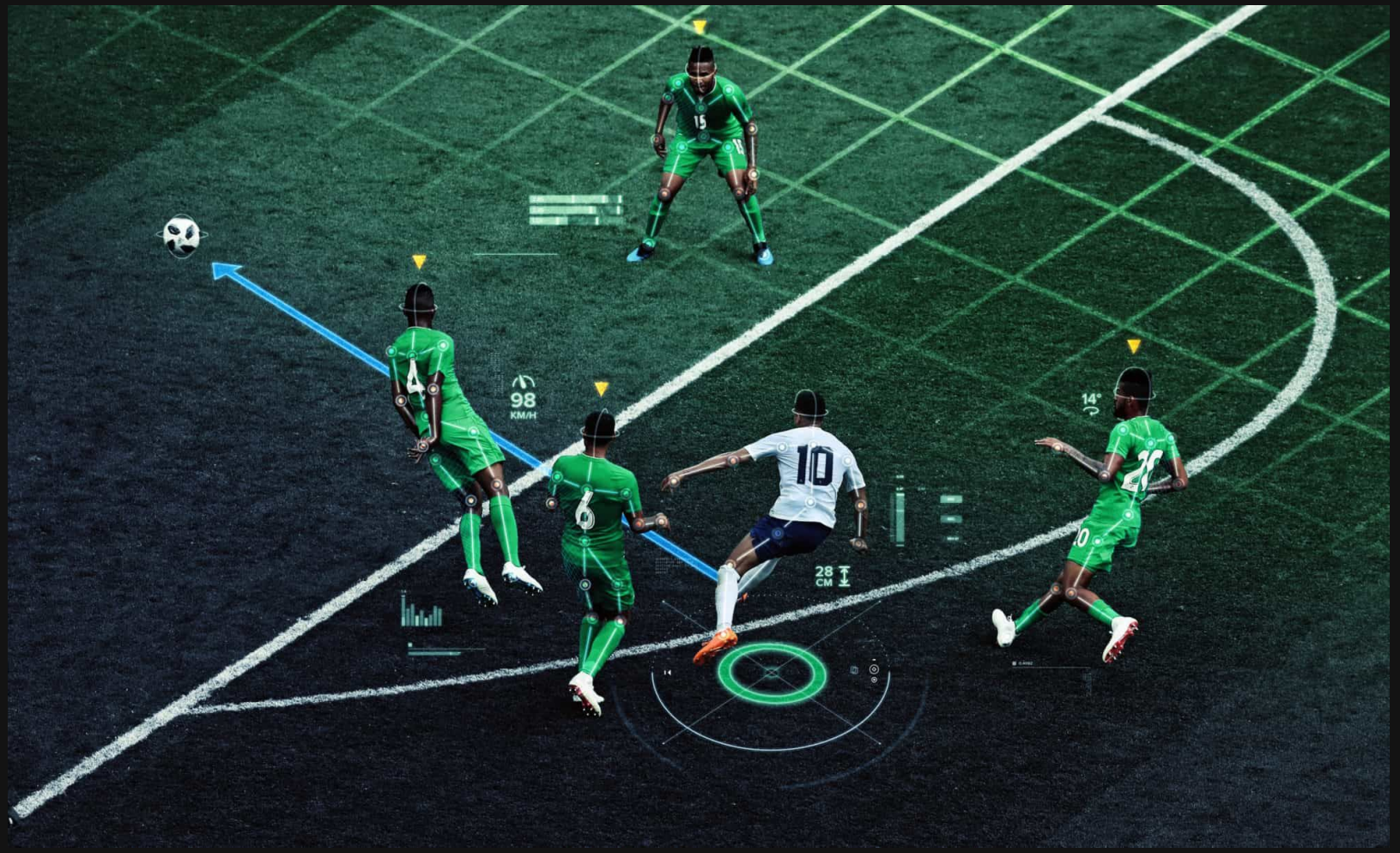
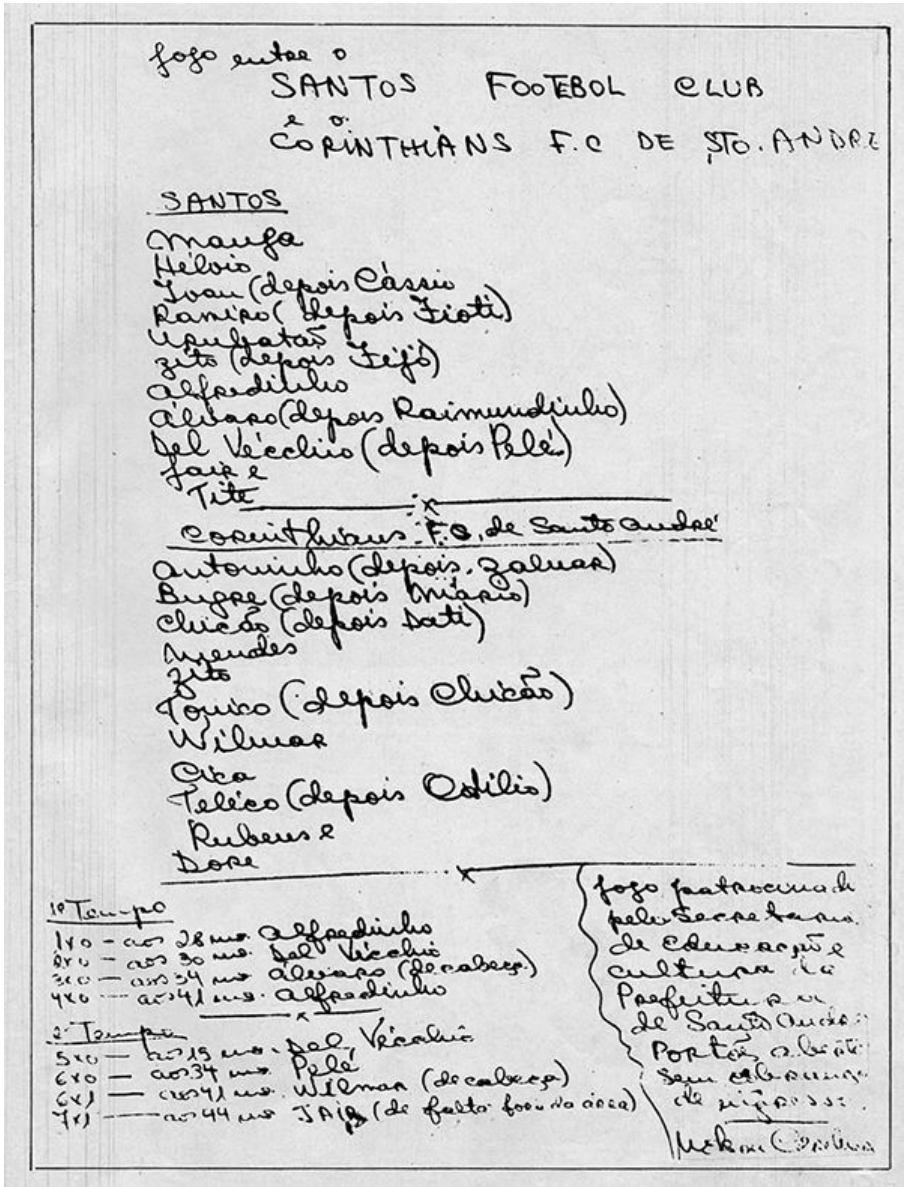
Os Diferentes Tipos de Dados no Futebol: Aplicações e Limitações

Hugo Rios-Neto


98
KM/H
28
CM
14°

Dados de Súmula

Dados de Súmula



Jogo entre o
SANTOS FOOTEBOL CLUB
e o
CORINTHIANS F.C DE STO. ANDRÉ

SANTOS
Manga
Hélvio
Ivan (depois Cássio
Ramiro (depois Fioti)
Lima
Zito (depois Feijó)
Alfredinho
Alcindo (depois Raimundinho)
Del Vecchio (depois Pelé)
Jair e
Tite

Corinthians F.C. de Santo André
Antoninho (depois Zaluar)
Burgos (depois Mário)
Chicão (depois Dati)
Arlindo
Zito
Tonico (depois Chicão)
Wilmar
Cica
Telêco (depois Odilio)
Rubens e
Dore

1º Tempo
1x0 - aos 28 min. Alfredinho
2x0 - aos 30 min. Del Vecchio
3x0 - aos 34 min. Alcindo (de cabeça)
4x0 - aos 41 min. Alfredinho

2º Tempo
5x0 - aos 19 min. Del Vecchio
6x0 - aos 34 min. Pelé
6x1 - aos 41 min. Wilmar (de cabeça)
7x1 - aos 44 min. Jair (de falta fora da área)

Jogo patrocinado pela Secretaria de Educação e Cultura da Prefeitura de Santo André. Portões abertos às 14 horas. Preços: ...

Dados de Súmula

Man City		Liverpool
	1 - 1	
	(1 - 1)	

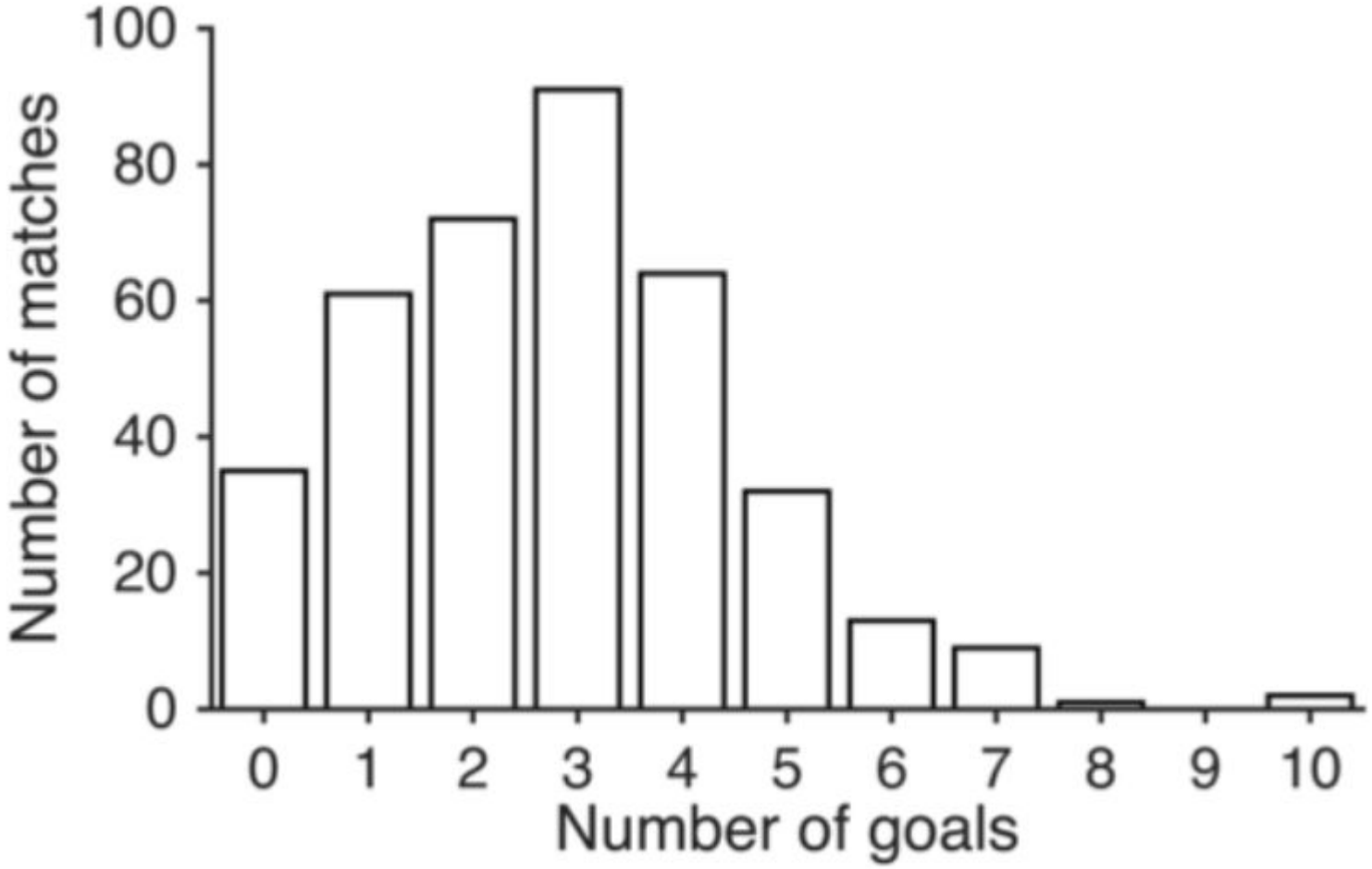
F2°T 1 - 1

90' +3	Kyle Walker Falta	
	Tempo adicional 4'	
79'	Aymeric Laporte Falta	
	Fora: T. Alexander-Arnold Entra: J. Milner	63'
61'	Entra: B. Silva Fora: F. Torres	
61'	Raheem Sterling Falta	
	Fora: R. Firmino Entra: X. Shaqiri	59'
	Falta Joël Matip	46'

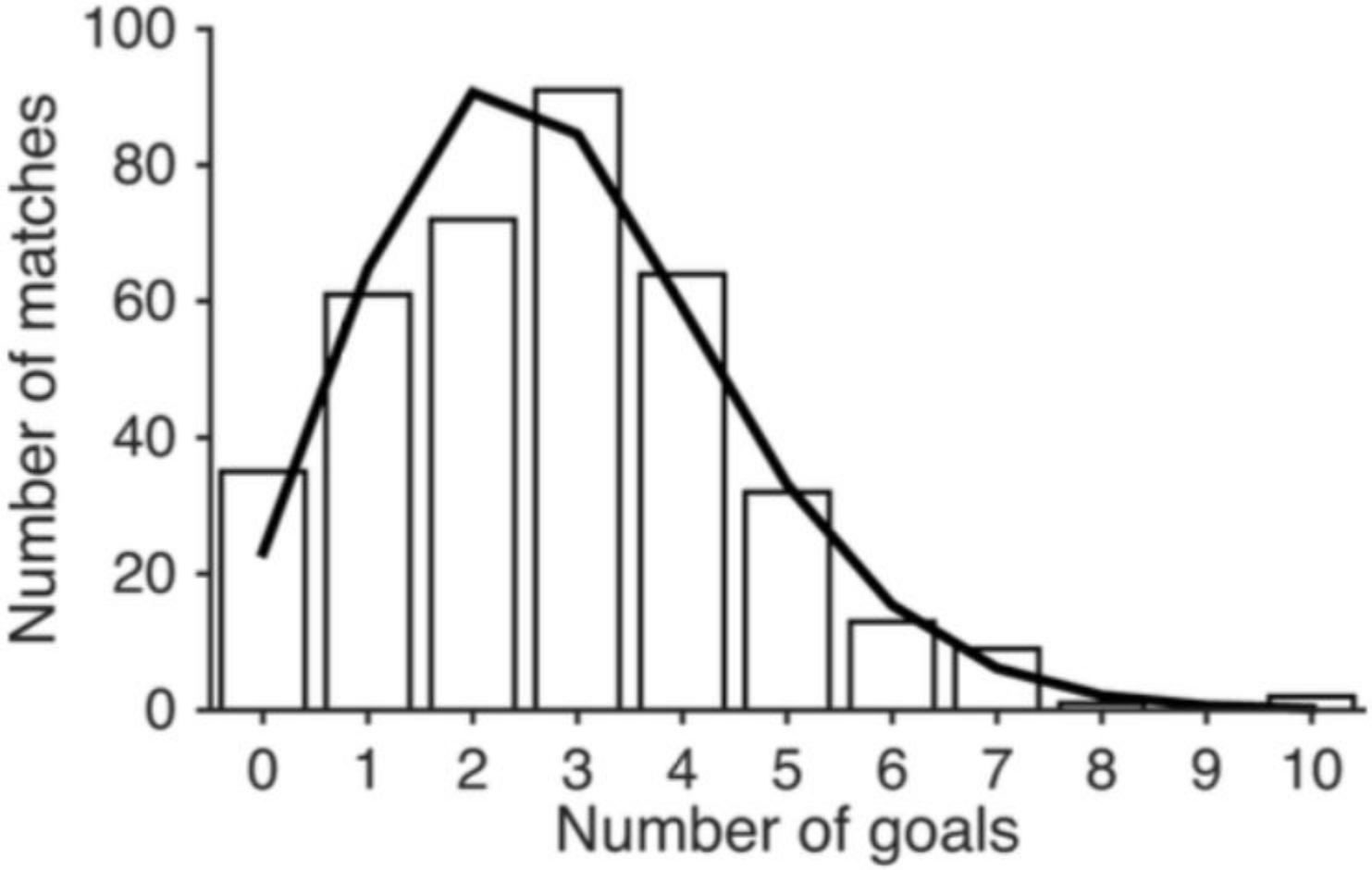
INT 1 - 1

	Tempo adicional 3'	
42'	Kevin De Bruyne Fora do alvo	
40'	Pênalti dado K. De Bruyne	
31'	**1 - 1** Gabriel Jesus Assistência: K. De Bruyne	
	Mohamed Salah **0 - 1**	13'

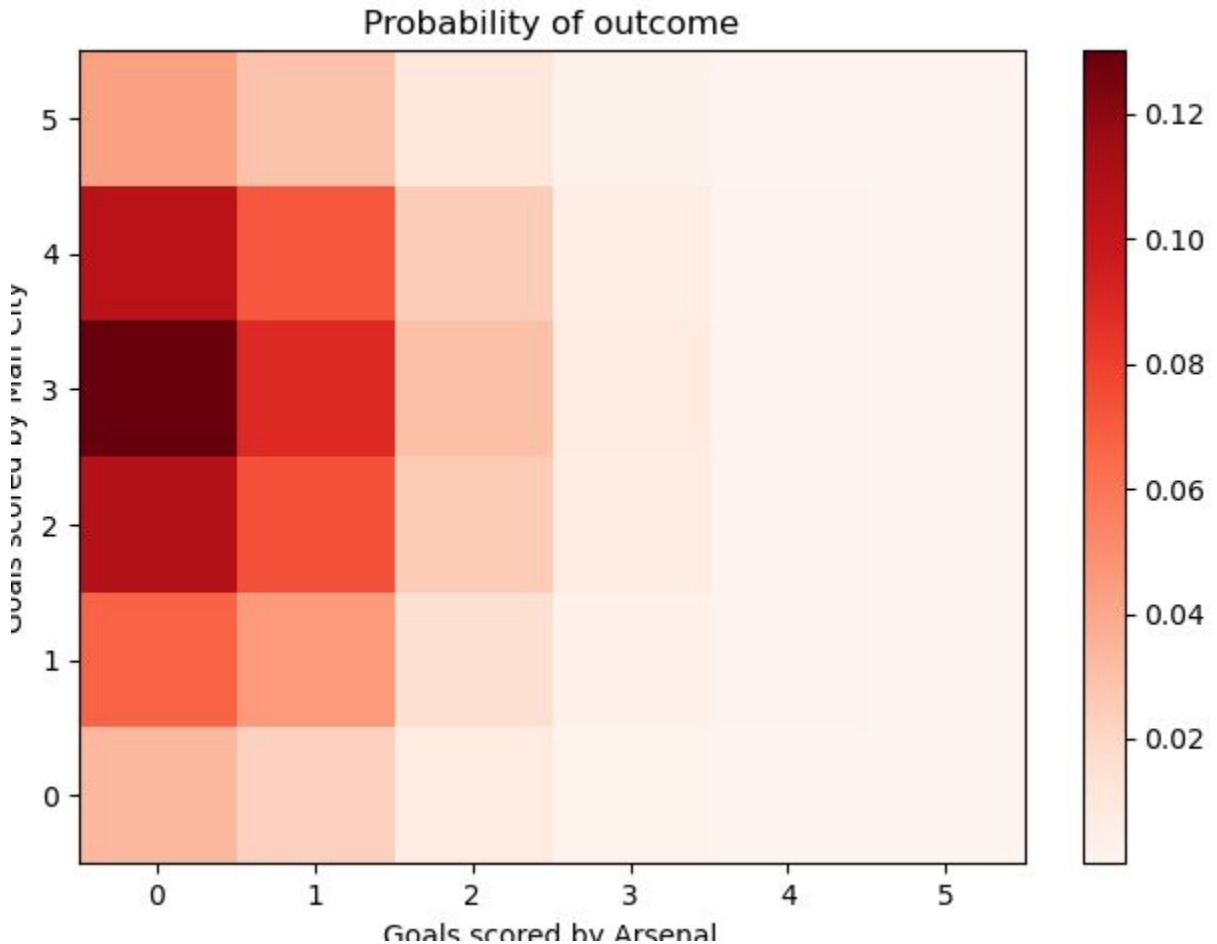
Dados de Súmula



Dados de Súmula



Dados de Súmula



Dados de Súmula

Predicted Final League Table
English Premier League | 2020/2021

STATS PERFORM

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Pts.
Manchester City	99.9%	0.1%																			90
Manchester United	0.1%	52.5%	22.0%	12.7%	6.5%	3.6%	1.6%	0.7%	0.2%												71
Liverpool		19.2%	28.0%	21.5%	14.2%	8.9%	4.4%	2.2%	1.1%	0.3%	0.1%										68
Leicester City		15.9%	22.6%	20.7%	16.2%	11.8%	7.1%	3.7%	1.5%	0.4%											68
Chelsea		6.6%	13.3%	17.1%	18.9%	16.1%	12.2%	8.6%	4.7%	1.9%	0.6%	0.1%									65
Tottenham Hotspur		3.5%	7.4%	12.2%	16.4%	18.2%	15.2%	12.3%	8.1%	4.8%	1.6%	0.4%	0.1%								63
West Ham United		1.2%	3.0%	6.4%	10.2%	14.0%	18.2%	18.2%	14.6%	9.1%	3.8%	1.0%	0.2%								61
Everton		0.6%	2.3%	5.1%	8.9%	12.6%	16.6%	18.2%	17.0%	12.2%	5.0%	1.2%	0.2%								60
Arsenal		0.1%	0.8%	2.6%	5.3%	8.7%	13.7%	17.2%	21.2%	18.5%	7.8%	3.1%	0.8%	0.2%							58
Aston Villa		0.2%	0.6%	1.6%	3.2%	5.5%	9.1%	14.4%	19.4%	24.9%	12.7%	6.0%	1.8%	0.4%							57
Leeds United				0.1%	0.1%	0.4%	1.1%	2.4%	6.2%	13.1%	28.1%	26.2%	13.7%	5.9%	2.1%	0.6%	0.1%				51
Wolves						0.3%	0.7%	1.9%	4.9%	11.6%	25.9%	28.3%	15.7%	7.3%	2.5%	0.6%	0.2%				50
Crystal Palace								0.1%	0.5%	1.5%	6.3%	13.7%	24.7%	25.2%	17.0%	8.1%	2.6%	0.3%			45
Southampton								0.1%	0.3%	1.2%	6.3%	13.4%	24.1%	23.5%	16.2%	10.2%	4.0%	0.5%			44
Burnley									0.1%	0.3%	1.2%	3.7%	9.6%	17.4%	25.4%	24.6%	13.9%	3.7%	0.2%		41
Newcastle United										0.1%	0.5%	2.2%	6.8%	13.1%	21.9%	26.4%	22.3%	5.9%	0.6%		39
Brighton											0.1%	0.6%	2.2%	6.2%	13.1%	24.2%	39.2%	12.9%	1.3%	0.1%	38
Fulham													0.1%	0.6%	1.7%	5.0%	15.9%	63.4%	11.8%	1.6%	32
West Brom																0.2%	1.4%	9.7%	60.0%	28.7%	26
Sheffield United																0.1%	0.5%	3.6%	26.1%	69.6%	23

Dados de Súmula

Sea	Lge	Date	HT	AT	HS	AS	GD	WDL
21-22	ENG1	22/05/2022	Arsenal	Everton	5	1	4	W
21-22	ENG1	22/05/2022	Brentford	Leeds United	1	2	-1	L
21-22	ENG1	22/05/2022	Brighton	West Ham United	3	1	2	W
21-22	ENG1	22/05/2022	Burnley	Newcastle United	1	2	-1	L
21-22	ENG1	22/05/2022	Chelsea	Watford	2	1	1	W
21-22	ENG1	22/05/2022	Crystal Palace	Manchester United	1	0	1	W
21-22	ENG1	22/05/2022	Leicester City	Southampton	4	1	3	W
21-22	ENG1	22/05/2022	Liverpool	Wolverhampton	3	1	2	W
21-22	ENG1	22/05/2022	Manchester City	Aston Villa	3	2	1	W
21-22	ENG1	22/05/2022	Norwich City	Tottenham Hotspur	0	5	-5	L

Key:	
Lge:	Code of soccer league/division
Sea:	Season in which league matches are played
Date:	Date on which match is played
HT/AT	Names of home and away teams
HS:	Goals scored by HOME team
AS:	Goals scored by AWAY team
GD:	Goal difference: GD = HS - AS
WDL:	Trend outcome: W=Win by HOME team. D=Draw. L=Win by AWAY team

Estatísticas Agregadas

Estatísticas Agregadas

Man City		Liverpool
	1 - 1 (1 - 1)	

54%	Posse de bola	46%
7	Finalizações	10
2	Finalizações no gol	3
4	Finalizações para fora	4
1	Chutes bloqueados	3
1	Escanteios	2
2	Impedimentos	5
19	Faltas	11
3	Cartões amarelos	1
2	Grandes chances de gol	1
2	Grandes chances perdidas	0
4	Finalizações de dentro da área	5
3	Finalizações de fora da área	5

Estatísticas Agregadas

		Goals	Assists	Tackles	Acc. passes	Duels (won)	Ground duels (won)	Aerial duels (won)	Minutes played	Position	Rating
	İlkay Gündoğan	0	0	2	60/70 (86%)	4 (4)	3 (3)	1 (1)	90'	M	7.2
	João Cancelo	0	0	4	45/56 (80%)	11 (5)	10 (4)	1 (1)	90'	D	7.1
	Rúben Dias	0	0	3	74/79 (94%)	8 (5)	6 (3)	2 (2)	90'	D	6.9
	Gabriel Jesus	1	0	0	18/23 (78%)	8 (2)	8 (2)	0 (0)	90'	F	6.8
	Bernardo Silva	0	0	2	16/17 (94%)	5 (2)	3 (2)	2 (0)	29'	M	6.7
	Aymeric Laporte	0	0	0	74/85 (87%)	3 (2)	1 (0)	2 (2)	90'	D	6.6
	Ederson	0	0	1	28/32 (88%)	1 (1)	1 (1)	0 (0)	90'	G	6.6
	Kevin De Bruyne	0	1	0	22/29 (76%)	4 (2)	4 (2)	0 (0)	90'	M	6.6
	Ferran Torres	0	0	0	12/16 (75%)	5 (2)	2 (0)	3 (2)	61'	M	6.4
	Raheem Sterling	0	0	0	26/32 (81%)	10 (4)	10 (4)	0 (0)	90'	M	6.3
	Rodri	0	0	0	56/67 (84%)	6 (1)	6 (1)	0 (0)	90'	M	6.1
	Kyle Walker	0	0	0	41/49 (84%)	9 (2)	9 (2)	0 (0)	90'	D	5.9

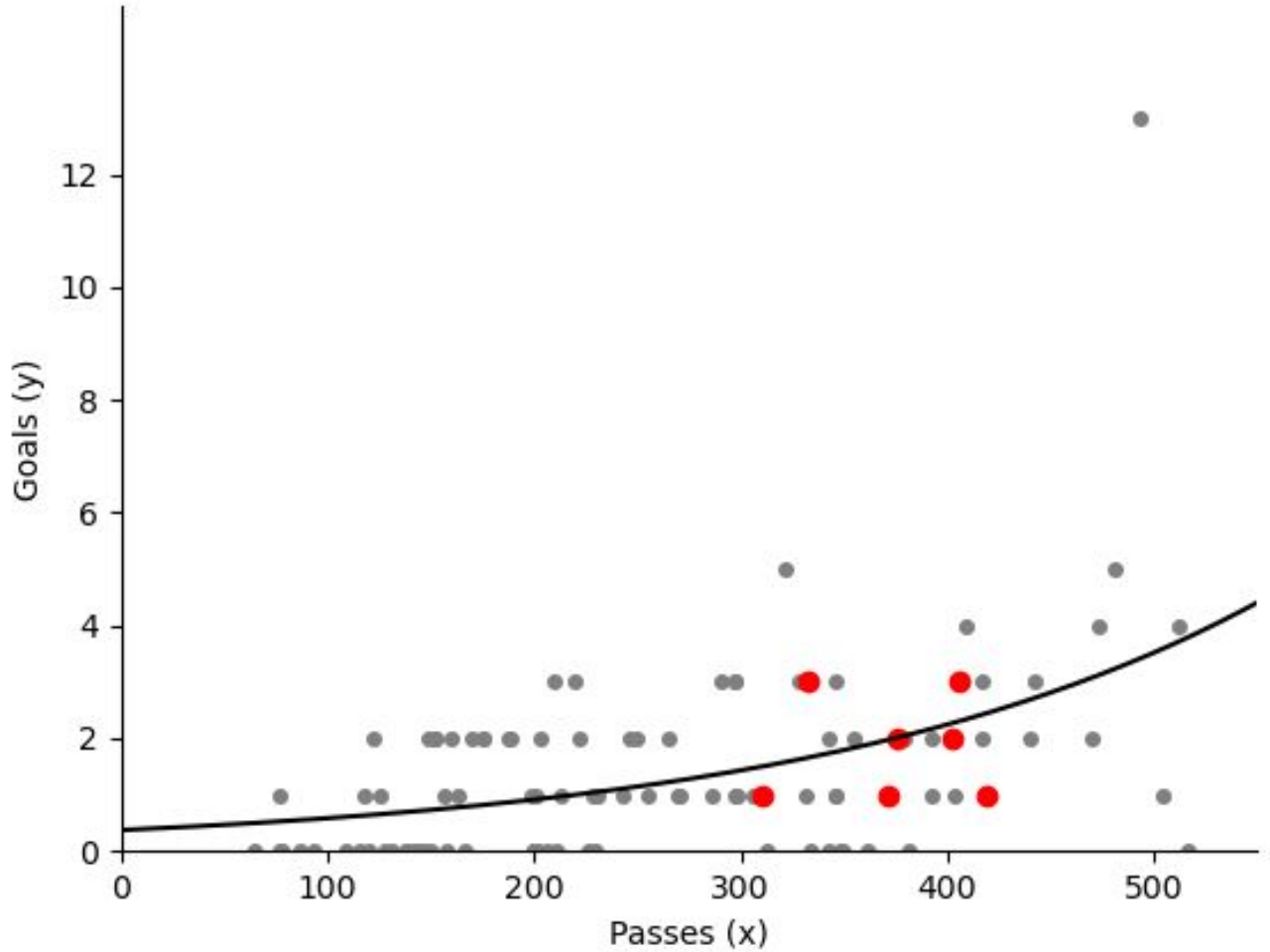
Estatísticas Agregadas

		Goals	Assists	Tackles	Acc. passes	Duels (won)	Ground duels (won)	Aerial duels (won)	Minutes played	Position	Rating
	Sadio Mané	0	0	1	17/26 (65%)	16 (10)	14 (10)	2 (0)	90'	M	7.2
	Mohamed Salah	1	0	0	17/20 (85%)	8 (2)	7 (2)	1 (0)	90'	F	7.0
	Trent Alexander-Arnold	0	0	2	16/24 (67%)	2 (2)	2 (2)	0 (0)	63'	D	7.0
	Georginio Wijnaldum	0	0	1	50/56 (89%)	5 (5)	4 (4)	1 (1)	90'	M	6.9
	James Milner	0	0	3	11/15 (73%)	3 (3)	3 (3)	0 (0)	27'	M	6.9
	Andrew Robertson	0	0	1	35/44 (80%)	5 (4)	4 (3)	1 (1)	90'	D	6.8
	Joël Matip	0	0	3	49/61 (80%)	8 (6)	7 (6)	1 (0)	90'	D	6.8
	Jordan Henderson	0	0	1	37/42 (88%)	2 (1)	2 (1)	0 (0)	90'	M	6.8
	Xherdan Shaqiri	0	0	1	11/15 (73%)	5 (3)	4 (3)	1 (0)	31'	M	6.8
	Roberto Firmino	0	0	0	16/20 (80%)	4 (2)	2 (1)	2 (1)	59'	M	6.5
	Alisson	0	0	0	33/44 (75%)	0 (0)	0 (0)	0 (0)	90'	G	6.3
	Diogo Jota	0	0	0	22/24 (92%)	13 (3)	11 (3)	2 (0)	90'	M	6.2
	Joe Gomez	0	0	0	61/68 (90%)	3 (1)	3 (1)	0 (0)	90'	D	6.2

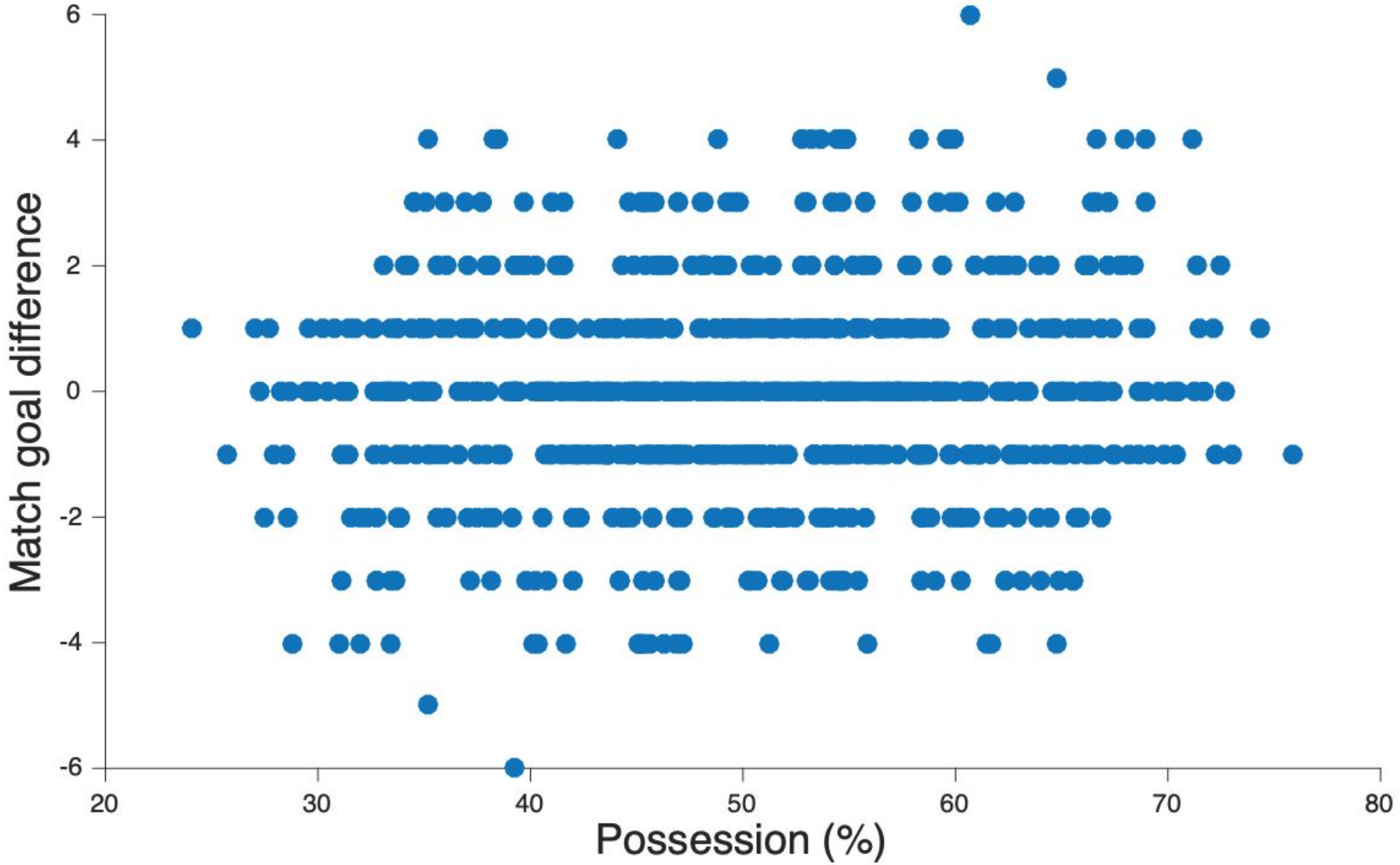
Estatísticas Agregadas

							Playing Time				Performance							
Rk	Player	Nation	Pos	Squad	Age	Born	MP	Starts	Min	90s	Gls	Ast	G+A ▼	G-PK	PK	PKatt	CrdY	CrdR
1	Harry Kane	ENG	FW	Tottenham	27	1993	35	35	3,082	34.2	23	14	37	19	4	4	1	0
2	Bruno Fernandes	POR	MF	Manchester Utd	25	1994	37	35	3,099	34.4	18	12	30	9	9	10	6	0
3	Son Heung-min	KOR	FW	Tottenham	28	1992	37	36	3,114	34.6	17	10	27	16	1	1	0	0
4	Mohamed Salah	EGY	FW	Liverpool	28	1992	37	34	3,078	34.2	22	5	27	16	6	6	0	0
5	Patrick Bamford	ENG	FW	Leeds United	26	1993	38	37	3,050	33.9	17	7	24	15	2	2	3	0
6	Jamie Vardy	ENG	FW	Leicester City	33	1987	34	31	2,840	31.6	15	9	24	7	8	9	1	0
7	Marcus Rashford	ENG	FW	Manchester Utd	22	1997	37	33	2,920	32.4	11	9	20	11	0	0	4	0
8	Ollie Watkins	ENG	FW	Aston Villa	24	1995	37	37	3,328	37.0	14	5	19	13	1	2	4	1
9	Kevin De Bruyne	BEL	MF	Manchester City	29	1991	25	23	1,997	22.2	6	12	18	4	2	3	1	0
10	Sadio Mané	SEN	FW	Liverpool	28	1992	35	31	2,810	31.2	11	7	18	11	0	0	3	0
11	Matheus Pereira	POR	MF,FW	West Brom	24	1996	33	30	2,577	28.6	11	6	17	7	4	4	2	1
12	Raheem Sterling	ENG	FW	Manchester City	25	1994	31	28	2,536	28.2	10	7	17	10	0	1	4	0
13	Callum Wilson	ENG	FW	Newcastle Utd	28	1992	26	23	2,084	23.2	12	5	17	8	4	4	2	0
14	Dominic Calvert-Lewin	ENG	FW	Everton	23	1997	33	32	2,871	31.9	16	0	16	16	0	0	3	0
15	Roberto Firmino	BRA	FW	Liverpool	28	1991	36	33	2,838	31.5	9	7	16	9	0	0	2	0

Estatísticas Agregadas



Estatísticas Agregadas



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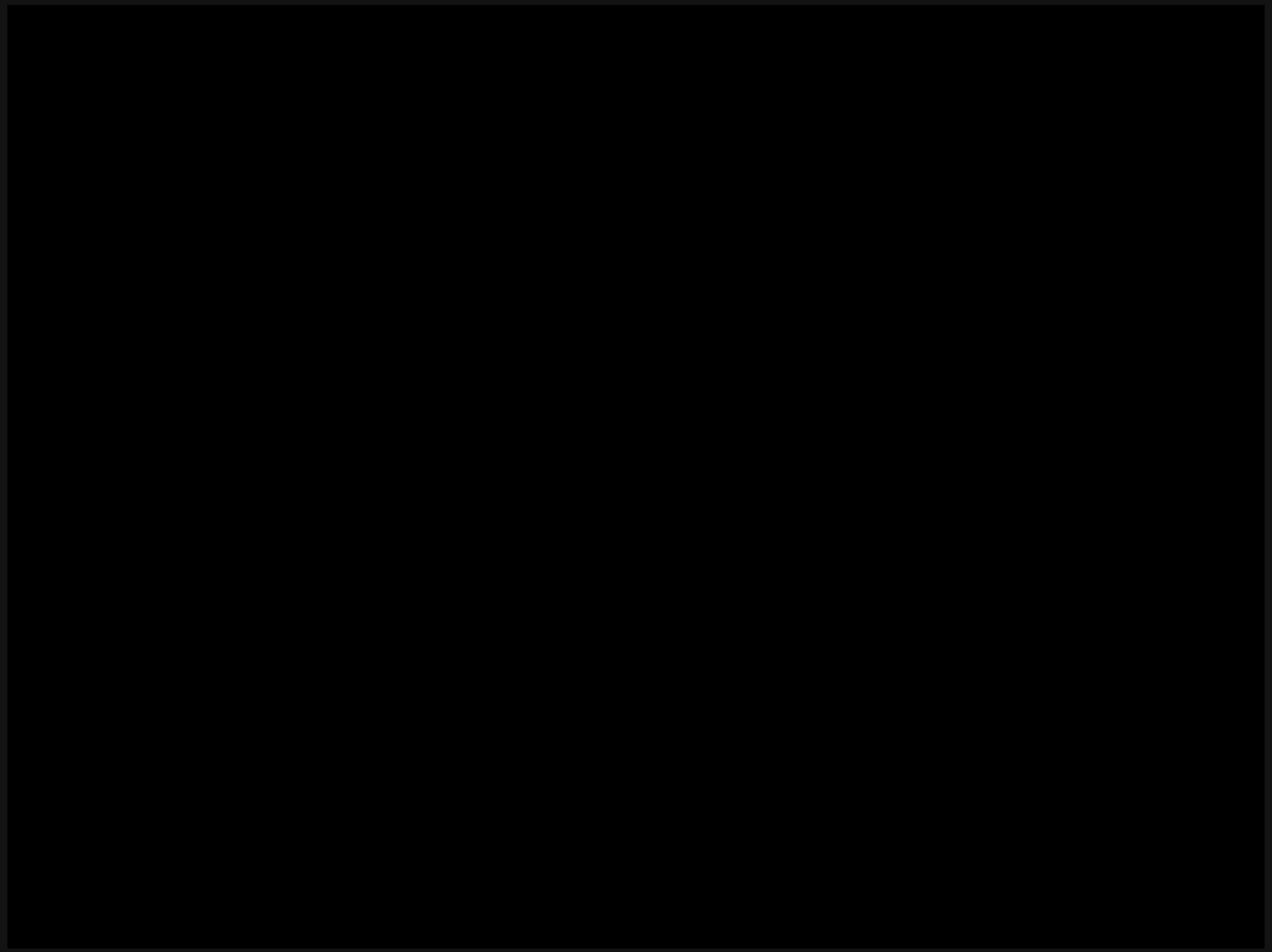

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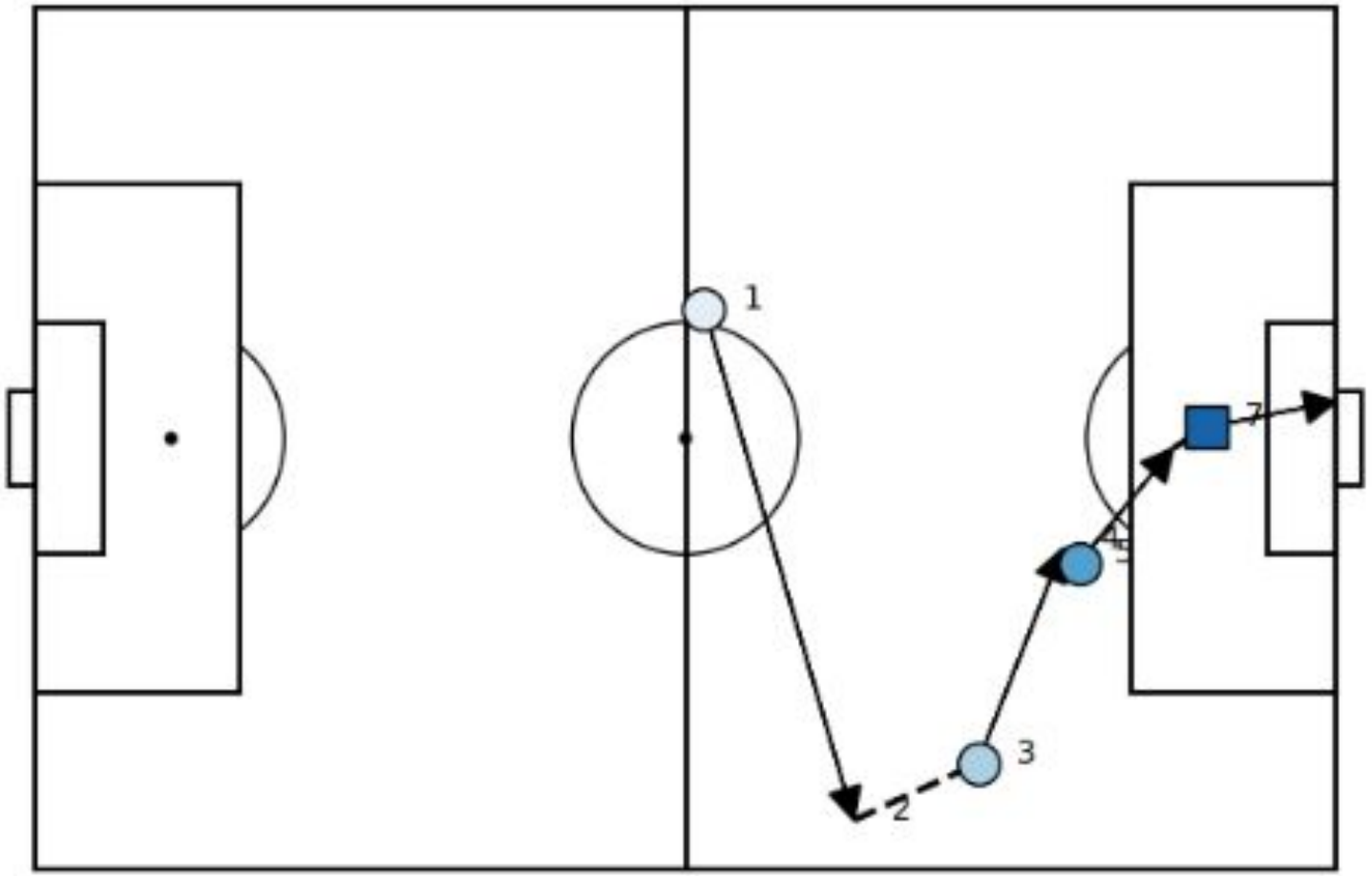

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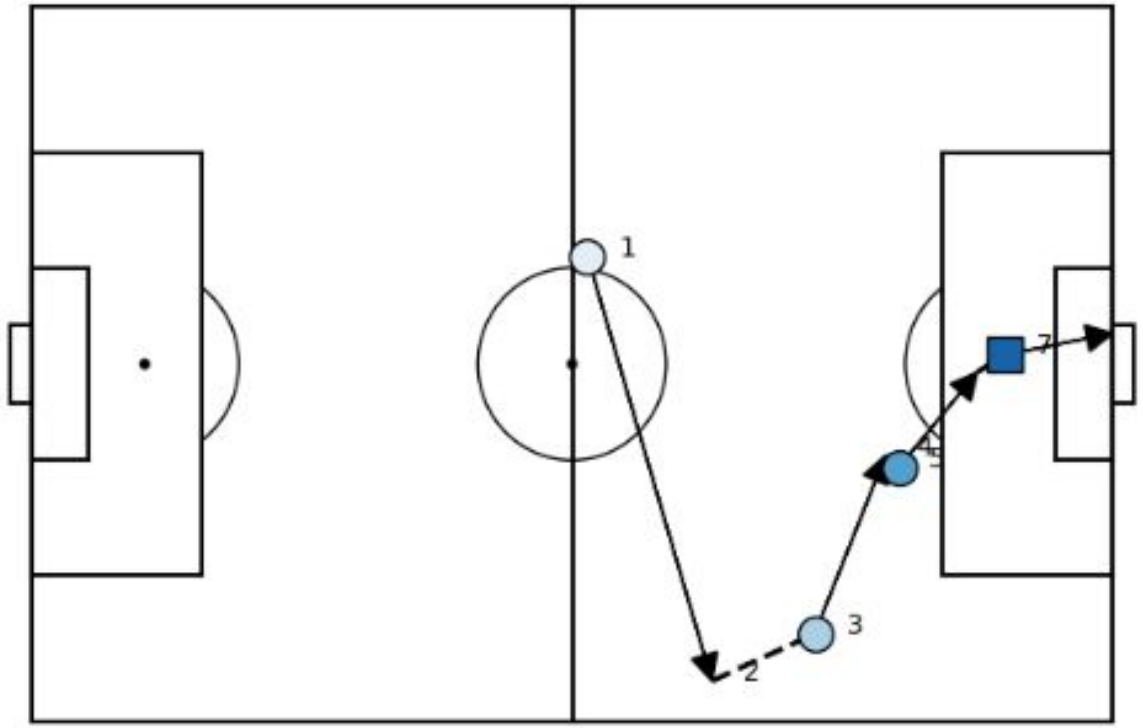
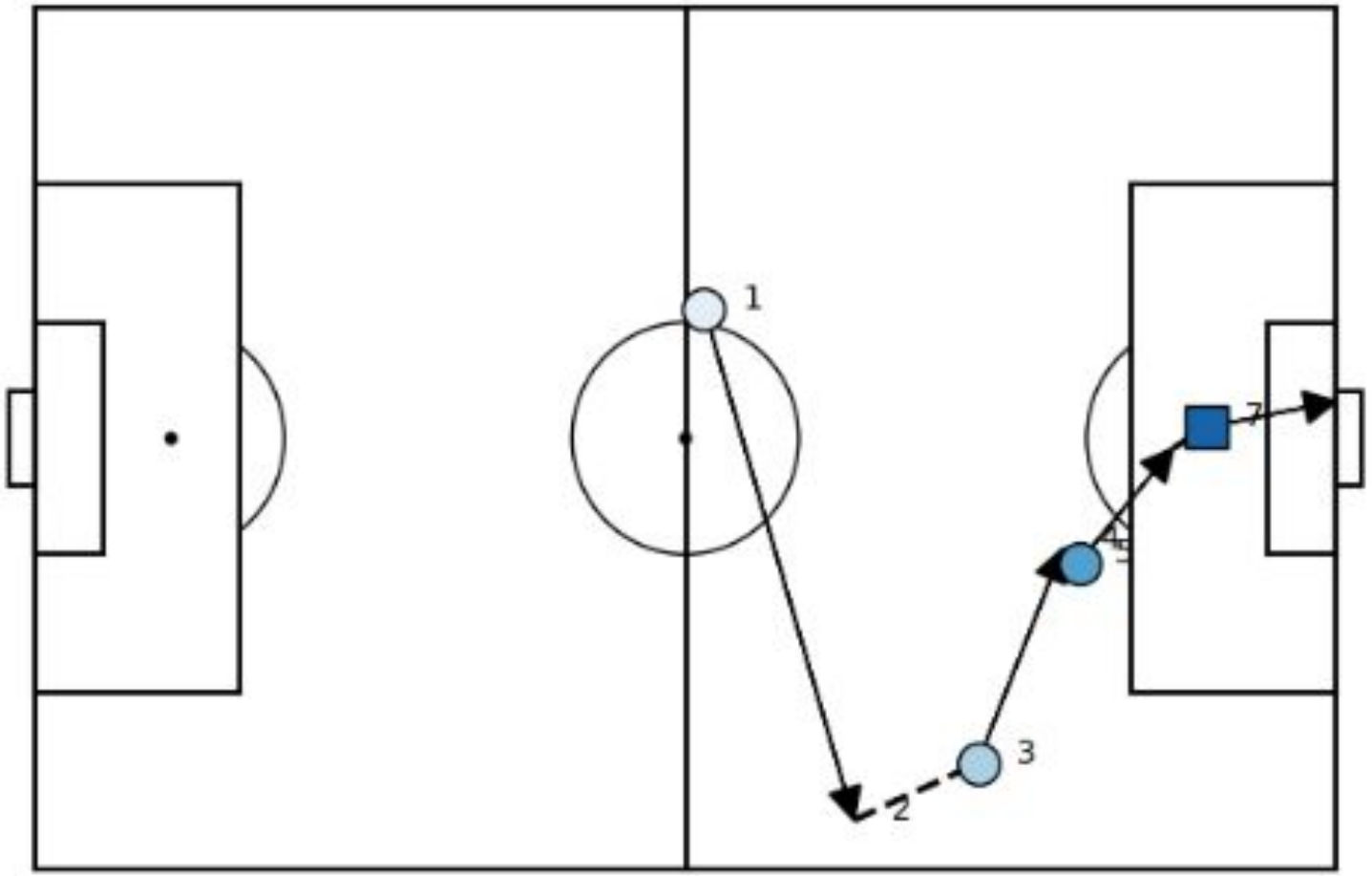


	time_seconds	type	player	team
1	1835.0	pass	Rodrigo Hernández Cascante	Manchester City
2	1838.0	dribble	Kyle Walker	Manchester City
3	1840.0	pass	Kyle Walker	Manchester City
4	1841.0	dribble	Kevin De Bruyne	Manchester City
5	1842.0	pass	Kevin De Bruyne	Manchester City
6	1843.0	dribble	Gabriel Fernando de Jesus	Manchester City
7	1845.0	shot	Gabriel Fernando de Jesus	Manchester City

Event Data

time_seconds	team	player	type	result	bodypart	start_x	start_y	end_x	end_y
1835.00000	Manchester City	Rodrigo Hernández Cascante	pass	success	foot	54.00000	44.24304	66.08824	3.87342
1838.00000	Manchester City	Kyle Walker	dribble	success	foot	66.08824	3.87342	76.05882	8.34937
1840.00000	Manchester City	Kyle Walker	pass	success	foot	76.05882	8.34937	82.94118	25.30633
1841.00000	Manchester City	Kevin De Bruyne	dribble	success	foot	82.94118	25.30633	84.17647	24.10127
1842.00000	Manchester City	Kevin De Bruyne	pass	success	foot	84.17647	24.10127	91.85294	33.22532
1843.00000	Manchester City	Gabriel Fernando de Jesus	dribble	success	foot	91.85294	33.22532	94.50000	34.86076
1843.00000	Liverpool	Trent Alexander-Arnold	pressure	success	foot	12.08824	34.25823	12.08824	34.25823
1844.00000	Liverpool	Joël Andre Job Matip	pressure	success	foot	12.17647	37.87342	12.17647	37.87342
1845.00000	Manchester City	Gabriel Fernando de Jesus	shot	success	foot	94.50000	34.86076	105.00000	36.92658

Event Data



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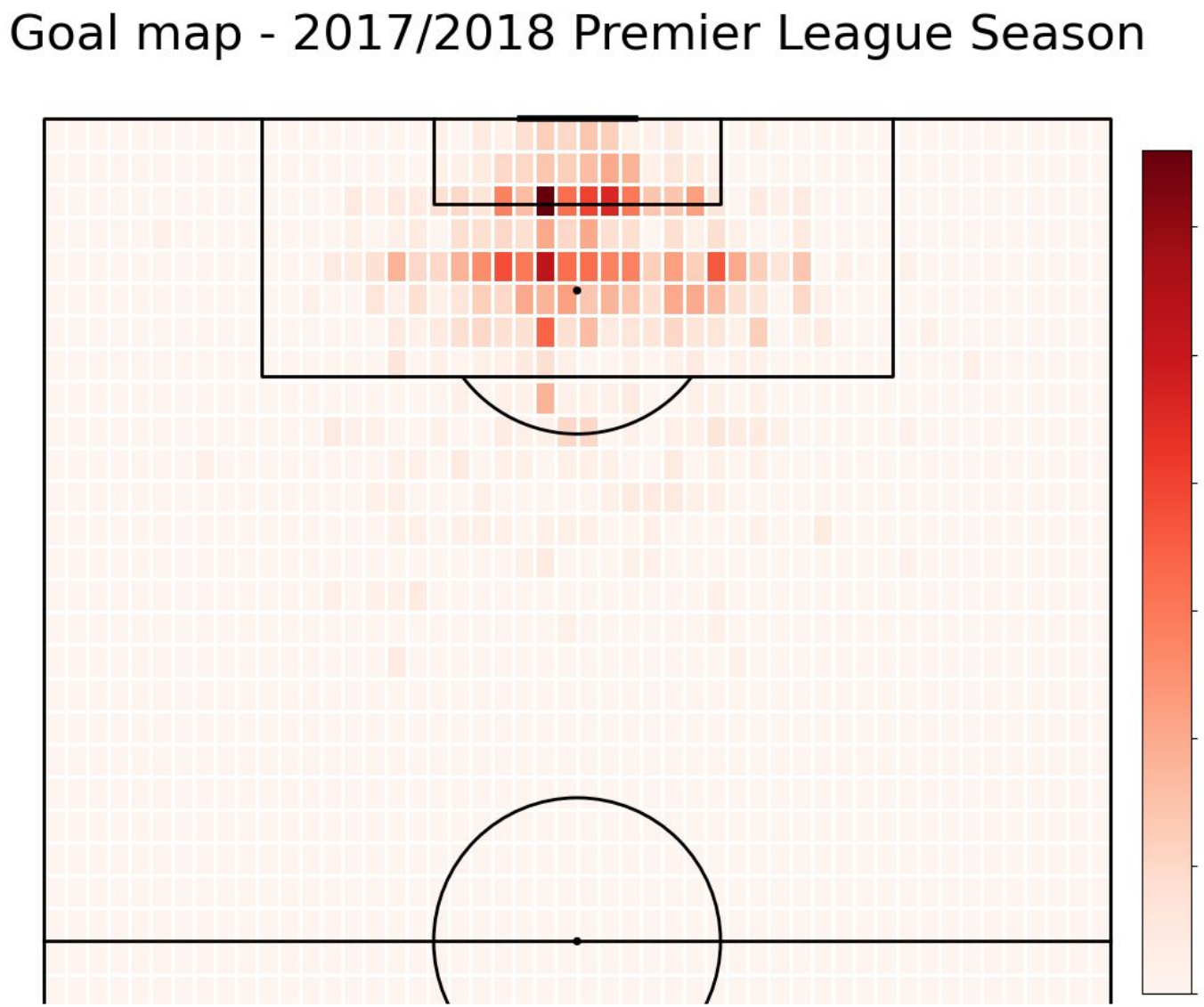

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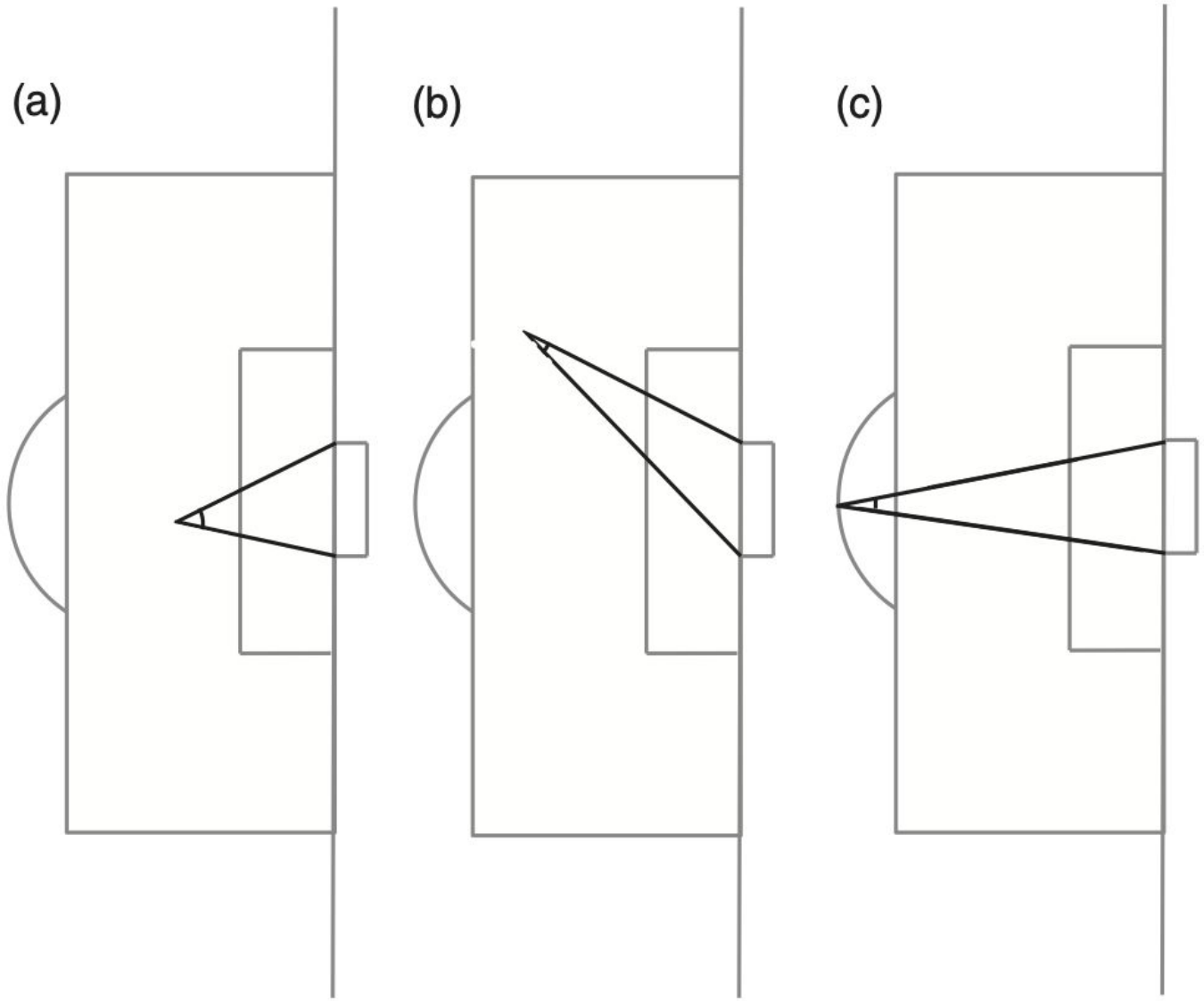
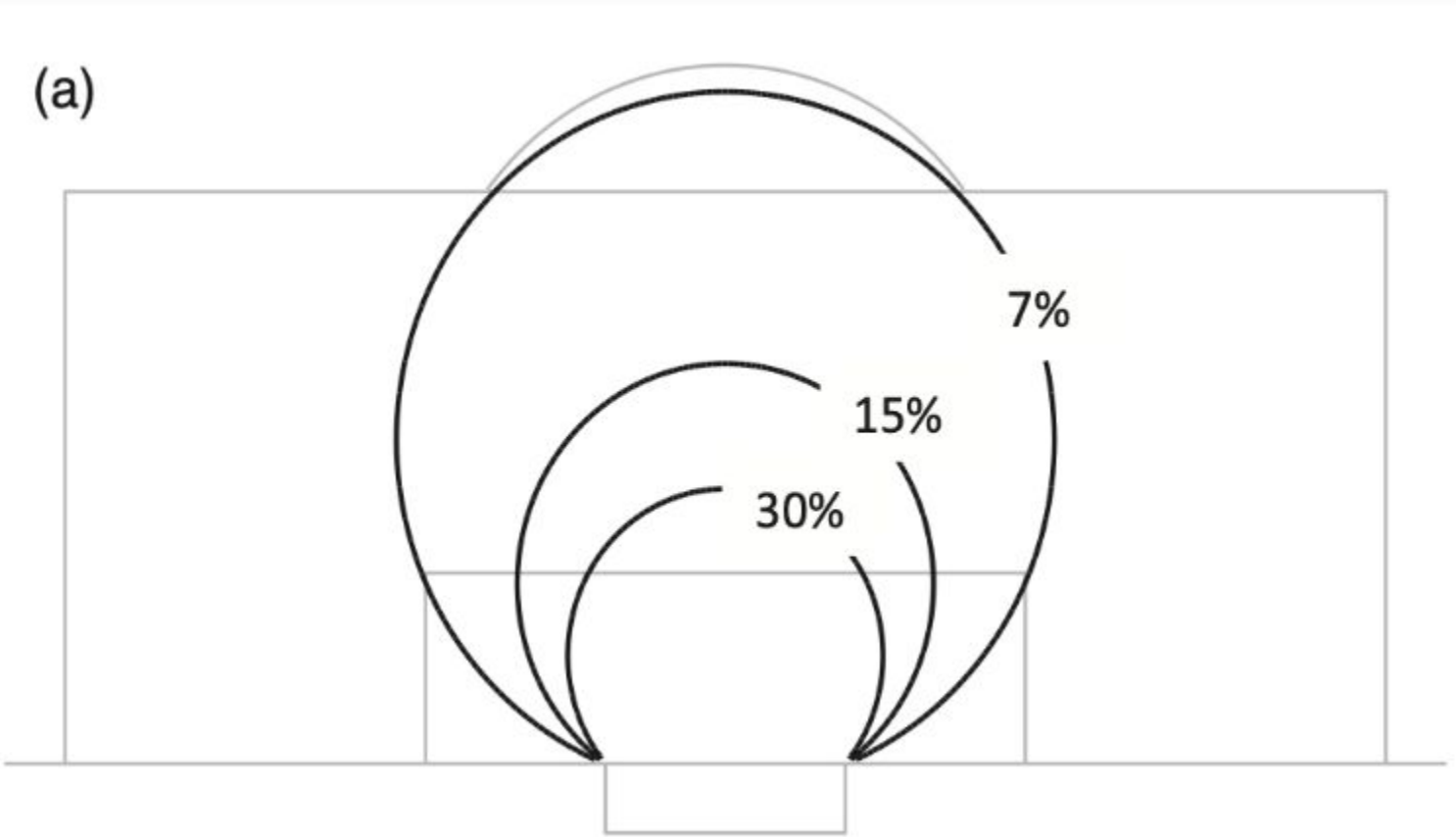


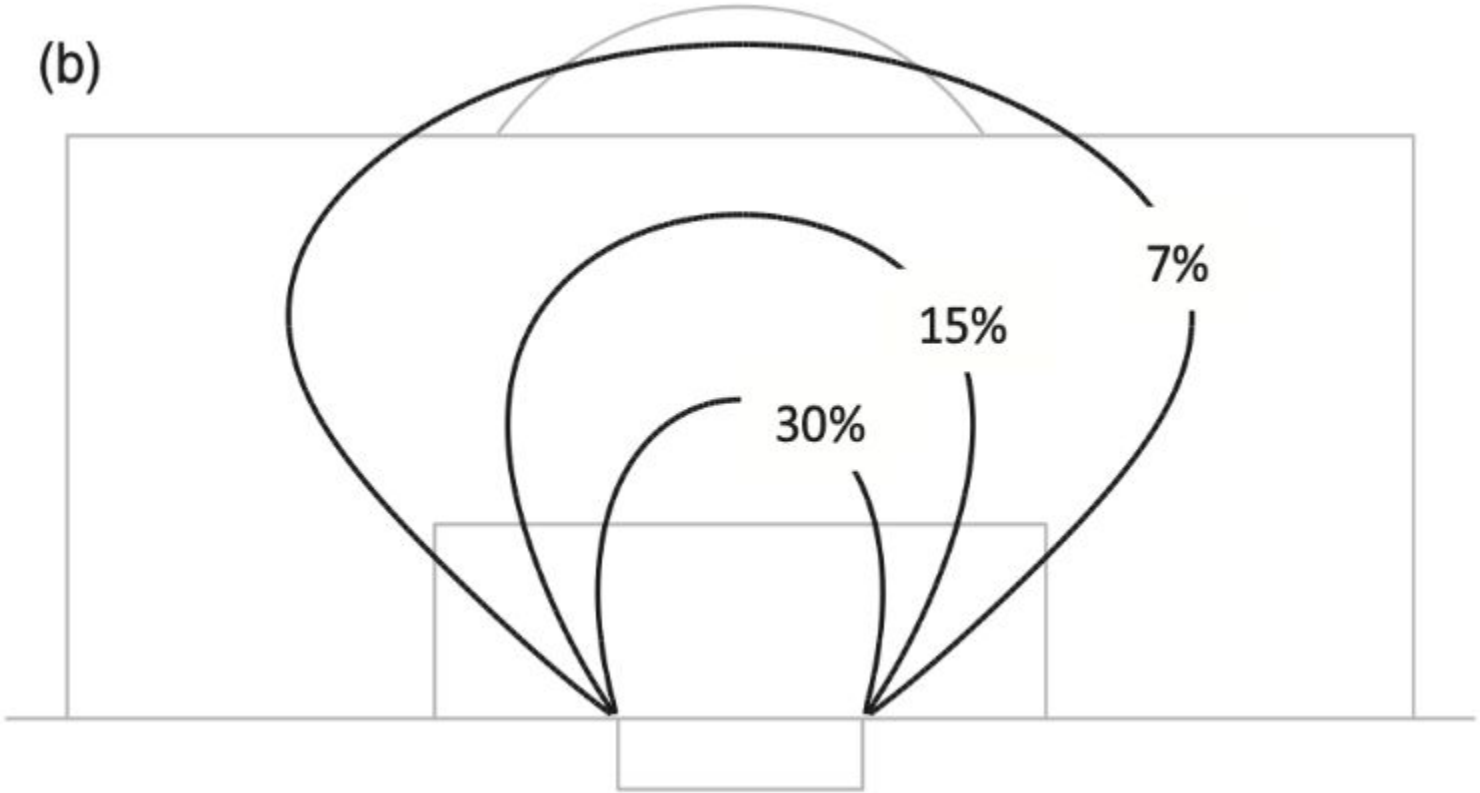
Event Data

$$p(\text{Goal}) = \frac{1}{1 + \exp(-(\beta_0 + \beta_1 \text{Angle}))}$$



Event Data

$$p(\text{Goal}) = \frac{1}{1 + \exp(\beta_0 + \beta_1 \text{Angle} + \beta_2 \text{Distance} + \beta_3 \text{Angle} \cdot \text{Distance} + \beta_4 \text{Distance}^2)}$$



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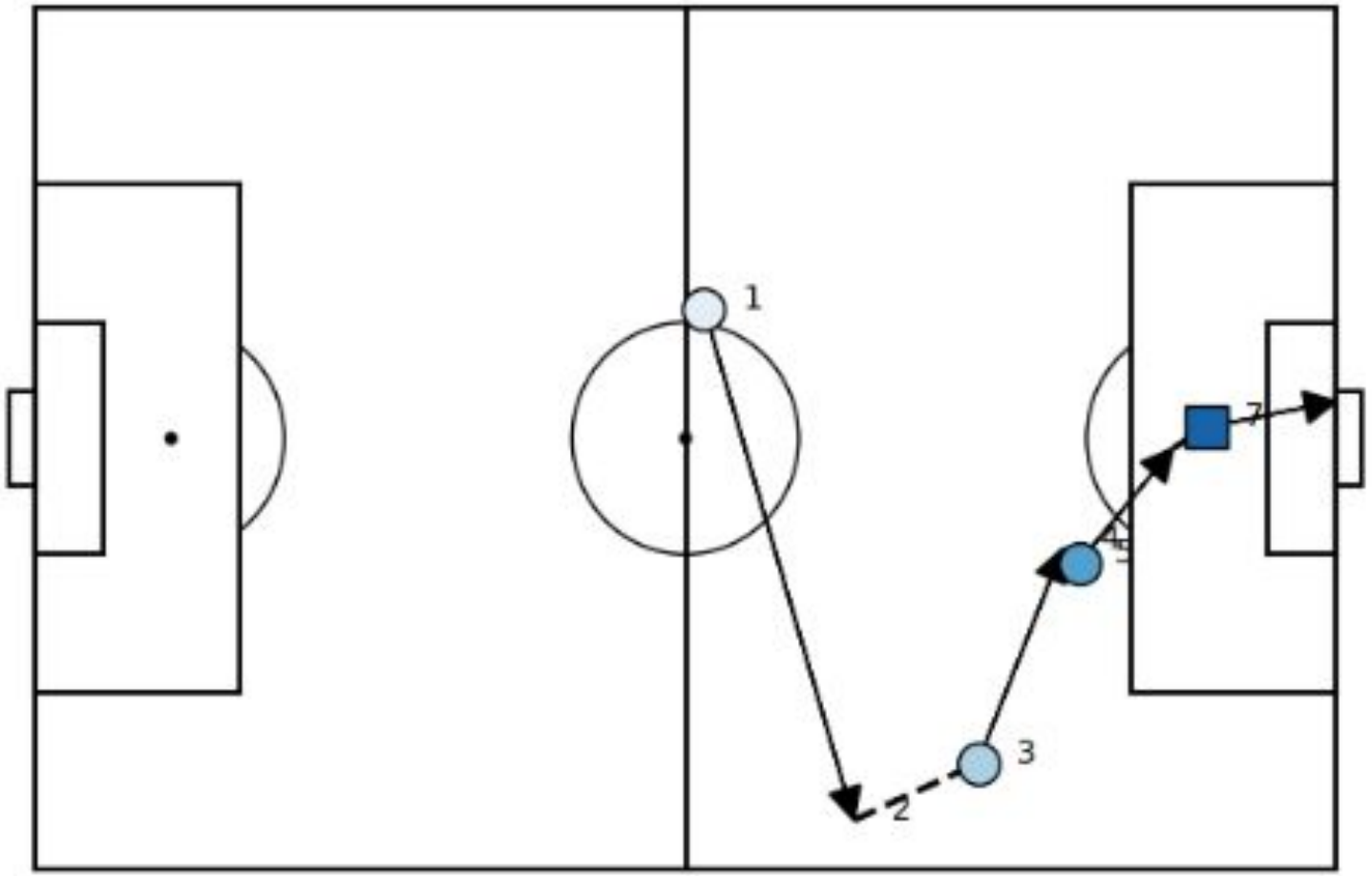
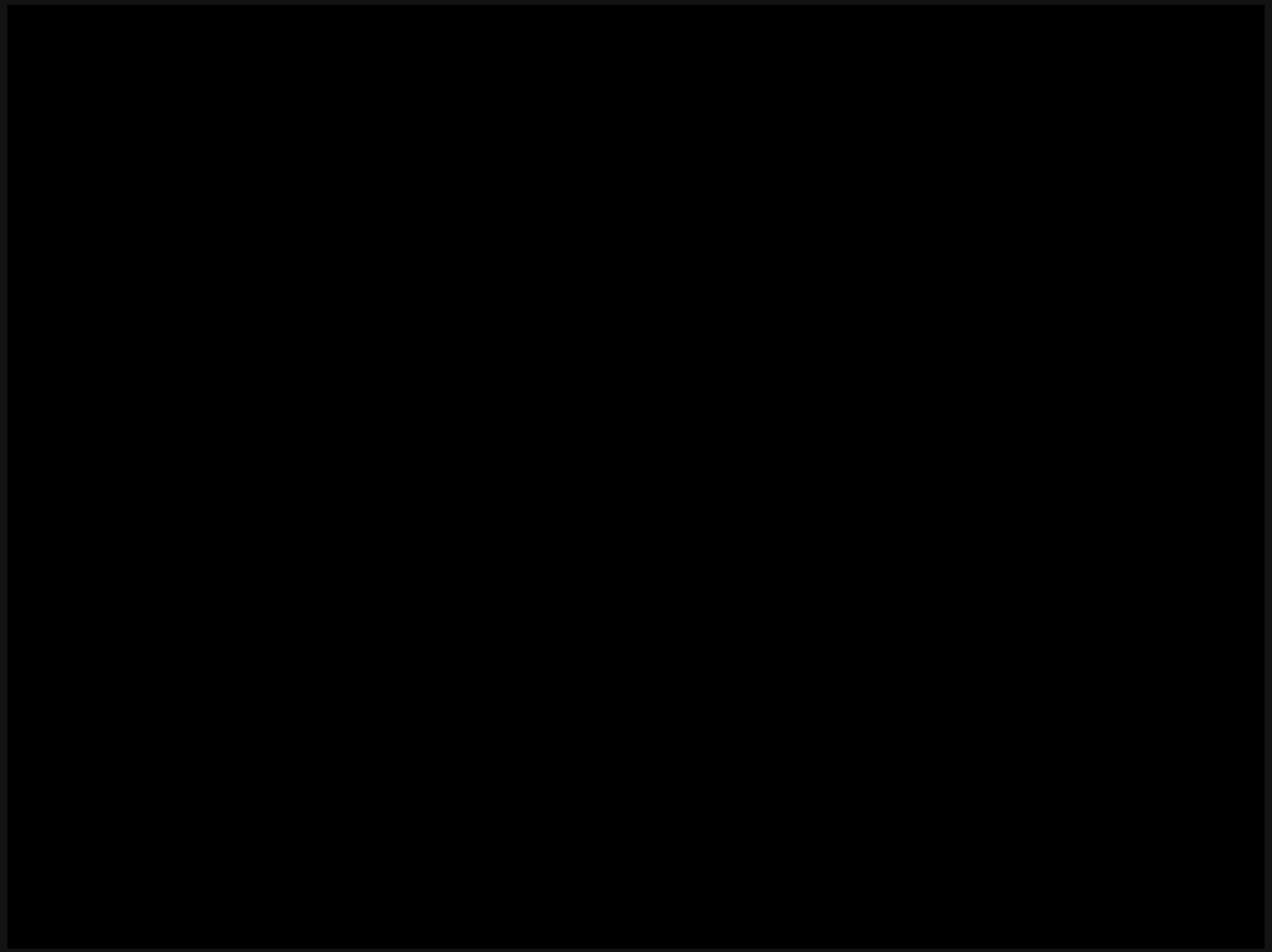
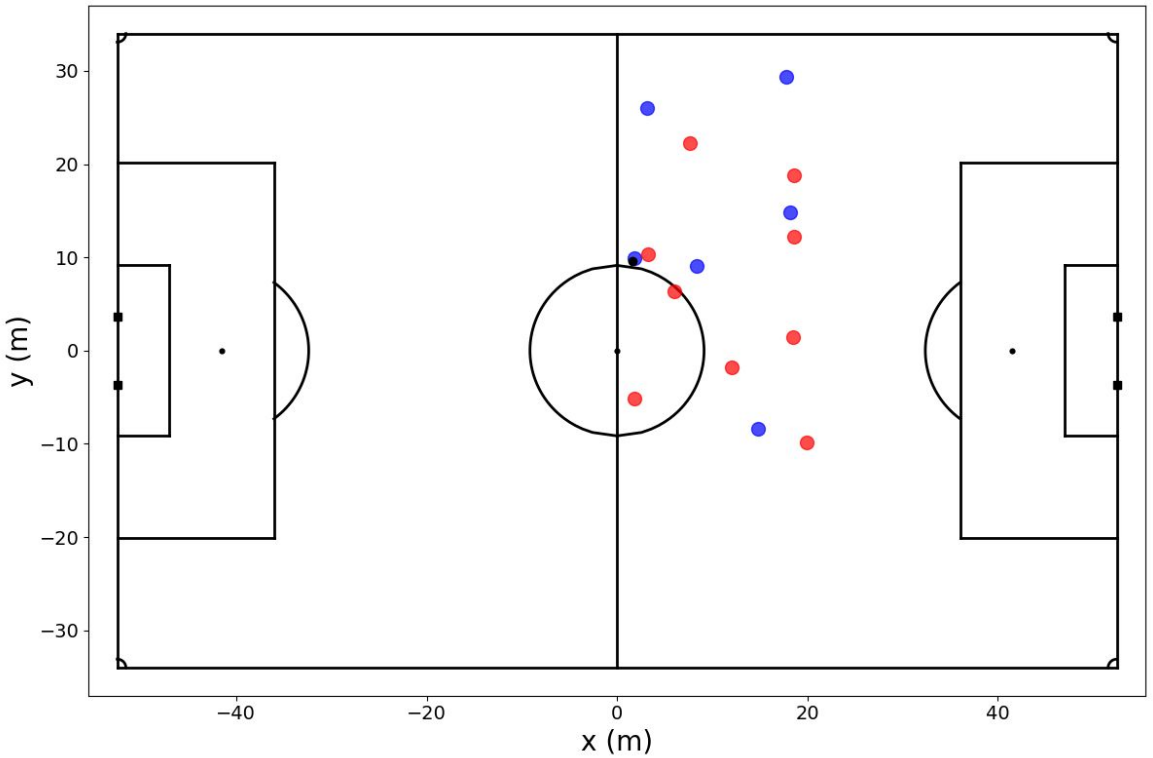


Tracking Data



Tracking Data



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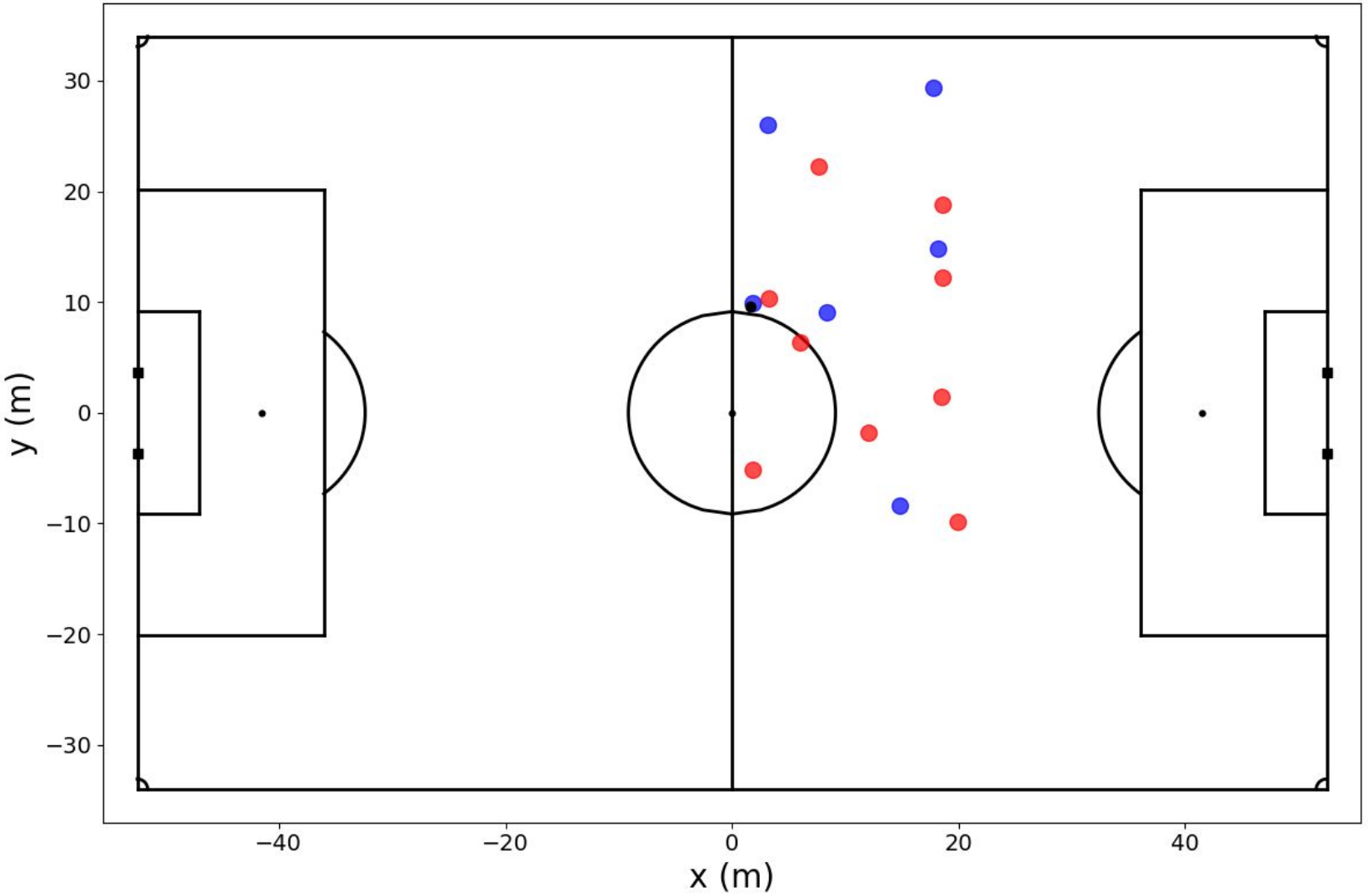

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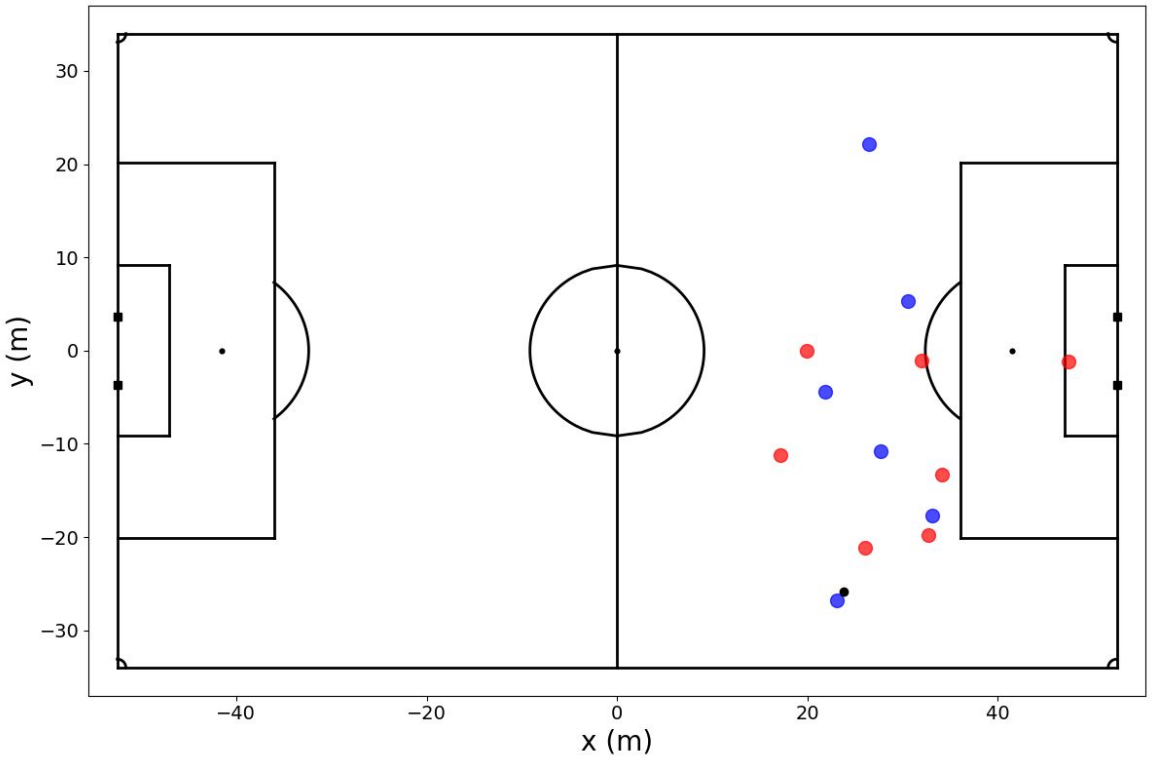

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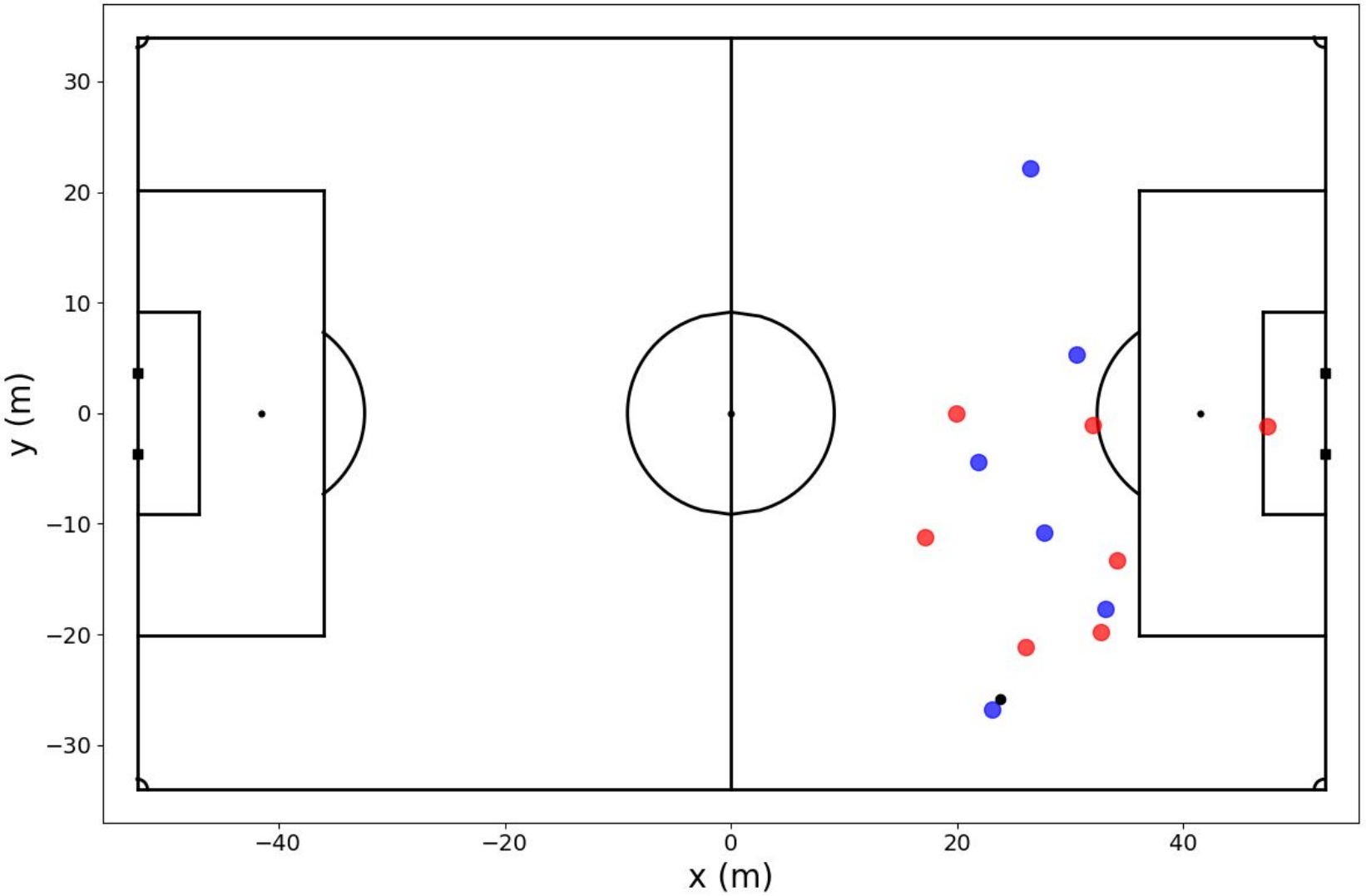

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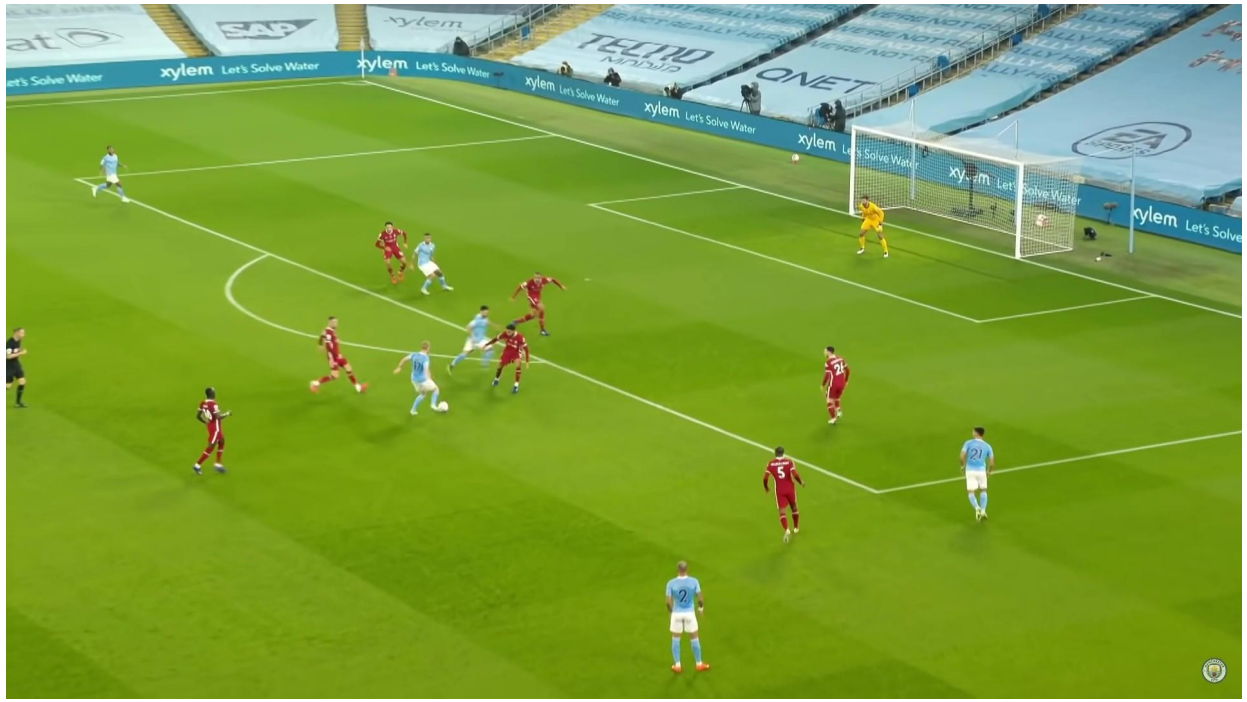

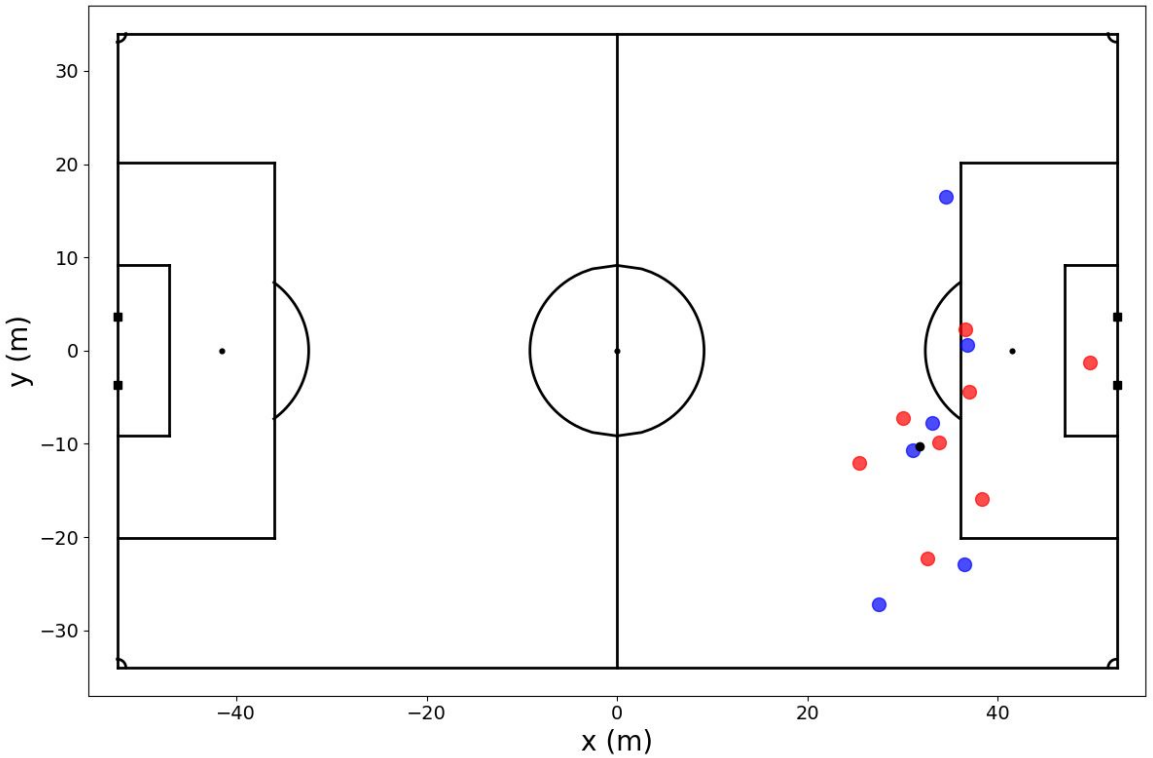

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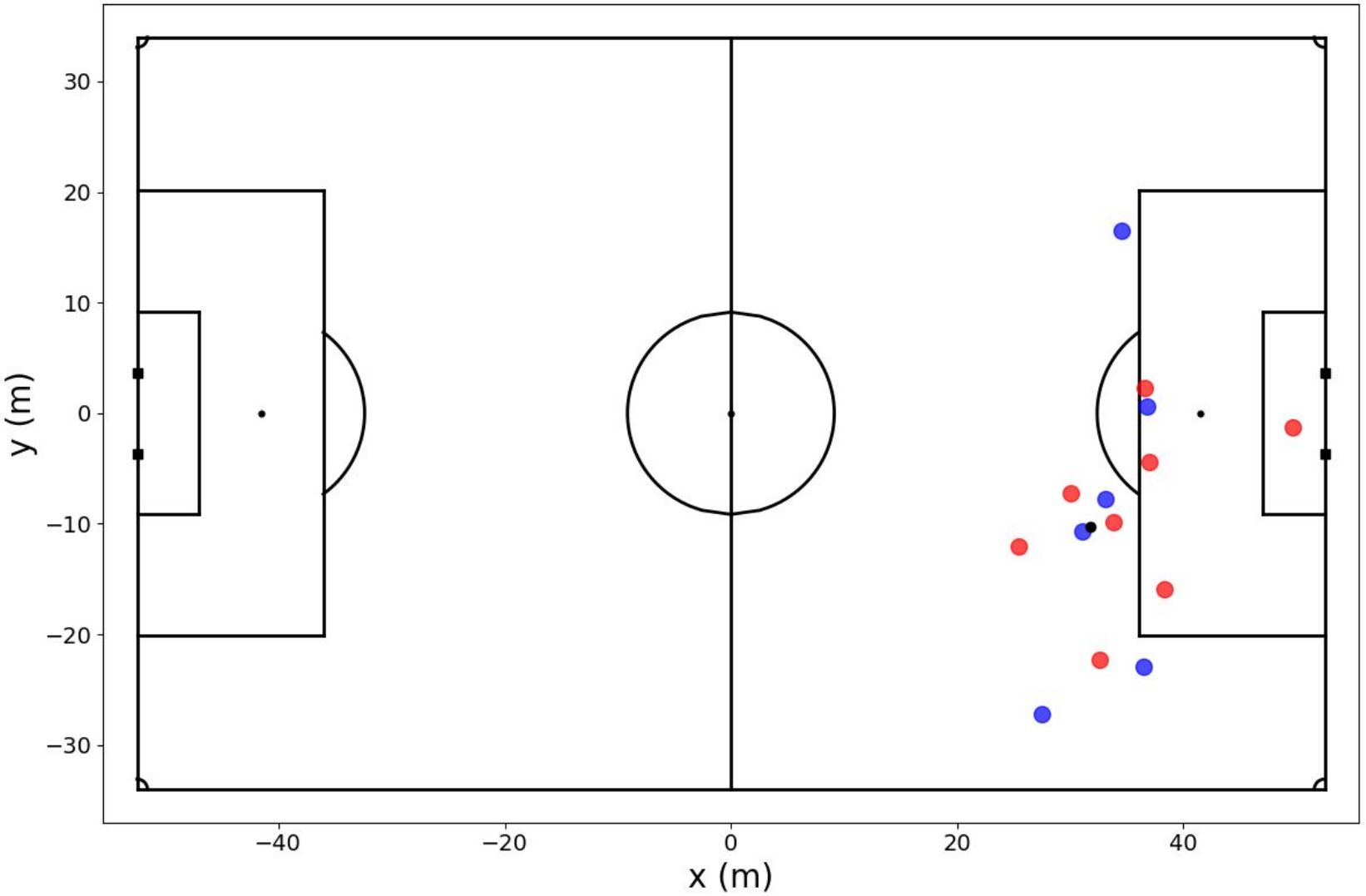

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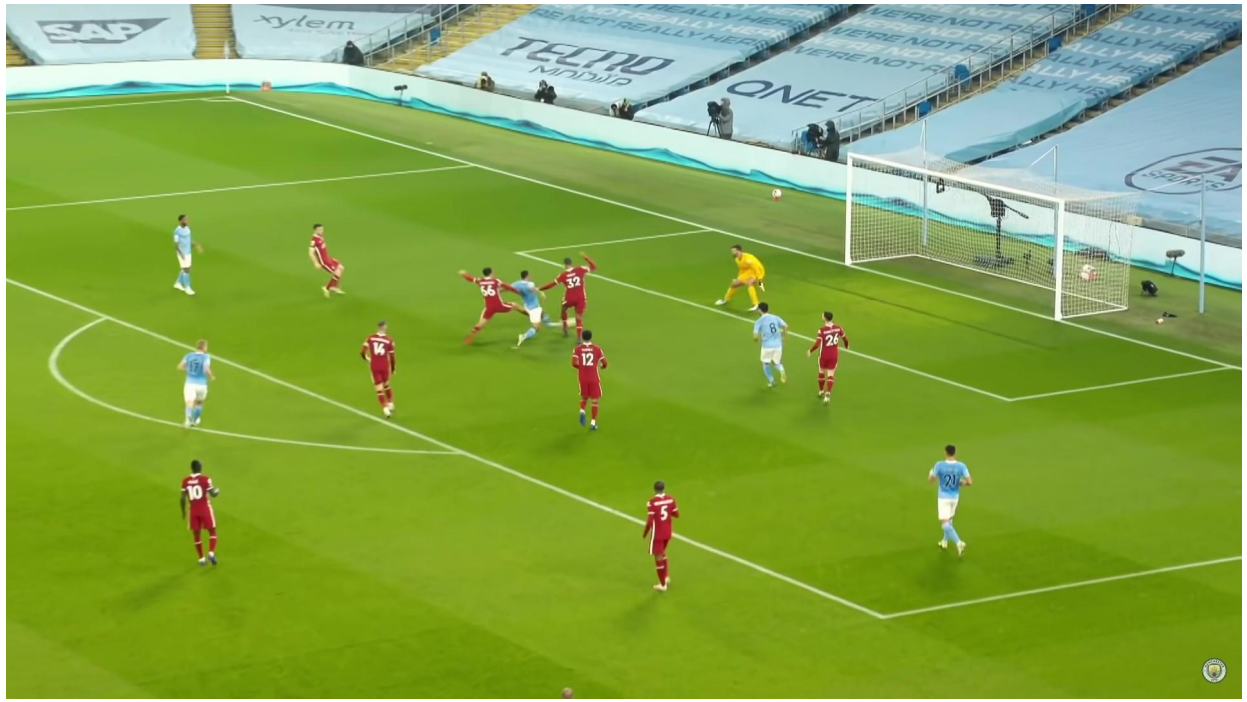

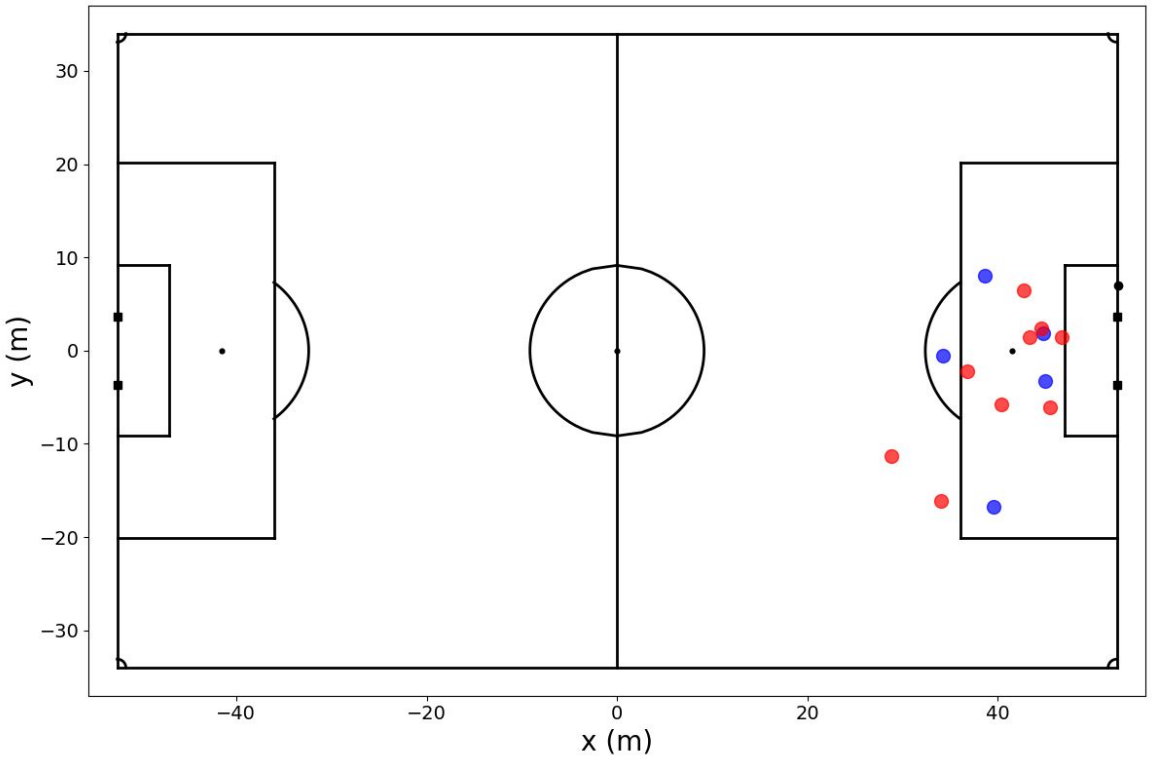

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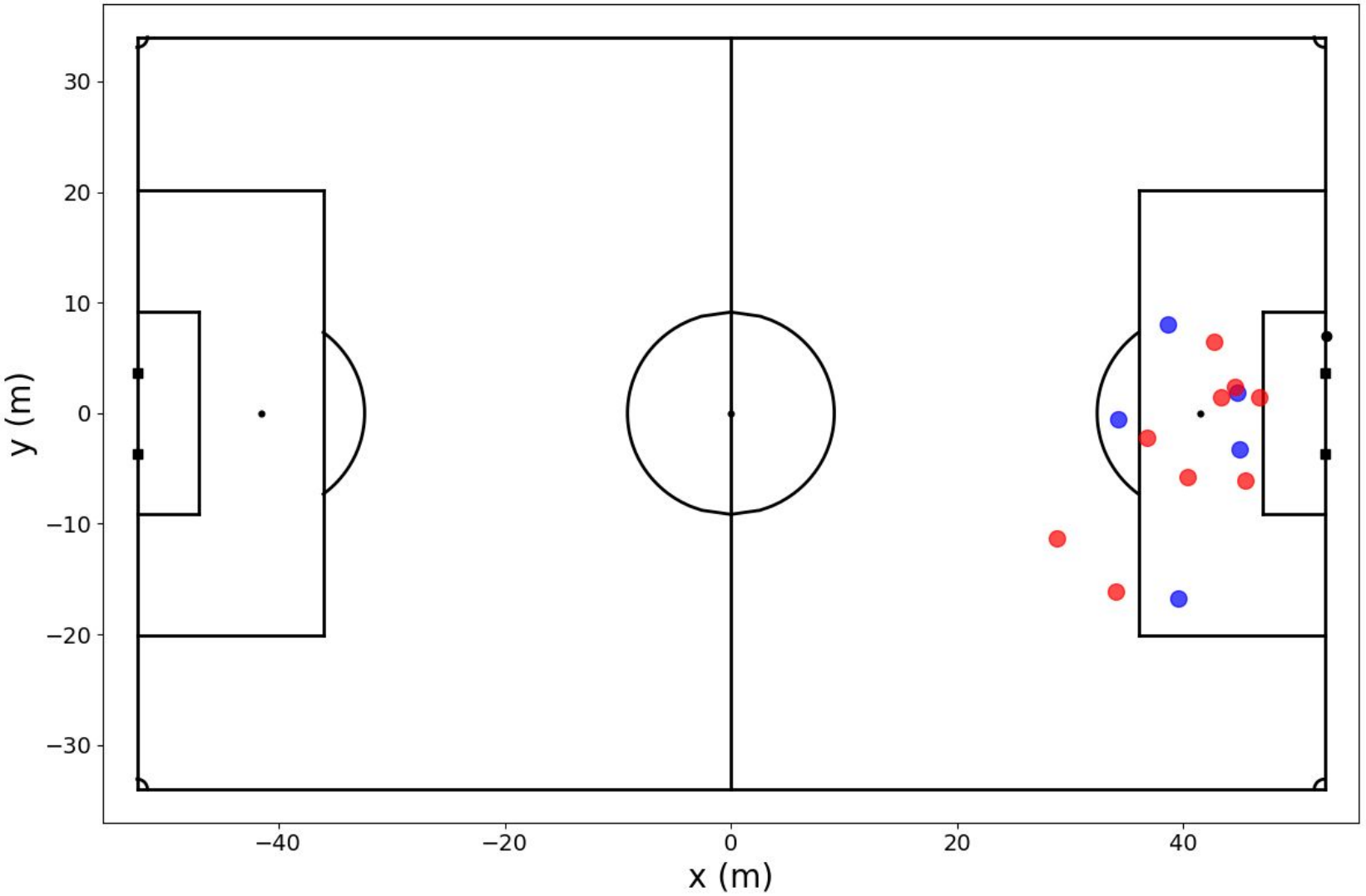
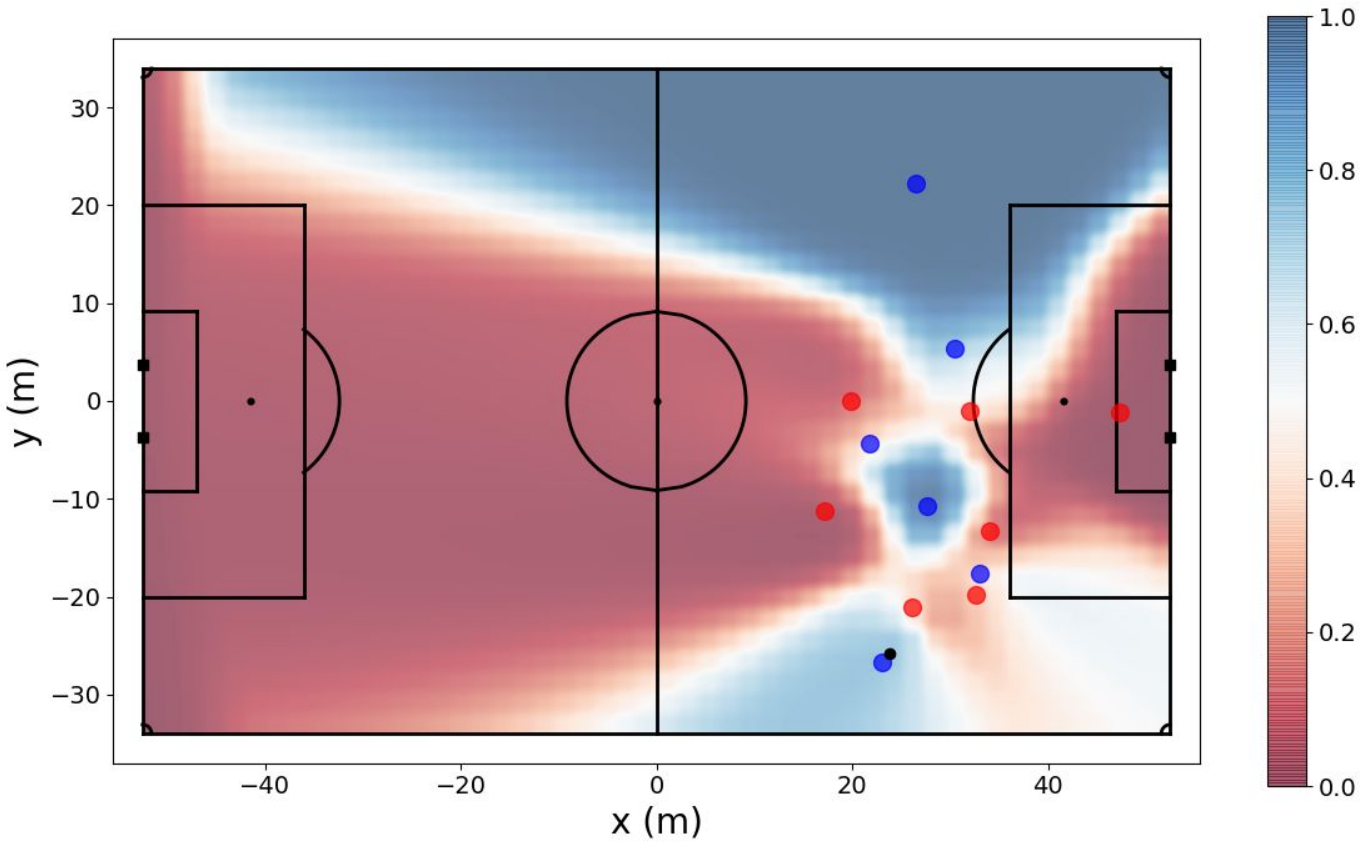


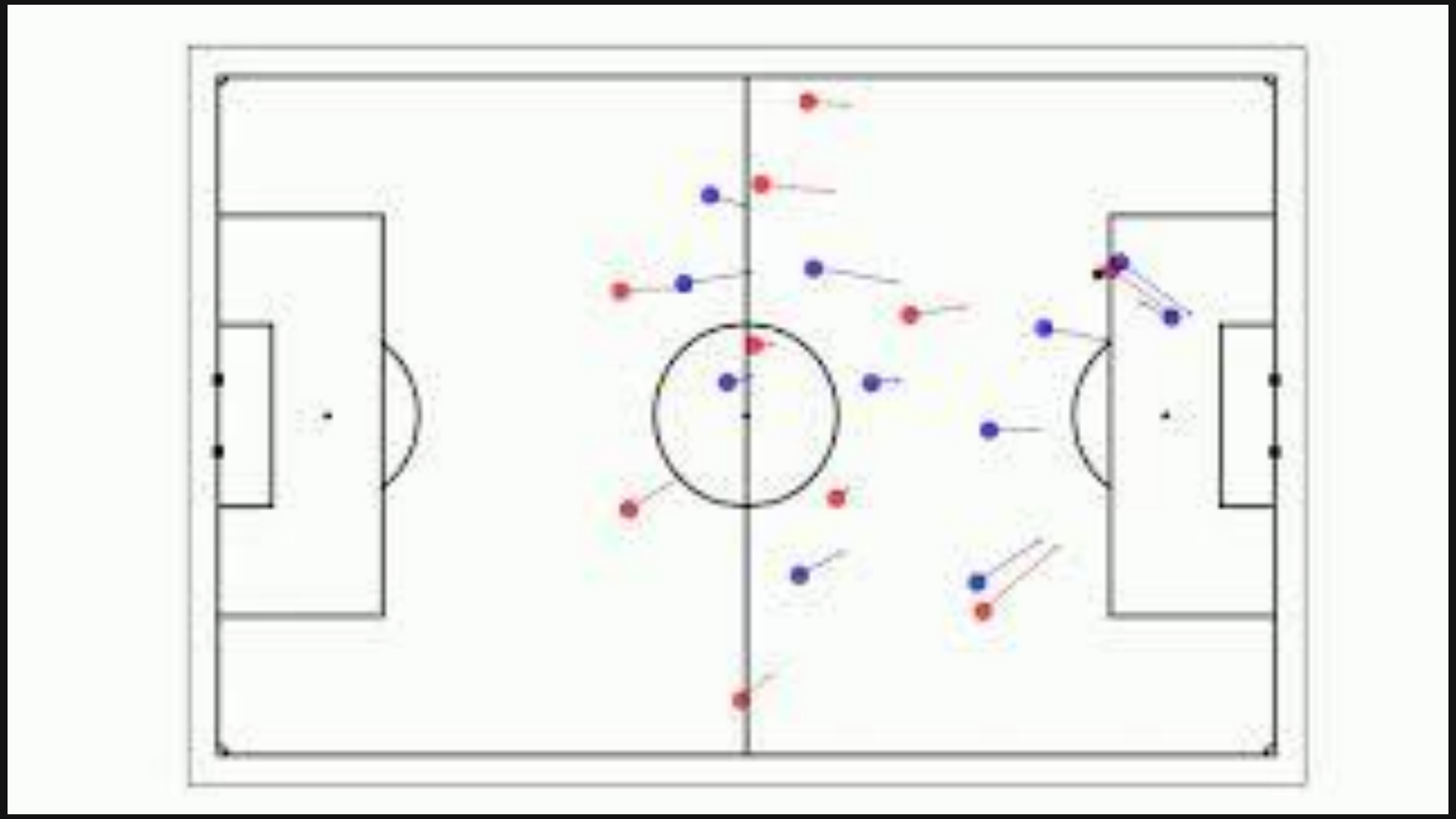
Tracking Data

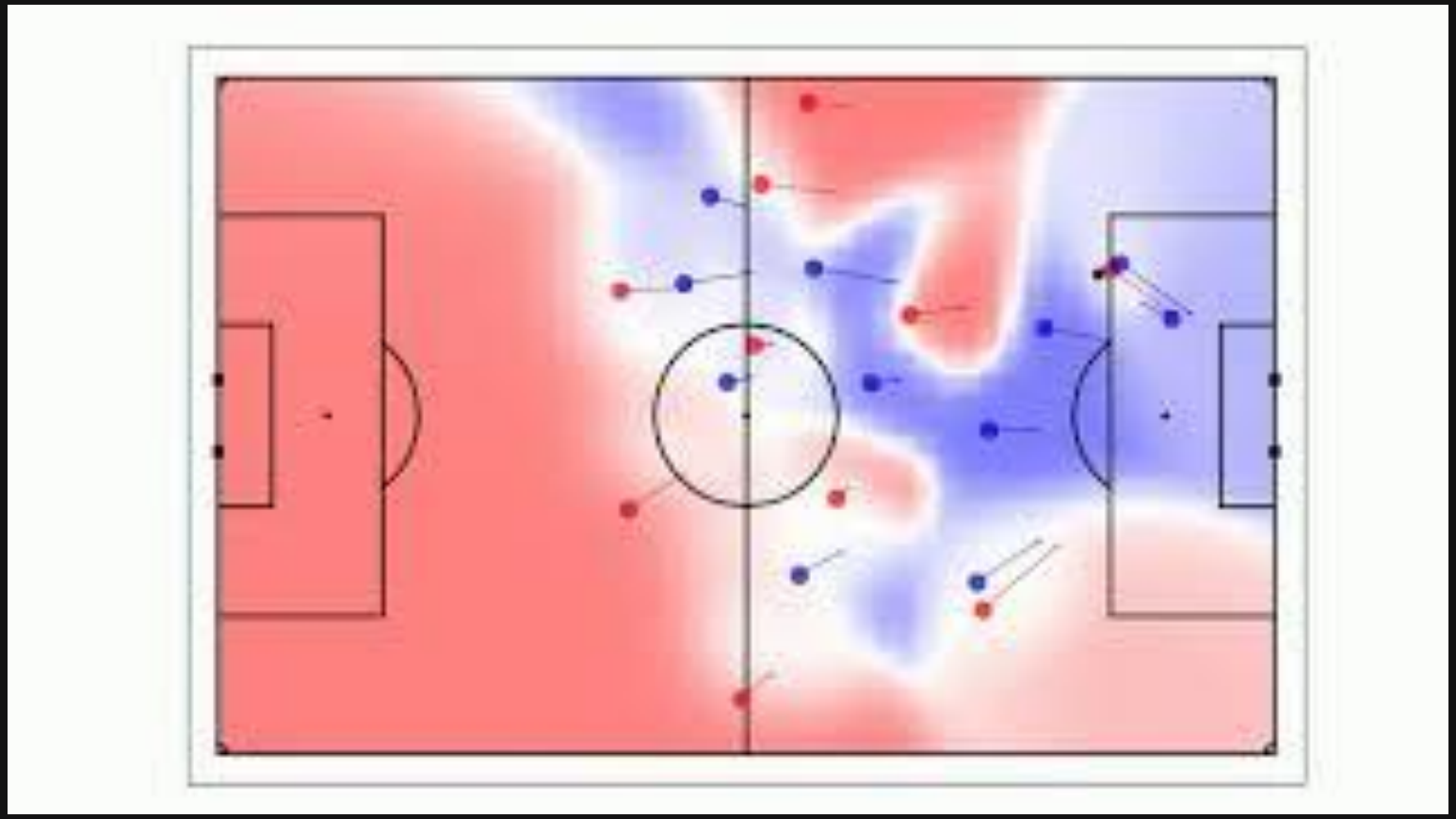
player_id	player_with_ball	team	x	y	vx	vy
56979	False	defense	19.92120	0.01820	4.75090	-3.41640
58621	True	offense	23.11690	-26.76370	4.53780	2.51840
116535	False	defense	47.38320	-1.12810	1.67140	-0.07100
122798	False	defense	32.70340	-19.82460	4.26110	-0.51340
224444	False	offense	33.08400	-17.64080	5.02940	-2.74530
171287	False	defense	34.10550	-13.32030	3.09460	-1.14050
110979	False	defense	17.20310	-11.20410	3.49260	-1.03800
60914	False	defense	31.96080	-1.02800	4.45560	-2.19050
61366	False	offense	27.64120	-10.73410	2.00770	1.16160
103955	False	offense	26.46980	22.18590	3.50800	-1.55090
205651	False	offense	30.51600	5.32470	3.34810	-1.86300
41733	False	defense	26.06490	-21.11930	2.83200	-3.93840
59859	False	offense	21.84390	-4.39210	4.38680	-4.22580

Tracking Data




UEFA.tv
BAYERN 1
LIVERPOOL 3





Pose Data

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@JanVanHaaren Segue você

Football Data Scientist @ClubBrugge. Research Fellow @KU_Leuven. Data Editor for FIFA series @EASports. Computer scientist with a PhD in machine learning.

Jan Van Haaren @JanVanHaaren · 6 de set

Since last season, Hawk-Eye has been providing @ChampionsLeague participants with skeletal tracking data. Last season clubs had to pay an additional fee to obtain access to the data, whereas this season the data is available free of charge. (1/3)

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The data feeds include the 3D positions of the centroid as well as 29 joints on the body for each tracked player and match official. These positions are provided at a sampling frequency of up to 50 Hertz. (2/3)

2 6

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The data feeds come in three different flavors: near live, with a few seconds of delay from live after light scrubbing, and within a few hours after the match after thorough scrubbing. Our RabbitMQ consumer is ready to ingest the data for our matches! (3/3)

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Em resposta a @JanVanHaaren

Nice, Jan. Probably one out of a few clubs who are able to handle that data!

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6

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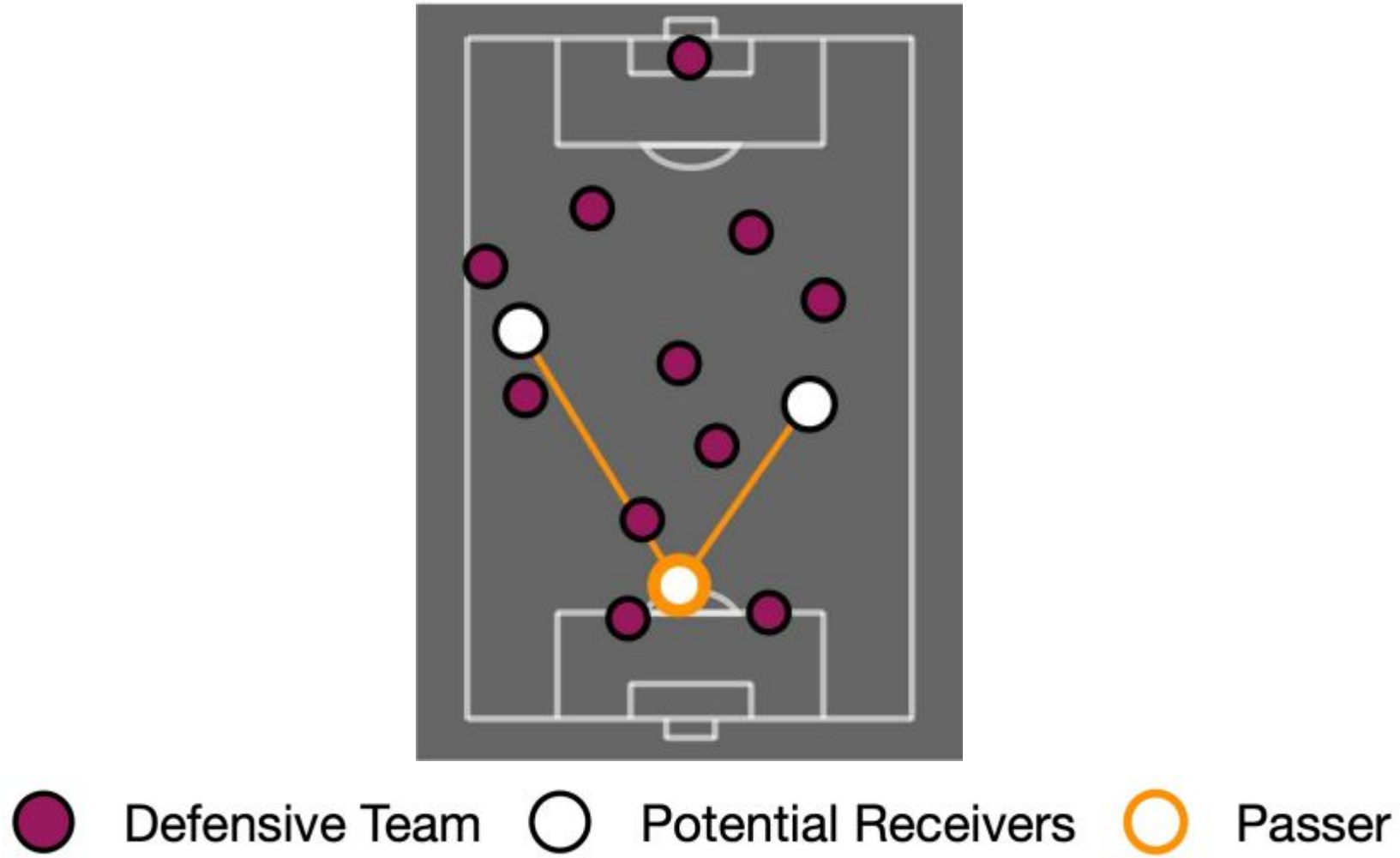
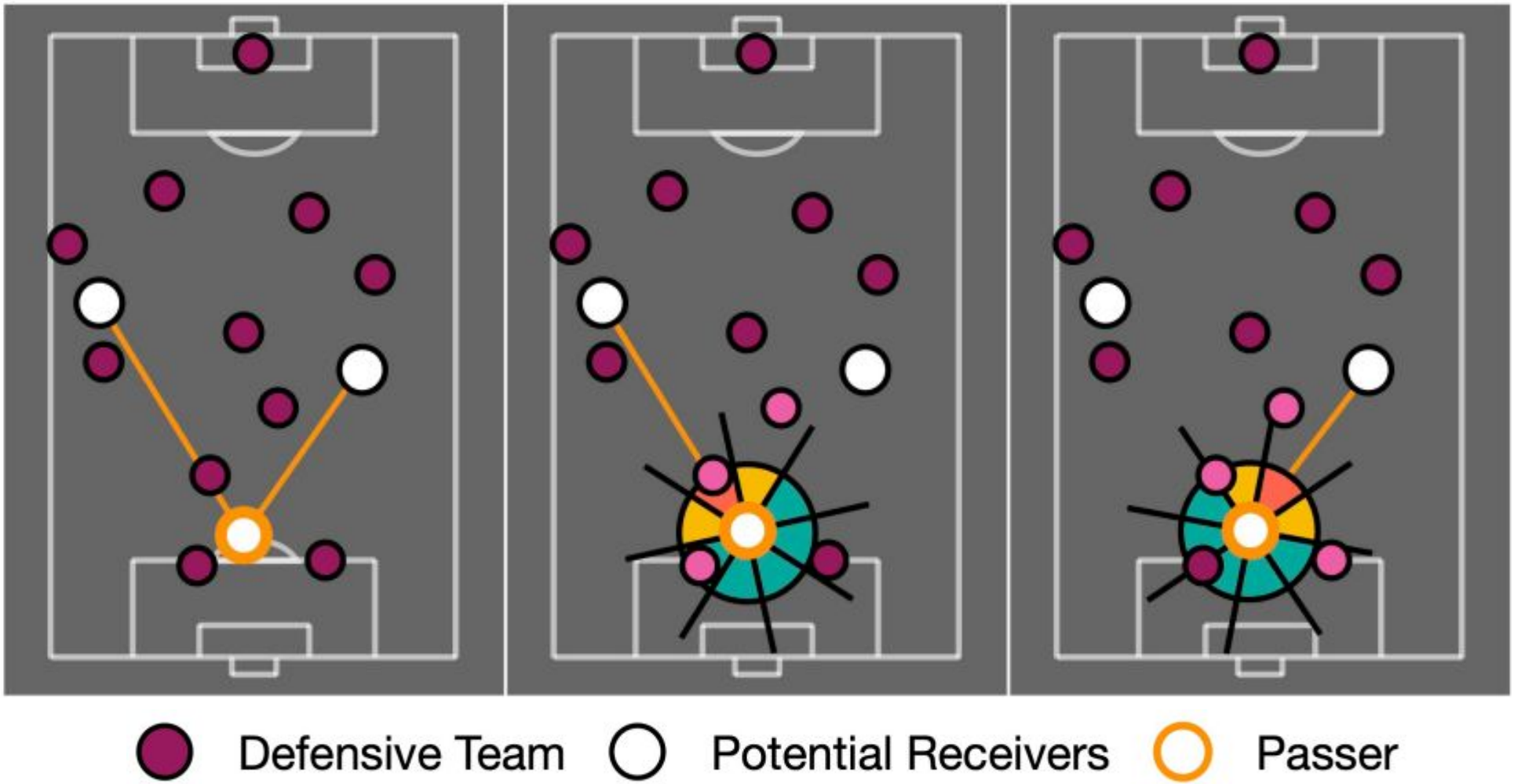
6

Pose Data



[Arbués-Sangüesa et al. - 2020]

Pose Data



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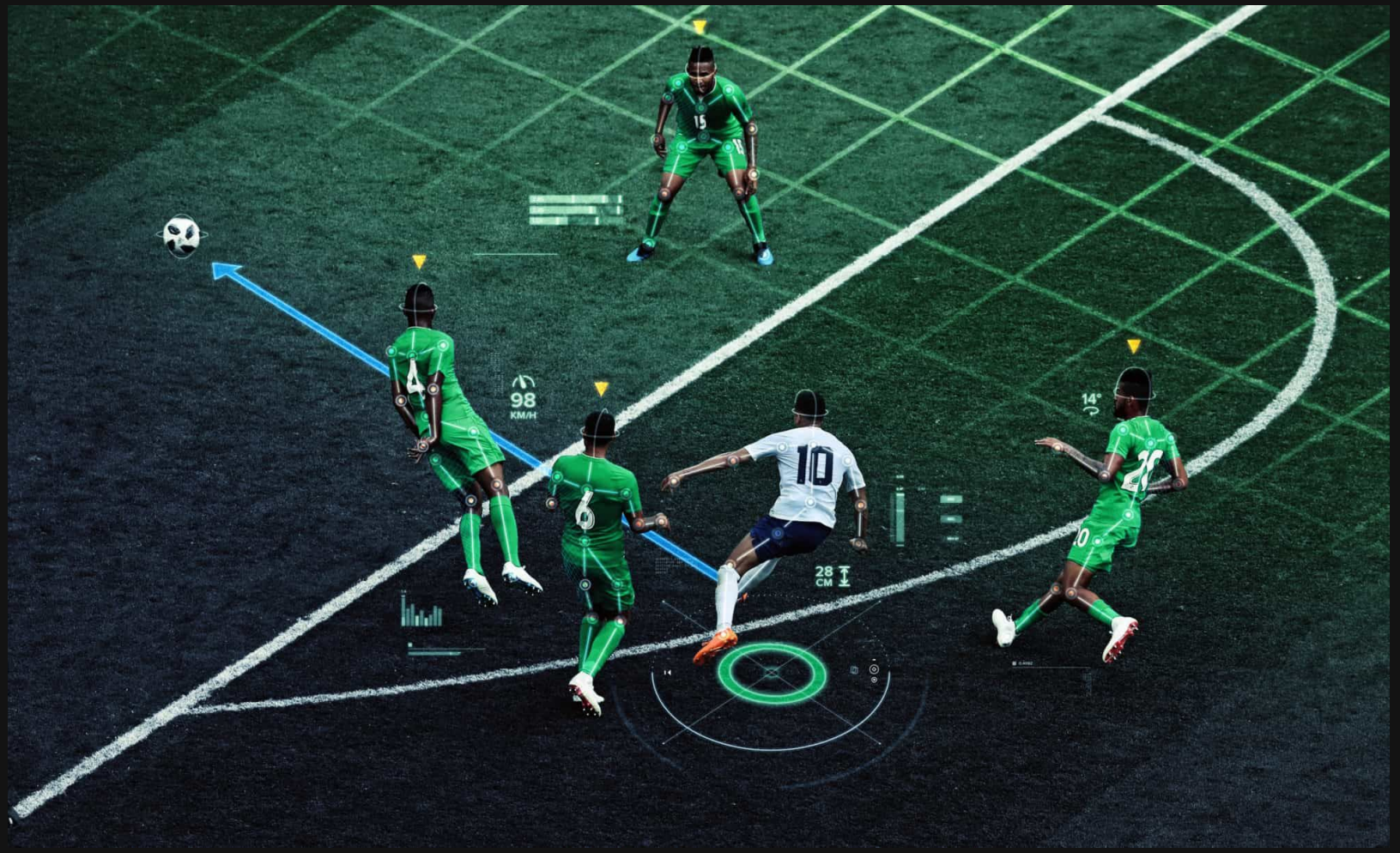
98
KM/H
28
CM
14°

Obrigado!

hugoriosneto@dcc.ufmg.br

@hugoriosneto

Hugo Rios-Neto