Modeling Home Advantage in Soccer
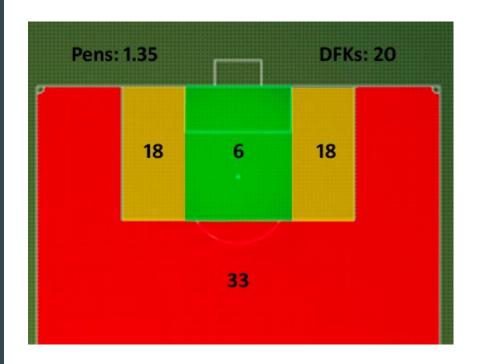
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April 2017

Objective:

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Create a team performance metric from match statistics

What is ExpG?

How many goals an 'average' team would score given the shots taken
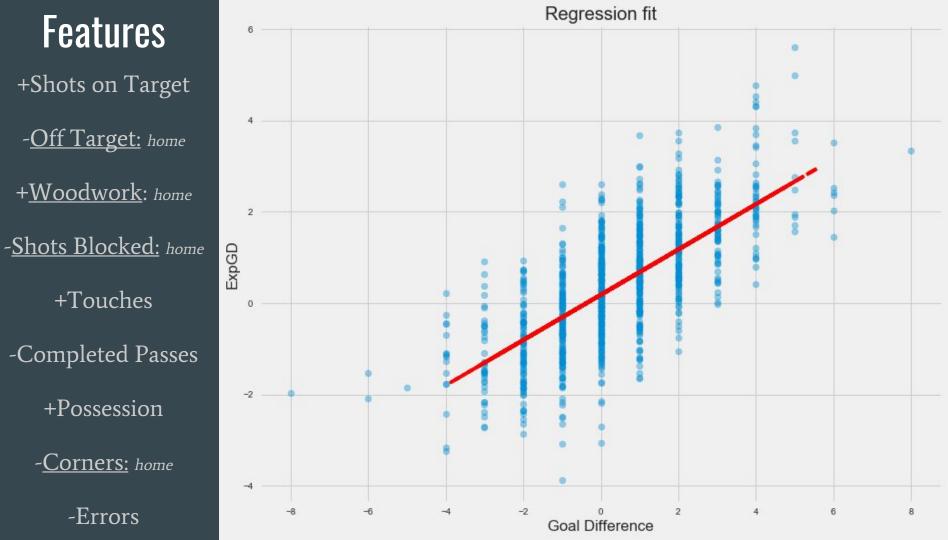
Building a Dependent Model

- Source: WhoScored.com
  - Matches:
    - 2015/16 Premier League (England)
    - 2015/16 La Liga (Spain)
    - 2015/16 Bundesliga (Germany)

- Predict ExpGD for Home Team from match statistics

Features

+Shots on Target

-<u>Off Target</u>: *home*

+<u>Woodwork</u>: *home*

-<u>Shots Blocked:</u> *home*

+Touches

-Completed Passes

+Possession

-<u>Corners</u>: *home*

-Errors

Regression fit

Significance of Asymmetric Features

- Pitch Variation
  - 6400 m² - 8400 m² (30% larger)
  - Surface variation

- Proactivity - Reactivity
  - Proactive Home Team
  - Reactive Away Team

Moving Forward

- Features to consider
  - Pitch Size
  - Location of shots/passes/touches etc.
  - Weather conditions
- Applications
  - Assess performances of teams to identify areas of strength and weakness
  - ExpGD as a feature to predict future results

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