PREDICTION MODELS FOR THE FIFA WORLD CUP 2018

The World Cup is the most prestigious football tournament as well as the most widely viewed and followed sporting event in the world, exceeding even the Olympic Games. The world cup is a two stage tournament: a round-robin tournament followed by a knock out stage. It is widely believed that the structure of the tournament has an influence on the outcome of the tournament. Hence, in order to give a reasonable guess for the next World Champion it seems necessary to analyse and simulate the whole tournament.

Reference (1) discusses several basic methods to simulate such a tournament. A first step of this TER is to run these forecast models for the World Cup 2018. Besides a scientific evaluation of these models, the results should also be visualized to attract a larger audience, see for instance (2).

In the first stage, the round-robin tournament, the goal difference can play an important role. The next step of the TER is to understand a more fancy model for the outcome of a game: the so called (diagonal inflated) bi-variate Poisson model. In this model each team scores following a Poisson distribution, but the two outcomes are not necessarily independent. The theoretical part of the TER consists in understanding such a bi-variate Poisson distribution and to construct and calculate estimators for its parameters, see (3).

The last step of the TER is to see if the more sophisticated model offers better forecasts and to use the “best” forecasting method to guess the World Champion 2018.

Bibliography:

(2) https://fivethirtyeight.com/interactives/world-cup/
(3) www.stat-athens.aueb.gr/~karlis/Bivariate%20Poisson%20Regression.pdf

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