Package 'SportsAnalytics'

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Type Package

Title Infrastructure for Sports Analytics

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Depends R (>= 2.10), methods, stats

Suggests archetypes

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Description The aim of this package is to provide infrastructure for
sports analysis. Anyway, currently it is a selection of data
sets, functions to fetch sports data, examples, and demos --
with the ambition to develop bit by bit a set of classes to
represent general concepts of sports analysis.

URL http://soccer.r-forge.r-project.org/

License GPL (>= 2)

Collate 'fetch_NBAPlayerStatistics.R' 'concentration.R'

NeedsCompilation no

Repository CRAN

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R topics documented:

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BundesligaFinalStandings

Final German Bundesliga standings

Description

Final German Bundesliga standings from season 1990-1991 to 2009-2010 provided by `kicker.de`.

Usage

```
data(BundesligaFinalStandings)
```

Format

A data frame with 362 observations on the following 12 variables.

League Soccer league (here just `Bundesliga`)

Season Bundesliga season (`1990-1991` to `2009-2010`

Position Final position of a team

Team Team name

GamesPlayed Number of games played in the season

Wins Number of wins

Draws Number of draws

Losses Number of losses

GoalsScored Number of goals scored

GoalsAgainst Number of goals conceded

PointsScored Number of points scored

PointsAgainst Number of points conceded

Source

http://www.kicker.de

Examples

```
data(BundesligaFinalStandings)
```

`BundesligaTransferSums`
Transfer sums of German Bundesliga teams

Description

Transfer sums (takings and spendings) of German Bundesliga teams from season 1990-1991 to 2009-2010 provided by transfermarkt.de.

Usage

```
data(BundesligaTransferSums)
```

Format

A data frame with 362 observations on the following 5 variables.

`League` Soccer league (here just `Bundesliga`)

`Season` Bundesliga season (`1990-1991` to `2009-2010`)

`Team` Team name

`Takings` Takings in Euro

`Spendings` Spendings in Euro

Source

http://www.transfermarkt.de

Examples

```
data(BundesligaTransferSums)
```

`concentration_ratio` *Concentration ratios*

Description

This is a proof-of-concept implementation of concentration ratios for data with an exogenous order.

Usage

```
concentration_ratio(x, g, ex = order(x, decreasing =
TRUE))
```

Arguments

x	Data vector
g	Number of "first" data (according to the order)
ex	Exogenous order of the data vector

Value

The concentration ratio value

See Also

Other concentration: exogeny, herfindahl, rosenbluth

Examples

```
set.seed(1234)
x <- sample(100000, 10)  # Data
o <- sample(10)          # Exogenous order

concentration_ratio(x, 3)
concentration_ratio(x, 3, ex = o)
```

EURO4PlayerSkillsSep11

Soccer player skill ratings (Sep 2011)

Description

Soccer player skill ratings (at the time of September 2011) provided by the PES Stats Database.

Usage

```
data(EURO4PlayerSkillsSep11)
```

Format

A data frame with 1851 observations on the following 43 variables. The description of the skills are from the PES Stats Database.

Name Player name

League Soccer league (Bundesliga, LaLiga, PremierLeague or SerieA

Team Team name

Number Squad number

Position Player's position (Goalkeeper < Defender < Midfielder < Forward)

Positions Player's position in more detail

Birthday Birthday

`Nationality` Nationality

`Age` Age

`Height` Height

`Weight` Weight

`InjuryTolerance` Injury tolerance (A < B < C)

`Foot` Main foot, "handedness" (L, R)

`Side` Preferred side of the field (B, L, R)

`Attack` Resistance of marker attentions

`Defence` Performance of achallenges and sliding tackles

`Balance` Stableness

`Stamina` Endurance

`TopSpeed` Top speed without ball dribbling

`Acceleration` Acceleration towards top speed

`Response` Reaction time

`Agility` Agility during kicks, tricks, and general movements

`DribbleAccuracy` Movement with the ball at the feet

`DribbleSpeed` Top speed during ball dribbling

`ShortPassAccuracy` Preciseness of passes along the ground

`ShortPassSpeed` Speed of passes along the ground

`LongPassAccuracy` Preciseness of airborne passes and crosses

`LongPassSpeed` Speed of airborne passes and crosses

`ShotAccuracy` Preciseness of shots

`ShotPower` Power of shots

`ShotTechnique` Preciseness of shots

`FreeKickAccuracy` Preciseness of free kicks

`Curling` Curling of shots, free kicks, etc.

`Header` Preciseness of headers

`Jump` Jump ability

`Technique` Ball trapping and controlling

`Aggression` Aggressiveness

`Mentality` Commitment and drive

`KeeperSkills` Keeper skills

`Teamwork` Interaction with teammates

`ConditionFitness` Fatigue after matches

`WeakFootAccuracy` Preciseness of kicks with the weaker foot

`WeakFootFrequency` Frequency of kicks with the weaker foot

Details

The skill ratings are from the PES Stats Database (PSD), a community-based approach to create a database with accurate statistics and skill ratings for soccer players (originally for the video game "Pro Evolution Soccer" by Konami).

Source

<http://pesstatsdatabase.com/>

Examples

```
data(EURO4PlayerSkillsSep11)
```

```
fetch_NBAPlayerStatistics
```
                                   Fetch player statistics for NBA season statistics

---

Description

Fetch player statistics for NBA season statistics

Usage

```
fetch_NBAPlayerStatistics(season = "09-10", what = c("",
".Home", ".Away"))
```

Arguments

season	Season to fetch ("88-89", "89-90",
what	Complete, home or away statistics

Value

Data frame; see `NBAPlayerStatistics0910` for a description.

Examples

```
## Not run:
fetch_NBAPlayerStatistics("07-08")
fetch_NBAPlayerStatistics("07-08", what = ".Home")
fetch_NBAPlayerStatistics("07-08", what = ".Away")

## End(Not run)
```

herfindahl	*Concentration indices*

Description

This is a proof-of-concept implementation of concentration measures for data with an exogenous order.

Usage

```
herfindahl(x)

rosenbluth(x)

exogeny(x, ex = order(x))
```

Arguments

x	Data vector
ex	Order of the data vector

Value

The concenctration index.

See Also

Other concentration: concentration_ratio

Examples

```
## See demo("concentration-bundesliga") for a real-world
## application.

set.seed(1234)
x <- sample(100000, 10)

## Classical concentration indices:
herfindahl(x)
rosenbluth(x)

## Exogenous order is available:
o <- sample(10)
exogeny(x, o)
```

```
NBAPlayerStatistics0910
```
NBA season 2009/2010 player statistics

Description

NBA season 2009/2010 player statistics provided by dougstat.com (via fetch_NBAPlayerStatistics).

Usage

```
data(NBAPlayerStatistics0910)
```

Format

A data frame with 441 observations on the following 25 variables.

League League, here just NBA

Name Player name (either: last,first -or- last)

Team Team name (3 letter abrev)

Position Player's position (PG, SG, SF, PF or C)

GamesPlayed Games played

TotalMinutesPlayed Total minutes played

FieldGoalsMade Field foals made

FieldGoalsAttempted Field goals attempted

ThreesMade Threes made

ThreesAttempted Threes attempted

FreeThrowsMade Free throws made

FreeThrowsAttempted Free throws attempted

OffensiveRebounds Offensive rebounds

TotalRebounds Total rebounds

Assists Assists

Steals Steals

Turnovers Turnovers

Blocks Blocks

PersonalFouls Personal fouls

Disqualifications Disqualifications

TotalPoints Total points

Technicals Technicals

Ejections Ejections

FlagrantFouls Flagrant fouls

GamesStarted Games started

Source

Doug's NBA & MLB Statistics Home Page, `http://dougstats.com`.

See Also

`fetch_NBAPlayerStatistics`.

Examples

```
data(NBAPlayerStatistics0910)
```

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