

Football Analytics 201: Validating Tactical Principles

Ruslan Kornichuk | 08.05.2026

ver. 2.0.0



ANTONOV AN-124

Ruslan

The Visionary: Rinus Michels

Who: The coach of Ajax and the Netherlands national team.

When: Late 1960s – 1970s.

How: Michels formalized "**Totaalvoetbal**" (Total Football). The core rule: any outfield player can take over the role of any other player in the team.



The Perfectionist: Johan Cruyff

Who: The star player of Ajax. The coach of Ajax and Barcelona.

When: 1970s (player) - 1990s (coach).

How: Cruyff prioritized space and technique, laying the foundation for Barcelona's "**tiki-taka**".



☰

Opgeslagen

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Sportmonks Bv

App downloaden

Sportmonks Bv

4,1 ★★★★★ (28) ⓘ

Softwarebedrijf

Overzicht

Reviews

Over

Route

Opslaan

In de buurt

Naar telefoon verzenden

Delen

Papenstraat 26, 7411 ND Deventer

sportmonks.com

7533+CF Deventer

Bewerking voorstellen

A Google Maps view of a city street grid in Deventer, Netherlands. A red pin marks the location of 'Sportmonks' at Papenstraat 26. The map shows various streets including Leusensteeg, Hagensteeg, Bagijnenstraat, Bruynsteeg, Papenstraat, Tibbensteeg, Nieuwstraat, Engestraat, Pontsteeg, Broedersstraat, Duivengang, Lange Bischoopstraat, Korte Bischoopstraat, Op de Keizer, Brinkpoortstraat, Walstraat, Treurnietgang, Grote Overstraat, Hof van Adwaita, Hofstraat, Sandraasteg, Lange Bischoopstraat, and Waterstraat. Other landmarks include the Burgerweeshuis, MIMIK Film Theater en Café | Deventer, Restaurant Jackies Deventer, Eetcafé de Sjampetter, and Lebuinuskkerk. The Google Maps logo is visible at the bottom.



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● sports analytics

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+ Add comparison

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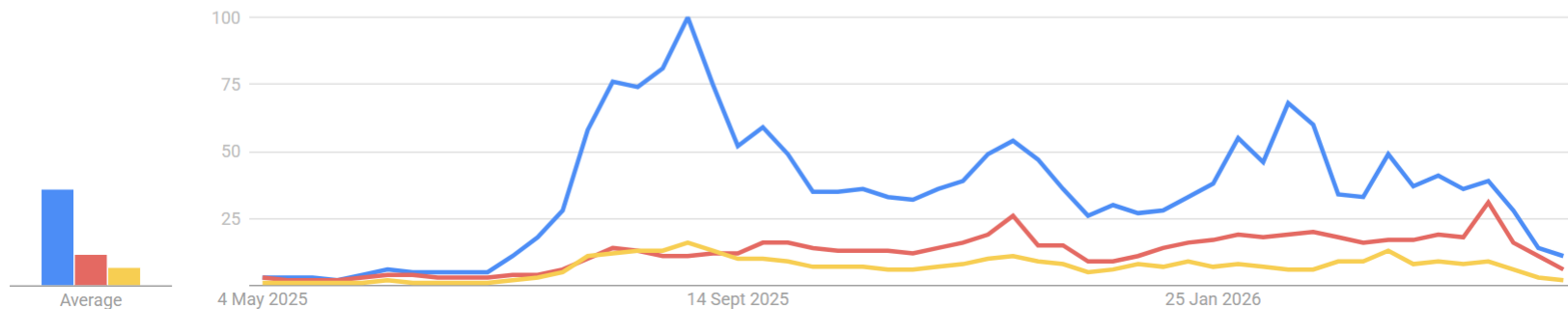
Interest over time 

TABLE OF CONTENTS

01

Hudl Statsbomb
recap

02

Sportmonks
recap

03

Demo

04

Closing slides

tinyurl.com/GRUNN26



01

Hudl Statsbomb
recap

 **open-data** Public

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master

3 Branches

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T

Add file

<> Code

 cddr Update competitions file to include Women's Euros	3bfbffe · 10 months ago	🕒 1,087 Commits
data	Update competitions file to include Women's Euros	10 months ago
doc	Upload docs with new branding	4 years ago
img	Delete statsbomb-logo.jpg	4 years ago
.DS_Store	Added 370 new games, updated 1087 games.	3 years ago
LICENSE.pdf	Update LICENSE.pdf	3 years ago
README.md	Update README.md	4 years ago

README

License

StatsBomb Open Data

Welcome to the StatsBomb Open Data repository.

StatsBomb are committed to sharing new data and research publicly to enhance understanding of the game of Football. We want to actively encourage new research and analysis at all levels. Therefore we have made certain leagues of StatsBomb Data freely available for public use for research projects and genuine interest in football analytics.

StatsBomb are hoping that by making data freely available, we will extend the wider football analytics community and attract new talent to the industry.

About

Free football data from StatsBomb

statsbomb.com/resource-centre/

- soccer
- open-data
- football-data
- football
- sports-stats
- sports-data

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Releases

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Packages

No packages published

Contributors 5



Hudl Statsbomb Open Data structure

The data is provided as **JSON files** exported from the Statsbomb Data API, in the following structure:

- competition and seasons stored in **competitions.json**
- matches for each competition and season, stored in the **matches folder**. Each folder within is named for a **competition ID**, each file is named for a **season ID** within that competition
- events and lineups for each match, stored in **events** and **lineups** respectively. Each file is named for a **match ID**

[Code](#) [Issues 35](#) [Pull requests 2](#) [Agents](#) [Security and quality](#) [Insights](#)

Files

master



Go to file

T

- data
 - events
 - lineups
 - matches
 - three-sixty
 - competitions.json**
- doc
- img
 - .DS_Store
 - LICENSE.pdf
 - README.md

open-data / data / competitions.json



cddr Update competitions file to include Women's Euros

3bfbffe · 10 months ago

[History](#)

Code

Blame



Raw



```
1  [ {
2    "competition_id" : 9,
3    "season_id" : 281,
4    "country_name" : "Germany",
5    "competition_name" : "1. Bundesliga",
6    "competition_gender" : "male",
7    "competition_youth" : false,
8    "competition_international" : false,
9    "season_name" : "2023/2024",
10   "match_updated" : "2024-09-28T20:46:38.893391",
11   "match_updated_360" : "2025-07-06T04:26:07.636270",
12   "match_available_360" : "2025-07-06T04:26:07.636270",
13   "match_available" : "2024-09-28T20:46:38.893391"
14 }, {
15   "competition_id" : 9,
16   "season_id" : 27,
17   "country_name" : "Germany",
18   "competition_name" : "1. Bundesliga",
19   "competition_gender" : "male",
```

```
[ {
  "competition_id" : 9,
  "season_id" : 281,
  "country_name" : "Germany",
  "competition_name" : "1. Bundesliga",
  "competition_gender" : "male",
  "competition_youth" : false,
  "competition_international" : false,
  "season_name" : "2023/2024",
  "match_updated" : "2024-09-28T20:46:38.893391",
  "match_updated_360" : "2025-07-06T04:26:07.636270",
  "match_available_360" : "2025-07-06T04:26:07.636270",
  "match_available" : "2024-09-28T20:46:38.893391"
}, {
  "competition_id" : 9,
  "season_id" : 27,
  "country_name" : "Germany",
  "competition_name" : "1. Bundesliga",
  "competition_gender" : "male",
  "competition_youth" : false,
  "competition_international" : false,
  "season_name" : "2015/2016",
  "match_updated" : "2024-05-19T11:11:14.192381",
  "match_updated_360" : null,
  "match_available_360" : null,
  "match_available" : "2024-05-19T11:11:14.192381"
}, {
  "competition_id" : 1267
```

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02

Sportmonks
recap



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Cricket



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3000 API Calls

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Football



4 league



API Calls

3000 API

Ready to explore more

MY LEAGUES



Football Free Plan

Search type to search all leagues and countries...

Total leagues in plan: 4

#ID

 Denmark #320

Superliga

271

Superliga Play-offs

1659

 Scotland #1161

Premiership

501

Premiership Play-Offs

513

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Statistics	✓	✓
xG + Pressure Index	—	✓
Odds + Predictions	—	✓
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Close

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qualifiers.

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€129/month



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Total

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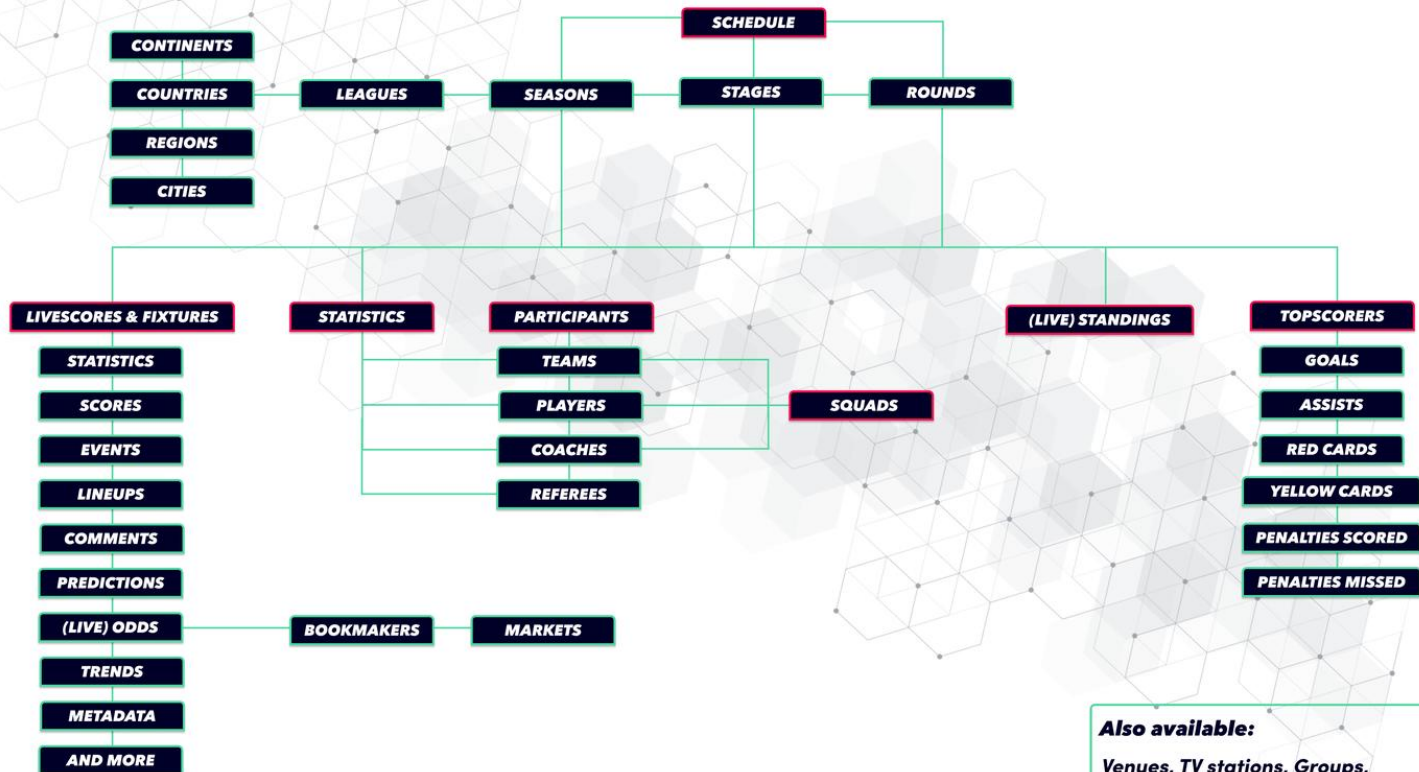
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LEAGUES



Also available:

Venues, TV stations, Groups,
Transfers, Rivals and More

Sportmonks: Fixture (match) by ID

```
sportmonks_0004.ipynb
```

```
[1]: import pandas as pd
import requests

[2]: API_TOKEN = "tqz8BHX200tyVADTRuvyBaGmLVrZkwcwrhfbRjR9T5ZAQWXovTUEBytl4onZ"
params = {"api_token": API_TOKEN}

Aberdeen vs Ross County ( 19146817 )

[3]: data = requests.get("https://api.sportmonks.com/v3/football/fixtures/19146817", params=params).json()["data"]

[4]: match = pd.json_normalize(data)

[5]: match.columns

[5]: Index(['id', 'sport_id', 'league_id', 'season_id', 'stage_id', 'group_id',
        'aggregate_id', 'round_id', 'state_id', 'venue_id', 'name',
        'starting_at', 'result_info', 'leg', 'details', 'length', 'placeholder',
        'has_odds', 'has_premium_odds', 'starting_at_timestamp'],
        dtype='object')
```

Sportmonks: Fixture (match) statistics

sportmonks_0005.ipynb

+

Python 3 (ipykernel)

```
[1]: import pandas as pd
import requests

[2]: API_TOKEN = "tqz8BHX200tyVADTRuvyBaGmLVrZkwcwrhfbRjR9T5ZAQWXovTUEBytl4onZ"
params = {"api_token": API_TOKEN, "include": "statistics.type;events;formations;timeline;lineups.details.type"}

[3]: data = requests.get("https://api.sportmonks.com/v3/football/fixtures/19146817", params=params).json()["data"]
match = pd.json_normalize(data)
match.columns

[3]: Index(['id', 'sport_id', 'league_id', 'season_id', 'stage_id', 'group_id',
        'aggregate_id', 'round_id', 'state_id', 'venue_id', 'name',
        'starting_at', 'result_info', 'leg', 'details', 'length', 'placeholder',
        'has_odds', 'has_premium_odds', 'starting_at_timestamp', 'statistics',
        'events', 'formations', 'timeline', 'lineups'],
        dtype='object')

[4]: statistics = pd.json_normalize(match.statistics[0])

[5]: statistics.head(5)
```

	id	fixture_id	type_id	participant_id	location	data.value	type.id	type.name	type.code	type.developer_name	type.model_type	type.stat_group
0	207022998	19146817	34	273	home	9	34	Corners	corners	CORNERS	statistic	offensive
1	207023003	19146817	84	273	home	2	84	Yellowcards	yellowcards	YELLOWCARDS	statistic	overall
2	207023280	19146817	1605	273	home	33	1605	Successful Dribbles Percentage	successful-dribbles-percentage	SUCCESSFUL_DRIBBLES_PERCENTAGE	statistic	offensive
3	207023287	19146817	1605	246	away	38	1605	Successful Dribbles Percentage	successful-dribbles-percentage	SUCCESSFUL_DRIBBLES_PERCENTAGE	statistic	offensive
4	207023271	19146817	45	273	home	66	45	Ball Possession %	ball-possession	BALL_POSSESSION	statistic	overall

sport round stage group aggregate league season venue state
weatherReport lineups events timeline comments trends statistics
periods participants odds premiumOdds ↗ inplayOdds postmatchNews
prematchNews metadata tvStations predictions referees formations
ballCoordinates sidelined metadata scores

03

Demo

Germany national football team

Julian Nagelsmann's key principles:

- gegenpressing intensity
- attacking aggressiveness
- defensive compactness

PPDA (Passes Per Defensive Action)

How hard we press without the ball.

Formula: $\text{PPDA} = \text{opponent completed passes} \div \text{our defensive actions (tackles, interceptions, duels, fouls) there.}$

Reading it: Lower PPDA $\Rightarrow$ more aggressive pressing; higher PPDA $\Rightarrow$ more passive block.

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The Strings That Bind Us

Episode aired Apr 26, 2023 · TV-MA · 57m



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Drama

Sport

The Greyhounds try a new strategy that has everyone thinking outside the box. Sam prepares to host a VIP guest at Ola's.

★ 8.3/10 8.4K

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How To Get Started In Football Analytics

29 AUG 2024 7 MIN READ

Since our inception, Hudl Statsbomb has been at the forefront of educating the next generation of football analysts. We're committed to providing materials and resources to develop the skills needed to enter the industry, from free datasets and code to industry-standard education and training courses. We've opened the doors to our extensive knowledge base, all to help aspiring analysts hone their craft.

One of the most common questions we receive is, "How do I get started in football analytics?" This article is our answer — a comprehensive guide that gathers all our resources in one place, designed to be your go-to reference for both inspiration and education. Whether you're just starting out or looking to upskill, you'll find everything you need here.

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sportmonks	Update statsbomb	8 hours ago	
statsbomb	Improve readability	8 hours ago	
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LICENSE	Initial commit	10 hours ago	
README.md	Initial commit	10 hours ago	
requirements.txt	Initial commit	10 hours ago	

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Ruslan Korniichuk

04

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Contributors 1

 **korniichuk** Ruslan Korniichuk



RUSLAN KORNIICHUK

Ukrainian Data and Platform Architect in Poland



Hire me

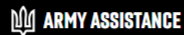
Solid experience of 10+ years in IT. Former Lead Engineer and Architect at Fortune 500 companies. Core areas: modern data platforms and cloud computing.

Public speaker at [European SME Congress](#), [Warsaw IT Days](#), [Data Science Summit](#), [Linux Autumn](#), and [EuroPython](#). Taught information system design and server-side technologies at the University of Silesia.

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