Seminar Soccer Analytics

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General info

Content:

Statistical analysis of different topics in soccer. Tasks (depending on the topic):

- understand scientific paper,

- present and explain,

- do own analysis / application.

Examples:

- How to model and predict football matches? How tournaments?
  (overview of historical evolution of this challenge)

- Is there a home advantage? Compare national leagues and international
  tournaments such as e.g. FIFA World Cups, UEFA EUROs, UEFA CL, etc.

- Does the winning chance of a team depend on the tournament mode?

Previous knowledge:

Some topics have masters level!

Potential topics (not extensive)

- Referee-Bias w.r.t. favorite / home team?

- Different analysis on home advantage

- Modeling and prediction of matches (development since 1982; about 8-10 topics; incl. regularization; Poisson vs. ordinal regression; trees and random forest; XGBoost; concept of enhanced features)

- Bookmaker-based prediction

- historic match based ranking approaches

- +/- player rating

- comparison of different league formats

- UEFA CL: better to have the 2nd leg at home?

- "hot-shoe" effect in penalty taking

- match-fixing warning systems

Organization

- principally eligible for both B.Sc. and M.Sc.

- max. 18 participants (if necessary via lottery)

- depending on topic, groups of 2 are possible

- 30 min. presentation + report

- dates: Thursdays, 12 - 14 pm, room M/E 27

- preliminary orga meeting & topic assignment: 10.10.2024