REAL MADRID CF

SCOUTING REPORT

By

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Data Driven Decision-Making

DEC
2024

Contents

INTRODUCTION

Real Madrid CF faces one of the most critical tactical challenges arising from Dani Carvajal's ACL injury. Ever since joining the team in 2013, Carvajal has been one of the essential right-backs for the club. His absence due to injury has exposed a serious deficient depth in that position.

As not counting with many alternatives, the team hass been seen obligated to adapt players beyond their natural positions to fill the need. This data-driven analysis aims to identify suitable right-back candidates who can replicate Carvajal's contributions to the team, ensuring both immediate tactical adaptation and long-term reinforcement of the squad.

This involves data visualization using performance metrics that best represent the duties of a right-back in defending, passing, and offensive contributions. Applying clustering algorithms to group players with the most similar patterns in their performance, allowing the identification of those who constantly appear alongside Dani Carvajal. For each player, we counted how many times they were grouped with Dani Carvajal across the different clusters. A higher count means their performance trends are more similar to the player. Most similar player will be then compared to Dani Carvajal.

Dani Carvajal suffered an ACL injury and will be out for 8-10 months.

On October 8, 2023, during a La Liga match against Villarreal CF, Dani Carvajal suffered a severe cruciate ligament injury in the 92nd minute of the game. After a challenge with Yeremy Pino, the right-back clutched his knee in visible pain and Carvajal was taken off the field in tears. The match ended in a 2-0 victory for Real Madrid, but Carvajal's injury overshadowed the result. Diagnosis confirmed a severe injury requiring surgery and ruling him out for 8–10 months, with an expected return till the 2025/2026 season.

Carvajal's absence leaves a significant gap in Real Madrid's tactical setup. Since his debut in 2013, Carvajal has been key to Real Madrid's success and it has been notable that since his injury, Real Madrid has experienced an unusual inconsistency, losing 4 of their last 9 games and highlighting his absence on the right. Currently, the only natural right-back available is Lucas Vázquez. Additionally, the team has been forced to use Federico Valverde, a natural midfielder, as a right-back.

DANI CARVAJAL

Scouting Report

Position: Right Back
Footed: Right
Height: 173cm, 5'8 ft
Weight: 69 kg, 154lb
Age: 32
Country: Spain
Wage: € 200,385 Weekly
Expires June 2026

→ DEFENDING

Renowned for his impeccable positional awareness and ability to read the game. His anticipation allows him to intercept passes and break up opposition plays. Fearless in physical duels, accurate in his timing to compete successfully against bigger opponents. Carvajal's defensive discipline ensures he maintains commitment, making him a reliable presence in the backline. His ability to transition quickly to his position is another attribute of his defensive skills.

→ ATTACKING

Overlapping runs down the right stretches opposing defenses, creating opportunities for him and his teammates to exploit space. Through a combination of short passing, dribbling, and off the ball movements, Dani Carvajal progresses into advanced areas. His participation in the final third allows him to contribute to the game with crossing often, delivering precise balls into the box to set up scoring opportunities. His attacking involvement allows for the constant fluctuation of the midfielders and attackers.

→ PHYSICAL

Carvajal's game is highlighted by his exceptional stamina and relentless work rate. These attributes enable him to cover large distances throughout the 90 minutes, supporting both defensive and attacking phases. He presses high when needed and recovers quickly to help defensively. Carvajal uses his low center of gravity to his advantage by covering the ball and demonstrating excellent balance and agility.

→ MENTAL

Highly regarded for his leadership qualities. As one of Real Madrid's more experienced players, he sets an example through his work ethic and determination. His resilience in high-pressure situations is invaluable to the team, particularly in critical matches where his composure and leadership shine through. Whether comanding the defense or driving the team forward, Carvajal's presence is both inspiring and unifying.

DATA

This situation gives an opportunity to develop a data-driven analysis with the purpose to identify a player who can replicate Carvajal's contributions and integrate into the team. By analyzing key performance indicators (KPIs), Real Madrid can ensure continuity in their tactical system, find immediate needs, and strengthen their squad depth for the future.

Process began by collecting the posted data from FBref. The focus was on season 2024/2025 for the "Top 5 European leagues" (Premier League, La Liga, Serie A, Bundesliga, and Ligue 1), which are recognized as the most competitive leagues in the world, in addition to these leagues the Eredivisie (Netherlands) and the Primeira Liga (Portugal) were included to have a broader amount of players to compare across Europe.

The initial dataset contained information on 3,257 players across all positions. To focus the analysis on defenders, a filter was applied to show only those players with the label "DF". The next step involved filtering the dataset to identify players who specifically played as right-backs, this was accomplished by manually checking and using information from Wyscout and TransferMarket to identify those players who play as right-backs or that had played in this position during the season.

Due to the variation in the number of teams and matches played across leagues, an adjustment was made to ensure consistency and ensure that each player was getting judged correctly. Each league was reviewed to calculate the average number of matches played by teams up to the day when data was collected. This calculation gave us the following numbers: Premier League 14 games, La Liga 15.05 games, Serie A 14 games, Bundesliga 12 games, Ligue 1 13.3 games, Eredivisie 14 games, and Primeira Liga 12 games. Players were then filtered to include only those who had participated over 25% of the games in their team. This ensured that the analysis focused on players who had a significant contribution to their teams during the season and eliminated those with minimal game time. Each value was divided by 90 to demonstrate the real impact the players had during their time on the pitch. This data preparation ensured that the final dataset was comprehensive and consistent.
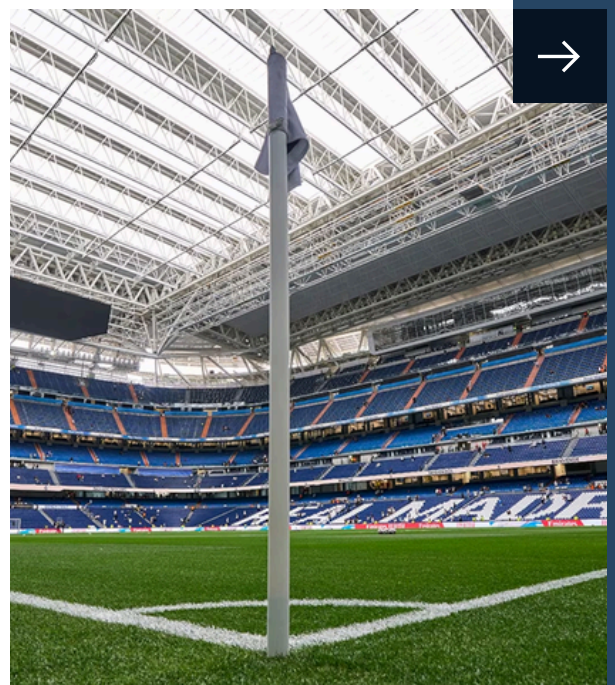
→ **215**
Right-Backs

→ **7**
European Leagues

EVALUATION

This involves data visualization and clustering using 14 performance metrics that best represent the duties of a right-back. Applying clustering to group players with the most similar patterns in their performance would allow the identification of those who constantly appear alongside Dani Carvajal. Each player is counted how many times they were grouped with Dani Carvajal across the 14 metrics.

Analyzing clusters based on the average number of 90-minute matches played provides valuable insights as it highlights players with consistent match involvement. This metric ensures the player can meet the physical demands of a starting position and as well is consistent in performing.

This analysis of received passes per 90 minutes and passing accuracy is highly valuable. Looking for a player who is not only active in receiving the ball during matches but also excels in pass accuracy. Identifying players who can be as involved as Carvajal in every game and that would suit a system like Real Madrid.

This analysis of carries into the final third per 90 minutes versus successful take-on percentage is crucial as it rates progressive ball movement into the opponents defensive zone and 1v1 effectiveness. Carvajal's replacement should excel at advancing the ball into dangerous areas and winning duels to create opportunities.

The following chart analyses received passes per 90 minutes and how many of those were progressive received passes per 90 minutes. This is evaluated with the purpose to find player which circulate around the pitch in a similar way as Dani Carvajal. This would benefit Real Madrid and allow them having that passing option where Dani Carvajal is usually at.

EVALUATION

This visualization of touches in the attacking third versus tackles in the defensive third per 90 minutes evaluates a player's ability to balance offensive contributions with his defensive responsibilities. A right-back must actively contribute in advanced areas while maintaining defensive form. We will be looking for players who had balance this the same way as Dani Carvajal so its attractive for Real Madrid.

The following scatterplot compares completed passes per 90 with progressive passes per 90, This is analyzed to find a player who contributes to the team the same fluctuation of the ball as Carvajal. Carvajal seems to have a role as a secure distributor and a forward playmaker.

This visualization demonstrates the balance between defensive and offensive playmaking and as well the offensive transitioning which this player has by analyzing touches in the defensive and attacking thirds per 90 minutes. Players who rank high in both metrics demonstrate the dynamic presence needed in a modern right-back.

Comparing touches in the attacking third per 90 to crosses per 90, highlights the offensive contributions of players and what trends in actions are looked for in Real Madrid's playing style. Right-backs who frequently engage in the attacking third while delivering crosses demonstrate their ability to create goal-scoring opportunities or support a system reliant on width.

This scatterplot compares expected goals against (xGA) per 90 and goals against (GA) per 90 when on the field. Teams can identify those who minimize defensive vulnerabilities and contribute to overall team stability.
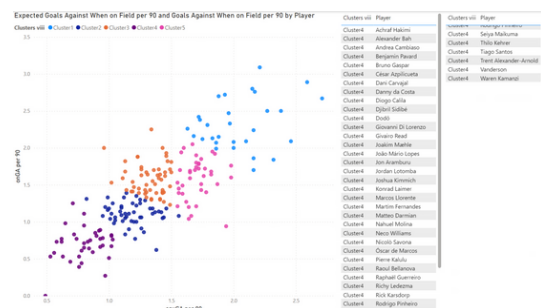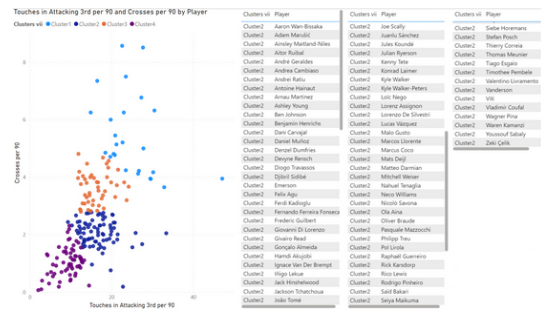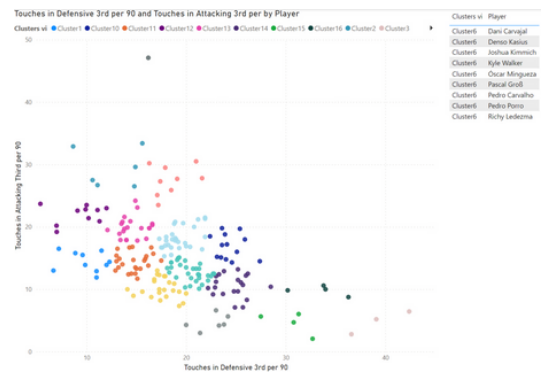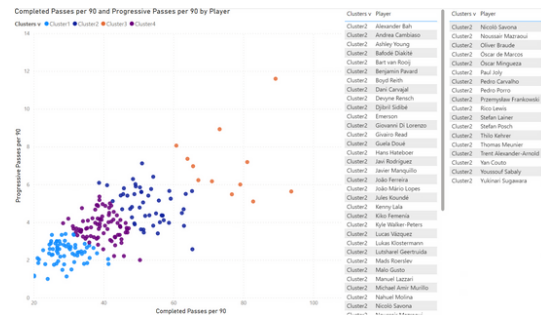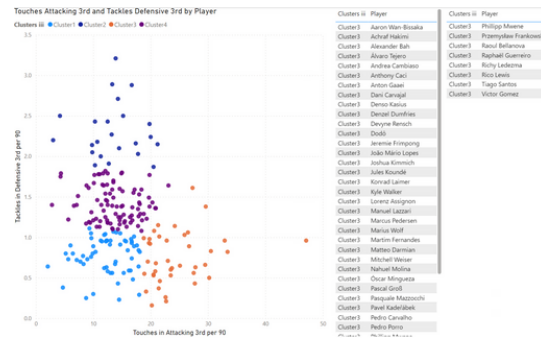
EVALUATION

This visualization examines the correlation between touches in the attacking third and shot-creating actions per 90 minutes, highlighting a player's effectiveness in generating offensive opportunities, making these metrics for evaluating their influence in the final third.
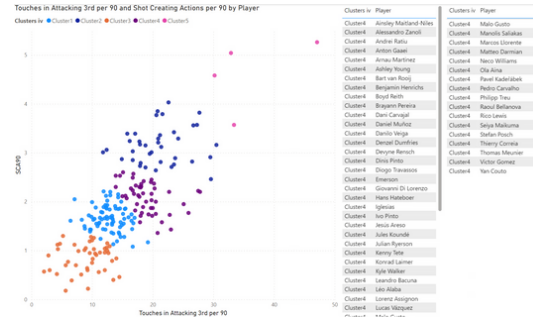

This scatterplot evaluates passes to the final third and the of key passes (KP) per 90 mins by each player, providing insights into their ability to deliver the ball to those danger areas play and create scoring opportunities. Players excelling in both categories show a capability for delivering the ball into those danger areas and as well making those passes be high quality scoring moments.
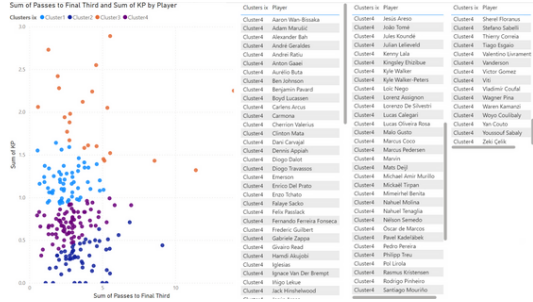
This visualization focuses on tackles won per 90 and recoveries per 90, providing a comprehensive view of a player's defensive contributions.
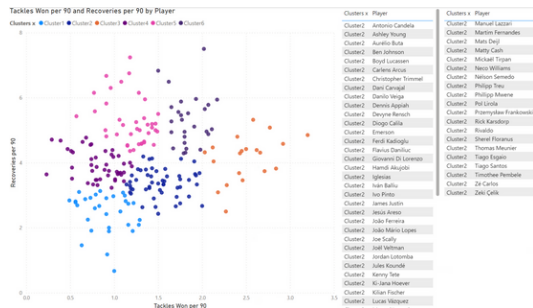
This scatterplot examines interceptions and clearances per 90 minutes. Interceptions highlight a player's ability to anticipate and disrupt opposing play, while clearances measure their capacity to relieve defensive pressure in critical moments. Identifying players with strong performance in both areas demonstrates proactive defensive abilities.
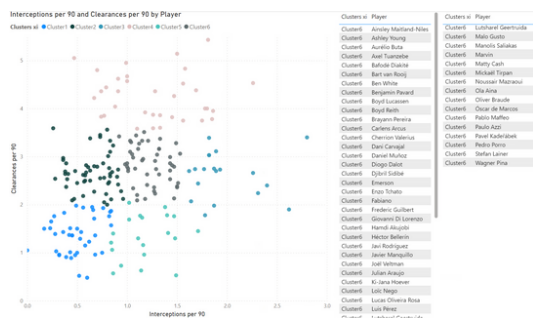
Relationship between progressive carries per 90 and the total distance covered in those carries, offering a measure of a player's ability to drive the ball forward.
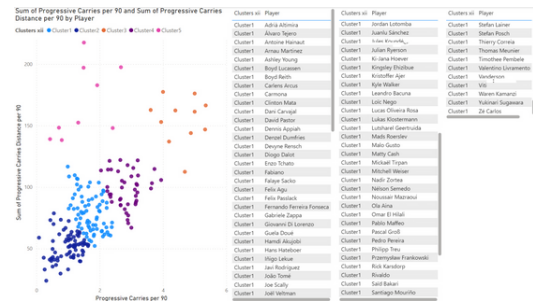
Breakdown of players which had the most appearances in the same clusters as Dani Carvajal:

11 Appearances: Joules Kounde

8 appearances: Malo Gusto, Giovanni Di Lorenzo, Emerson, Devyne Rensch, Kyle Walker, and Ashley Young

6 appearances: Rick Karsdorp, Konrad Laimer, Daniel Muñoz, Alexander Bah, Boyd Reith, Hamdi Akujobi, Nahuel Molina, Matteo Darmian, Ola Aina, Thierry Correia, Lucas Vázquez, João Mário Lopes, Loïc Nego, Givairo Read, Mickaël Tirpan, and Rico Lewis

5 Appereances: Denzel Dumfries, Javi Rodríguez, Hans Hateboer, Arnau Martinez, Philipp Treu, Mats Deijl, Kenny Tete, Noussair Mazraoui, Pedro Porro, Lorenz Assignon, Óscar Mingueza, Thomas Meunier, Kyle Walker-Peters, Lutsharel Geertruida, Pedro Carvalho, Lucas Rosa, Joshua Kimmich, Carlens Arcus, Diogo Dalot, Pavel Kadeřábek, Raoul Bellanova, Raphaël Guerreiro, Neco Williams, Richy Ledezma, Martim Fernandes, Iglesias, Benjamin Pavard, Przemysław Frankowski, and Waren Kamanzi.

Players who play for direct rivals of Real Madrid will not be considered as potential targets and will therefore be excluded from further scouting. Likewise, players older than Carvajal will not be evaluated, neither players above 30 y/o without National Team or Champions League Experience. The players which only appeared in 5 of the clusters will be considered if they are 25 or younger. This is done to focus on players which can be part of a long term project and could possibly make an impact.

KPI's

The following KPIs will be averaged in percentiles for each player and compared in a radar chart with Dani Carvajal. Top 6 most similar players will be identified.

Cmp: Total passes attempted per 90 minutes.

Cmp%: Percentage of passes that were accurate.

KP: Passes leading directly to a shot.

PrgP: Number of passes that traveled 10 yards or more towards the opponent's goal per 90 minutes.

Crs: Number of crosses attempted per 90 minutes.

Tkl%: Percentage of tackles successfully completed.

Aeridal Duels Won%: Percentage of aerial duels successfully won.

Int: Interceptions made per 90 minutes.

Touches Attacking 3rd: Total touches in the attacking third of the field.

TakeOnsSucc%: Percentage of dribbles successfully completed.

Carries into Final 3rd: Successful carries into the attacking third.

Rec Passes: Total passes received by the player per 90 minutes.

PrgR Passes: Total passes received by the player that traveled 10 yards or more towards the opponent's goal per 90 minutes.

Recov: Ball recoveries per 90 minutes.

onGA: Goals conceded while the player is on the pitch.

onxGA: Expected goals against while the player is on the pitch.

Dani Carvajal's Percentiles:

Indicator	Percentile
Cmp	90.19
Cmp%	84.11
KP	47.90
PrgP	61.92
Crs	46.73
Tkl%	90.42
Aeridal Duels Won%	69.86
Int	81.07
Touches Attacking 3rd	93.93
TakeOnsSucc%	38.94
Carries into Final 3rd	21.03
Rec Passes	90.89
PrgR Passes	91.12
Recov	19.86
onGA	98.13
onxGA	92.76

8 Appearances

Club: Chelsea FC
Position: Right-Back
Footed: Right
Height: 179cm, 5'10ft
Weight: 67kg, 148lb
Age: 21
Country: France
Market Value: €35M

Malo Gusto
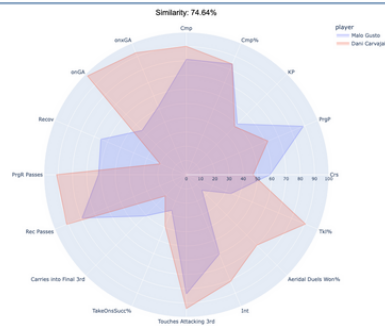
Club: SSC Napoli
Position: Right-Back
Footed: Right
Height: 184cm, 6'0ft
Weight: 79kg, 176lb
Age: 31
Country: Italy
Market Value: €15M

G. Di Lorenzo
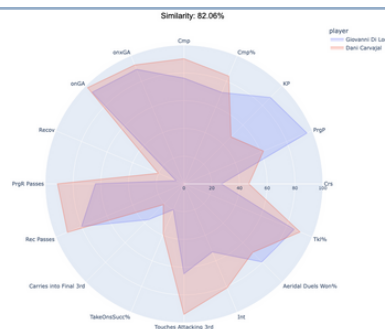
Club: AC Milan
Position: Right-Back
Footed: Right
Height: 183cm, 6'0ft
Weight: 76kg, 168lb
Age: 25
Country: Brazil
Market Value: €18M

Emerson
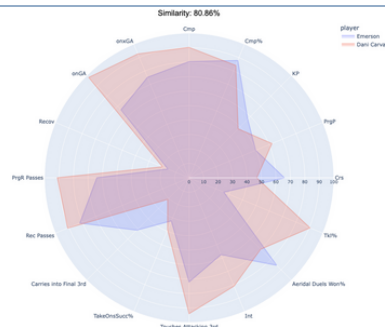
Club: AFC Ajax
Position: Right-Back
Footed: Right
Height: 179cm, 5'10ft
Weight: 74kg, 165lb
Age: 21
Country: Netherlands
Market Value: €12M

Devyne Rensch
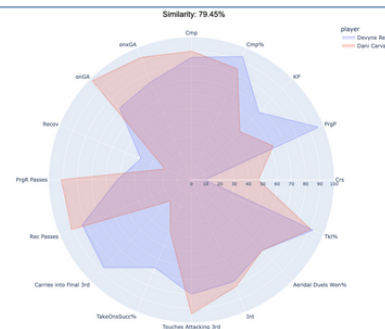
6 Appearances

Rick Karsdorp

Club: PSV Eindhoven
Position: Right-Back
Footed: Right
Height: 184cm, 6'0ft
Weight: 79kg, 176lb
Age: 29
Country: Netherlands
Market Value: €5M
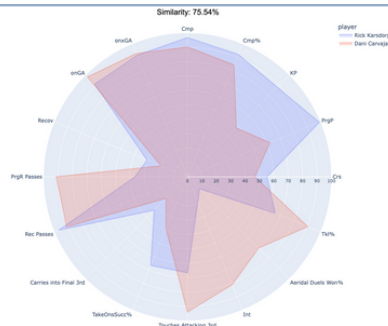
Konrad Laimer

Club: FC Bayern Munich
Position: Right-Back
Footed: Right
Height: 179cm, 5'10ft
Weight: 68kg, 150lb
Age: 27
Country: Austria
Market Value: €18M
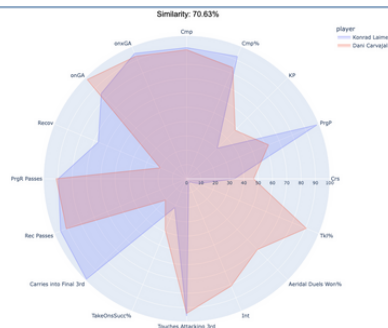
D. Muñoz

Club: Crystal Palace FC
Position: Right-Back
Footed: Right
Height: 183cm, 6'0ft
Weight: 79kg, 176lb
Age: 28
Country: Colombia
Market Value: €25M
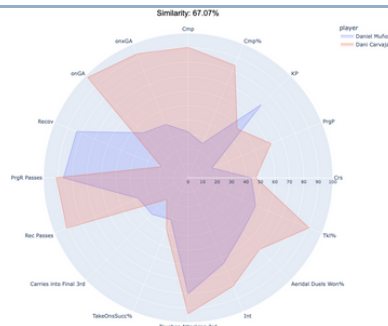
Alexander Bah

Club: SL Benfica
Position: Right-Back
Footed: Right
Height: 183cm, 6'0ft
Weight: 76kg, 168lb
Age: 27
Country: Denmark
Market Value: €13M
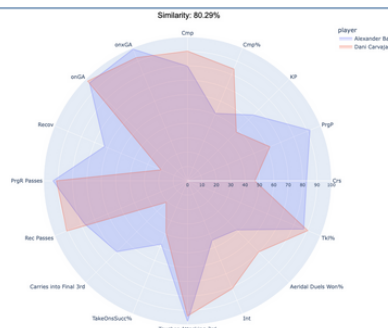
Boyd Reith

Club: Sparta Rotterdam
Position: Right-Back
Footed: Right
Height: 176cm, 5'9ft
Weight: 72kg, 159lb
Age: 25
Country: Netherlands
Market Value: €650K
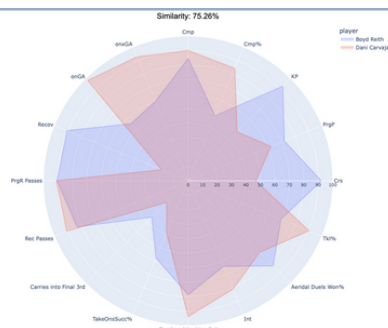
6 Appearances cont.

Hamdi Akujobi

Club: Almere City
Position: Right-Back
Footed: Right
Height: 175cm, 5'9ft
Weight: 69kg, 154lb
Age: 24
Country: Netherlands
Market Value: €450K
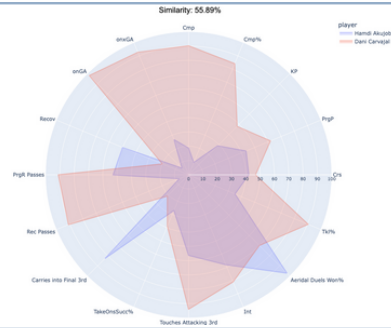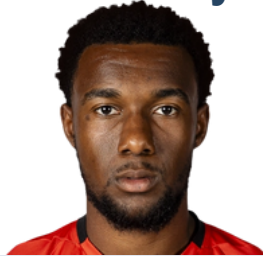
Ola Aina

Club: Nottingham Forest FC
Position: Right-Back
Footed: Right
Height: 179cm, 5'10ft
Weight: 66kg, 146lb
Age: 28
Country: Nigeria
Market Value: €14M
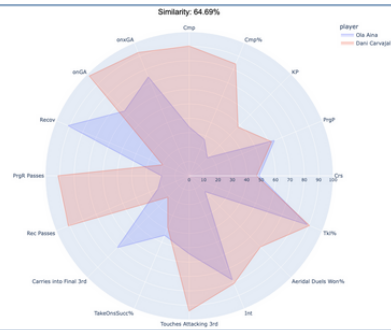
Thierry Correia

Club: Valencia CF
Position: Right-Back
Footed: Right
Height: 176cm, 5'9ft
Weight: 72kg, 159lb
Age: 25
Country: Portugal
Market Value: €6M
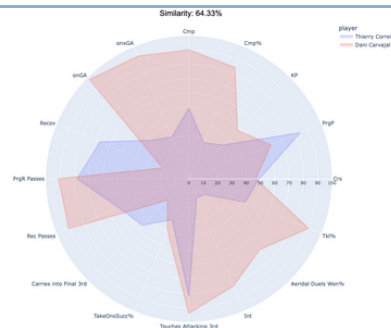
João Mário Lopes

Club: FC Porto
Position: Right-Back
Footed: Right
Height: 178cm, 5'10ft
Weight: 68kg, 152lb
Age: 24
Country: Portugal
Market Value: €15M
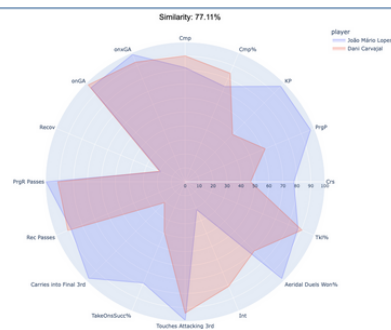
Givairo Read

Club: Feyenoord
Position: Right-Back
Footed: Right
Height: 176cm, 5'9ft
Weight: 71kg, 157lb
Age: 18
Country: Netherlands
Market Value: €4M

6 Appearances cont. 2

Club: Manchester City FC
Position: Righ-Back
Footed: Right
Height: 170cm, 5'7ft
Weight: 64kg, 143lb
Age: 20
Country: England
Market Value: €40M

Rico Lewis
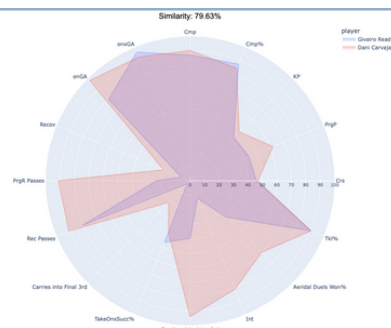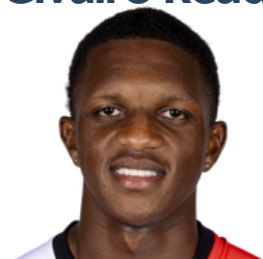
5 Appearances

Club: RC Celta de Vigo
Position: CB/Right-Back
Footed: Right
Height: 178cm, 5'10ft
Weight: 70kg, 155lb
Age: 21
Country: Spain
Market Value: €3M

Javi Rodríguez
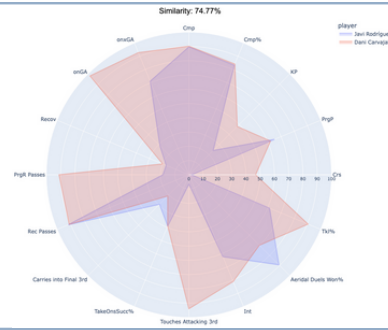
Club: Girona FC
Position: Right-Back
Footed: Right
Height: 181cm, 5'11ft
Weight: 74kg, 165lb
Age: 21
Country: Spain
Market Value: €10M

Arnau Martinez
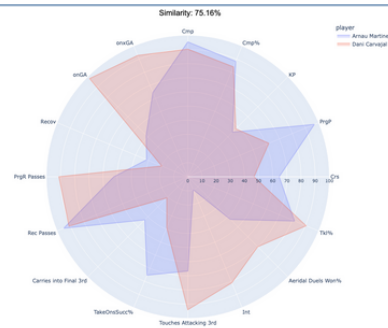
Club: FC St. Pauli
Position: Full-Back/Winger
Footed: Right
Height: 172cm, 5'8ft
Weight: 68kg, 150lb
Age: 24
Country: Germany
Market Value: €2.5M

Philipp Treu
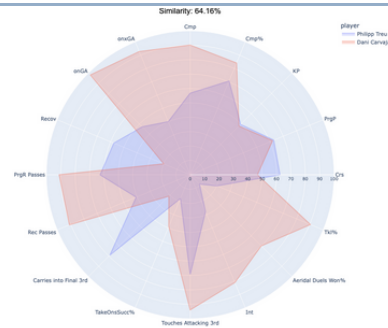
Club: Tottenham Hotspur FC
Position: Right-Back
Footed: Right
Height: 176cm, 5'9ft
Weight: 68kg, 152lb
Age: 25
Country: Spain
Market Value: €45M

Pedro Porro
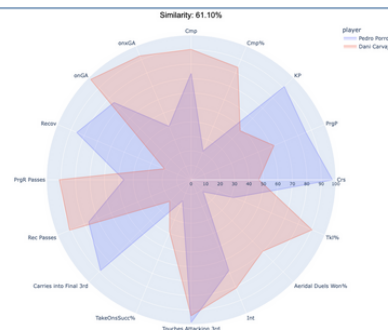
Club: Stade Rennais F.C.
Position: Right-Back
Footed: Right
Height: 179cm, 5'10ft
Weight: 67kg, 148lb
Age: 24
Country: France
Market Value: €9M

Lorenz Assignon
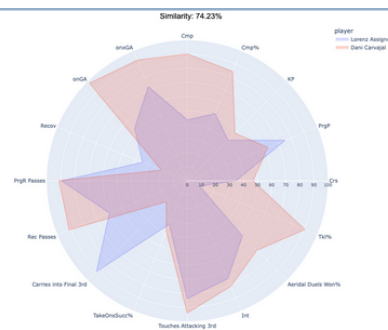
5 Appearances cont.

Óscar Mingueza

Club: RC Celta de Vigo
Position: Right-Back
Footed: Right
Height: 184cm, 6ft
Weight: 79kg, 176lb
Age: 25
Country: Spain
Market Value: €12M

Lutsharel Geertruida
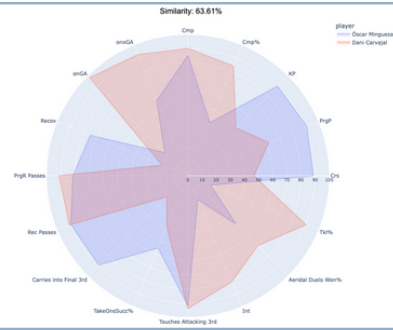
Club: RB Leipzig
Position: CB/Right-Back
Footed: Right
Height: 184cm, 6ft
Weight: 76kg, 168lb
Age: 24
Country: Netherlands
Market Value: €32M
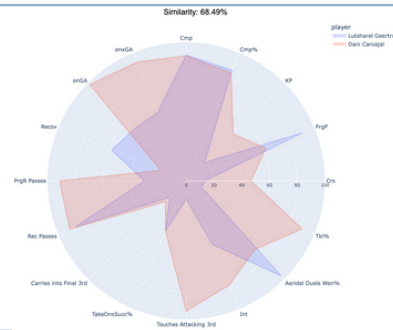
Pedro Carvalho

Club: Estoril Praia
Position: Right-Back
Footed: Right
Height: 176cm, 5'9ft
Weight: 72kg, 159lb
Age: 21
Country: Portugal
Market Value: €275K
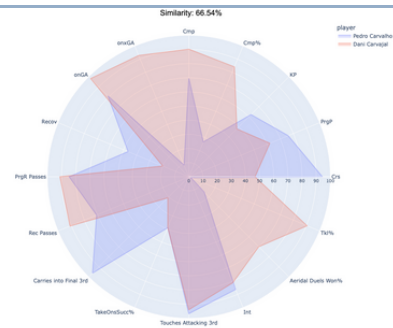
Lucas Rosa

Club: Real Valladolid CF
Position: Right Back
Footed: Right
Height: 176cm, 5'9ft
Weight: 68kg, 150lb
Age: 24
Country: Brazil
Market Value: €2M
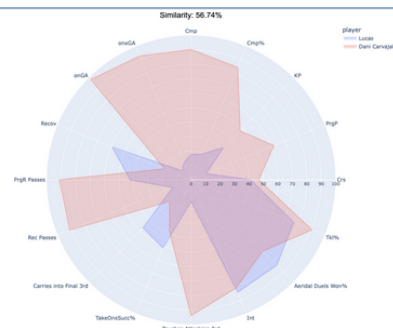
Diogo Dalot

Club: Manchester United FC
Position: Right Back
Footed: Right
Height: 184cm, 6ft
Weight: 76kg, 168lb
Age: 25
Country: Portugal
Market Value: €40M

5 Appearances cont. 2

Raoul Bellanova

Club: Atalanta BC
Position: Right-Back
Footed: Right
Height: 185cm, 6'1ft
Weight: 83kg, 183lb
Age: 24
Country: Italy
Market Value: €22.00M

Neco Williams

Club: Nottingham Forest FC
Position: Right-Back
Footed: Right
Height: 183cm, 6ft
Weight: 76kg, 168lb
Age: 23
Country: Wales
Market Value: €17M

R. Ledezma

Club: PSV Eindhoven
Position: Midfielder/Right-Back
Footed: Right
Height: 168cm, 5'6ft
Weight: 63kg, 141lb
Age: 24
Country: United States
Market Value: €3M

M. Fernandes

Club: FC Porto
Position: Right-Back
Footed: Right
Height: 180cm, 5'11ft
Weight: 73kg, 161lb
Age: 18
Country: Portugal
Market Value: €6M

W. Kamanzi

Club: Toulouse FC
Position: Right-Back
Footed: Right
Height: 177cm, 5'10ft
Weight: 70kg, 154lb
Age: 23
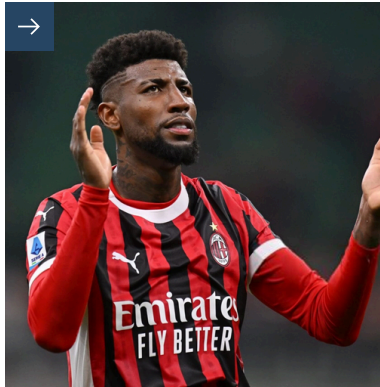**Country:** Norway
Value: €2M

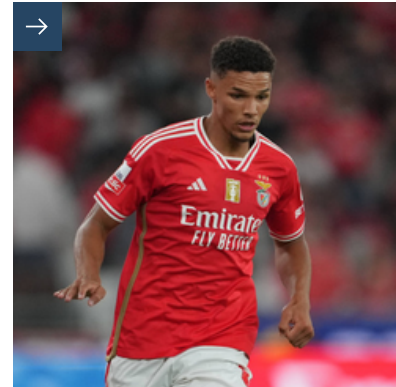# Most Similar Players
According to data
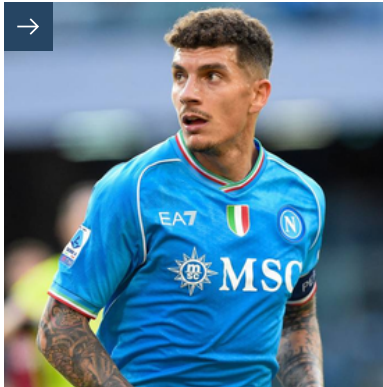
Giovanni Di Lorenzo
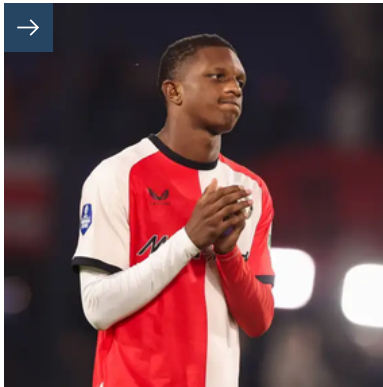Similarity: 82.1%

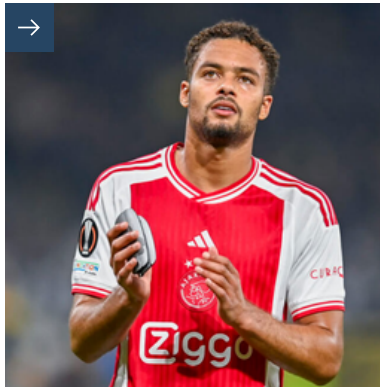### Emerson Royal
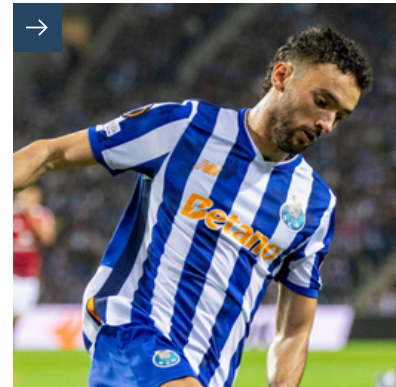Similarity: 80.9%

Alexander Bah
Similarity: 80.3%

Givairo Read
Similarity: 79.6%

Devyne Rensch
Similarity: 79.5%

João Mário Lopes
Similarity: 77.1%

Arnau Martinez and Martim Fernandes could be very interesting due to their high percentiles and young age. Malo Gusto excels in many of the same KPIs as Dani Carvajal; Boyd Reith and Ledezma have very strong percentiles, further scouting would be recommended.

REAL MADRID CF

Juan Martín Correa