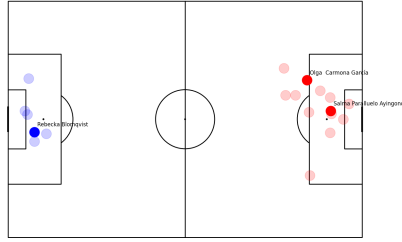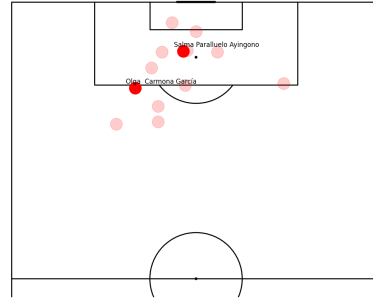# Assignment 1

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I am focusing on the 2023 Women's World Cup to evaluate **Zecira Musovic**, the goalkeeper for Sweden's women's team. The code for Assignment 1 can be found at this GitHub repository.

(a) 2023 Women's World Cup - August 15, 2023 Spain vs. Sweden

(b) 2023 Women's World Cup - August 15, 2023 Spain shots against Sweden

Figure 1: Shot Locations and Goal Outcomes in Spain vs. Sweden. Shooting positions of Spain (red circles) and Sweden (blue circles) during their match in the 2023 Women's World Cup. Solid circles indicate goals, while transparent circles represent shots that did not score.

Table 1: Expected Goals and Actual Scores

Team	xG	Actual Score
South Africa Women's	1.036705	1
Italy Women's	0.682405	0
United States Women's	6.815847	0
Japan Women's	1.738305	1
Spain Women's	1.375955	2
Australia Women's	0.744337	0

According to the data in Figure 1 and Table 1, the expected goal (xG) for the Spanish team was 1.375955, but the Spanish team actually scored 2 goals in the match. This means that Spain exceeded expectations and may also indicate that goalkeeper Zecria Musovic faced higher quality shots in that game but failed to block all of them.
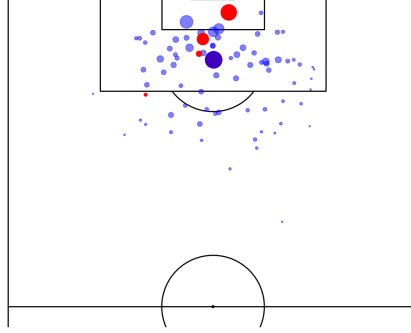

Figure 2: Sweden Goalkeeper Defense Map: This figure presents a detailed analysis of the locations and outcomes of all shots faced by Zecira Musovic during the World Cup. In the graph, blue circles denote shots that were successfully saved, while red circles indicate goals conceded. Additionally, the size of each circle represents the expected goal value (xG) of the corresponding shot—the larger the circle, the higher the probability that the shot would result in a goal.

Table 2: Comparison of Goalkeeper Performances

Goalkeeper	xG per 90 mins	Actual Goals per 90 mins
Zecira Musovic	2.07	0.67
Spain Women's Goalkeeper	0.55	0.86
Italy Women's Goalkeeper	1.53	2.67
Japan Women's Goalkeeper	0.70	0.60

She faced an average expected goals (xG) value of 2.07 per 90 minutes, indicating she frequently contended with high-quality scoring opportunities. Despite this, she conceded only 0.67 goals per 90 minutes on average, resulting in a significant positive xG differential of 1.40 goals prevented per 90 minutes. This substantial overperformance demonstrates her superior reflexes, anticipation, and decision-making under pressure. Comparative analyses show that goalkeepers from Spain, Italy, and Japan faced lower average xG values but conceded more goals, underscoring Musovic's outstanding shot-stopping efficiency and her critical role in Sweden's defensive success during the tournament.