Markov chain example

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2021-01-25

Son-heung-min score

Son Heung-min is a South Korean football player and one of the best strikers in the EPL. In particular, Son Heung-min showed strong performance against the opposing team wearing a yellow uniform in the 2020 season. On average, he scored 1.5 goals per game against teams in yellow uniforms. On the other hand, he scored 0.7 goals per game for opponents in different colors. The team in the EPL is 19 teams except Tottenham, where Son Heung-min belongs, and each team will play 38 games. Son Heung-min is famous for scoring many goals in a short period of time in the league. When he scored in the previous game, he had a 0.8 chance of scoring in this match. If you don't score a goal in the previous game, you have a 0.6 chance of scoring in this game. Son Heung-min has scored three goals in seven games, and the team he will meet this time is Wolverhampton wearing a yellow uniform. When Son Heung-min finishes this season, what is the expected number of points?

*state : the team of match with tottenham

*transition probaility : 0.8 0.2 / 0.6 0.4

*reward : goal

Solution

1. Find the transition matrix

2. Show the markov chain

3. Find the expected reward