no bottom metrics were used, allowing for a more focused analysis on what positively impacts a quarterback's performance. Additionally, the threshold for identifying breakout candidates was adjusted to the top 60% instead of 50%, providing a broader group of potential breakouts.

By joining tables that covered passing, rushing, and red-zone performance, a comprehensive view of each QB's contributions was achieved. Given the large pool of quarterbacks, only those with significant breakout potential were considered, focusing on those who exceeded expectations in both passing and rushing. This method highlighted several standout quarterbacks who had the potential to greatly outperform their draft positions. Specifically, Baker Mayfield, Jordan Love, Brock Purdy, CJ Stroud, and Tua Tagovailoa emerged as potential breakout candidates for the upcoming season.

Player	year	rush_Att/Br	pass_IAY/PA	rz_Y/A	pass_YAC/Cmp
Baker Mayfield	2023	16.0	8.5	3.2	5.3
Jordan Love	2023	25.0	8.5	3.4	5.2
Brock Purdy	2023	20.0	8.2	5.2	6.7
CJ Stroud	2023	20.0	9.0	3.4	5.5
Tua Tagovailoa	2023	35.0	7.7	3.5	5.6

Right off the bat, Jordan Love and C.J. Stroud stand out. Both QBs are young, part of powerhouse offenses, and love slinging the ball. Love proved himself as Green Bay's answer at quarterback last season, finishing strong with an average of 20.9 fantasy points per game from Week 10 onward, thanks to his aggressive downfield passing and a deep group of pass catchers. This resulted in him finishing as the QB5 despite having a poor first half of the year. Despite this, his ADP is still around the QB8 range, allowing fantasy managers to get him in later rounds. On the other hand, Stroud burst onto the scene in his rookie year, throwing for over 4,100 yards and leading the Texans to the playoffs. Despite being projected for over 5,000 passing yards, being third in MVP odds, and adding Stefon Diggs and Joe Mixon to an already loaded offense, his ADP is still only the QB6. Both guys seem to be undervalued due to their youth, but if history has proven anything, it's that young guys can make a difference, and these guys have all the tools to do so.



Other interesting options at QB are Tua Tagovailoa, Brock Purdy, and Baker Mayfield. Purdy, the 49ers' emerging star, thrived in his first full season, showcasing poise and efficiency in a well-rounded offense loaded with talent, though his fantasy value may be capped by San Francisco's run-heavy approach. Tua, on the other hand, is at the helm of one of the league's most explosive offenses in Miami, with elite weapons like Tyreek Hill and Jaylen Waddle at his disposal. When healthy, Tua has demonstrated the ability to post big numbers, but his injury history and reliance on deep-ball accuracy create some risk. Meanwhile, Baker Mayfield enters the season with something to prove in Tampa Bay. Despite having a successful season which resulted in a playoff berth, the Buccaneers' transitioning offense makes him more of a high-risk, high-reward option. While Purdy offers stability, Tua brings upside, and Mayfield represents a gamble, all three quarterbacks have the potential to deliver fantasy value depending on team needs and draft strategy.

Interestingly, the data also revealed that breakout QBs were more likely to switch teams compared to other positions, with 38% of breakout quarterbacks having changed teams, compared to 28% of the general QB population. This suggests that a change in system or coaching staff could play a significant role in a quarterback's breakout season, as shown with Baker's career resurgence on the Bucs.

The quarterback analysis emphasizes the importance of dual-threat capabilities and red-zone efficiency. The tendency for breakout QBs to switch teams more frequently than average underscores the impact that a new environment can have on a quarterback's performance. With Baker Mayfield, Jordan Love, Brock Purdy, CJ Stroud, and Tua Tagovailoa all showing potential, these insights are invaluable for fantasy football managers looking to identify quarterbacks who are poised to exceed expectations and deliver top-tier fantasy production in the upcoming season.

As we approach the upcoming fantasy football season, it's clear that success will hinge on the ability to spot those hidden gems—players who are poised to exceed expectations and deliver game-changing performances. By diving deep into advanced metrics, beyond just the surface-level stats, we can uncover the true breakout candidates across all positions. Whether it's a young quarterback ready to lead his team, a veteran running back defying age, or a wide receiver on the cusp of stardom, the data provides a roadmap for identifying those who can take your fantasy team to the next level. In a game where the difference between winning and losing often comes down to a single decision, arming yourself with these insights is not just an advantage—it's essential. The key now is to trust the process, make informed choices, and be ready to capitalize on the breakout stars who can lead your team to victory.