

Predicting player performance / Identifying attributes that affect player performance / Simulation

Background: In various team sports such as hockey or football, there are usually an abundance of attributes that can describe a player's ability and their performance. Finding the relation between the attributes can provide vital information about how a player might progress during their career, which attributes are more important than others for different outcomes, or how a player's performance might progress throughout their career.

It is not only the player's attributes that influence their performance but the team tactics being used. Simulation engines such as Franchise Hockey Manager or Football Manager allow for the testing of different tactics with players

Data: Two sets of data exist. The first data set consists of player attributes and their performance metrics from two simulated hockey league during 10+ seasons, each season documenting around 3-400 players from Franchise Hockey Manager 6. The attributes are discrete values showing the level of skill the player has in different areas of the play, while the performance metrics are seasonally aggregated statistics summarizing the players' performances in the season.

The second data set consists of player attributes from a simulated football league during 5 seasons consisting of around 100-200 players in total from Football Manager 2022. The data set also contains game-by-game performance metrics for all games played during these 5 seasons.

Possible Research Questions:

- Identify which attributes and how they affect different performance metrics.
- Find a model that can accurately predict the performance of a player.
- Identify tactics that synergize well with different attributes.

Pre-requisites:

Good knowledge of statistics and machine learning

Contact: Isak Hietala isak.hietala@liu.se