



Ruslan Korniiichuk

Football Analytics 201: Validating Tactical Principles with Statsbomb & Sportmonks



Pytech Summit

All about Python **2026**

21.05.2026



techevents

Football Analytics 201: Validating Tactical Principles

Ruslan Kornichuk | 21.05.2026

ver. 3.0.0



ANTONOV AN-124

Ruslan

The Innovator: Julian Nagelsmann

Who: The coach of RB Leipzig, Bayern Munich, and the Germany national team.

When: Late 2010s – Present.

How: Nagelsmann focuses on **gegenpressing** intensity, attacking aggressiveness, and defensive compactness. He utilizes metrics like PPDA to enhance tactical dominance.



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.

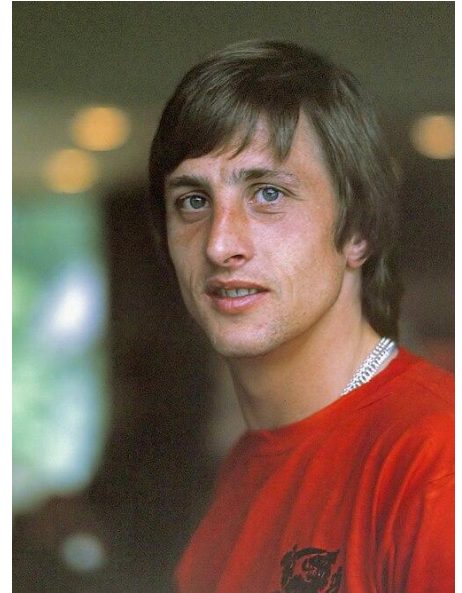


The Perfectionist: Johan Cruyff

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**".





● football analysis

Search term



● sports analytics

Search term



● football analyst

Search term



+ Add comparison

Worldwide ▼

Past 12 months ▼

All categories ▼

Web Search ▼

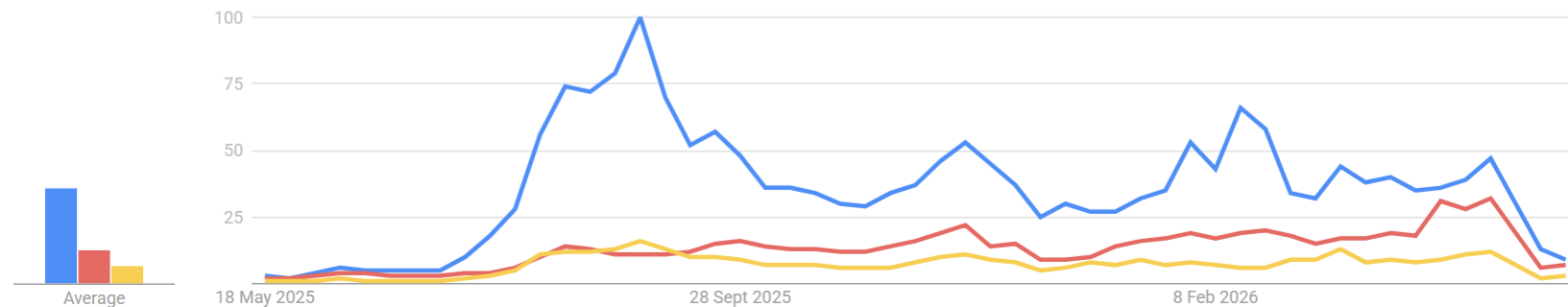
Interest over time 

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tinyurl.com/PZPN2026



01

Hudl Statsbomb recap

 **open-data** Public

Watch 228

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Starred 3.2k

master

3 Branches

0 Tags

Go to file

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

- Readme
- Activity
- Custom properties
- 3.2k stars
- 228 watching
- 912 forks
- Report repository

Releases

No releases published

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**



Files



master



Go to file



- 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,
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  "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",
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}, {
  "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

FREE SUBSCRIPTION

Football

Cricket



Football Free Plan



4 leagues



API Calls

3000 API Calls

Ready to explore more leagues and more data features?

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Manage

[Manage Team](#)[Get support](#)



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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Get started

Get started

Contact sales

Specials



Euro Club Tournaments

Get access to all UEFA European Club Tournaments.

[View leagues](#)Regular ☐ All-in ⓘ

€29/month



International Tournaments

Get access to all international tournaments and qualifiers.

[View leagues](#)Regular ☒ All-in ⓘ

€179/month



Next



5 leagues

Pick them yourself

2000 API calls

Get started

All leagues

2200+ leagues

5000 API calls

Contact sales

Choose the level of detail you need for the
upcoming tournament.

Features	Regular €129/mo	All-in €179/mo
Livescores	✓	✓
Lineups & events	✓	✓
Statistics	✓	✓
xG + Pressure Index	—	✓
Odds + Predictions	—	✓
News	—	✓

Close

Select Regular

Select All-in

Euro Club Tou

Get access to all U
Tournaments.

International T

Get access to all int
qualifiers.

All-in ⓘ

€29/month

All-in ⓘ

€129/month





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Add powerful features to get the most from your football data.

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Enhance your football app's capabilities with 'Extra API Calls'—the essential boost to fuel your hunger for more data. Upgrade now and stay ahead of the competition!

2000 API Calls



€29/month

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Football

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Billing cycle

Monthly

€179.00/mo

Yearly

Save €36.00

€143.00/mo

Subscription

€179.00

For 14 days € 0.00

Total

€0.00

Back

Next



API STRUCTURE

Subscription and API

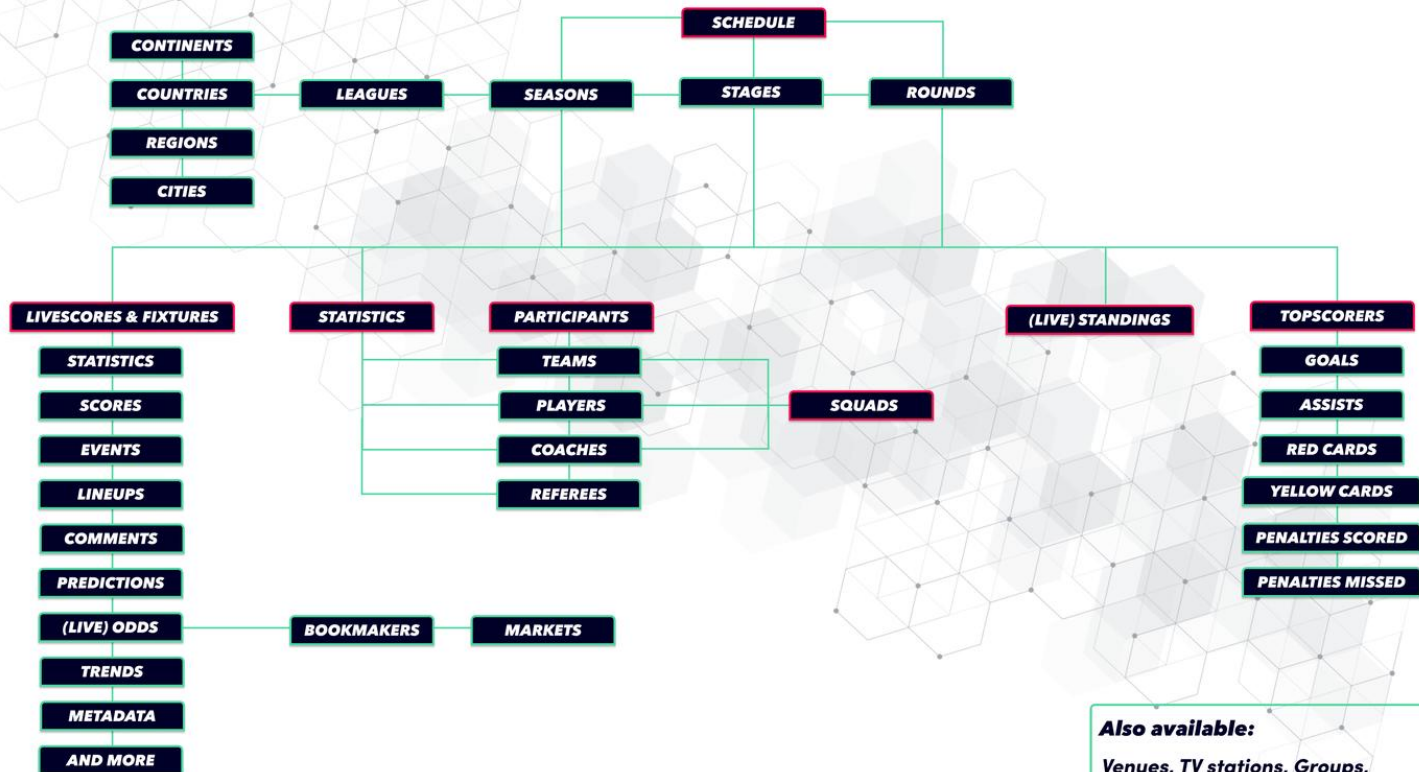
ENRICHMENTS

FILTERS

RESOURCES

TYPES

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)

Code

▼

```
[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.

**IMDb**

All ▾



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The Strings That Bind Us

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



Comedy

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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Director [Matt Lipsey](#)**Writers** [Phoebe Walsh](#) · [Sasha Garron](#) · [Keeley Hazell](#) >**Stars** [Jason Sudeikis](#) · [Hannah Waddingham](#) · [Jeremy Swift](#) >

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	Fix 'Spain vs Germany' match	1 hour ago
 statsbomb	Improve readability	5 hours ago
 .gitignore	Initial commit	8 hours ago
 LICENSE	Initial commit	8 hours ago
 README.md	Initial commit	8 hours ago
 requirements.txt	Initial commit	7 hours ago

 README

 Unlicense license



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Football Analytics 201: Validating Tactical Principles with Statsbomb & Sportmonks

About

- Football Analytics 201: Validating Tactical Principles with Statsbomb & Sportmonks
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Contributors 1

 **korniichuk** Ruslan Korniichuk

Languages

04

Closing slides

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Languages



RUSLAN KORNIICHUK

Data and AI Platform Architect in Poland



Hire me

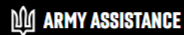
Solid experience of 11+ years in IT. Former Lead Engineer and Architect at Fortune 500 companies. Core areas: modern data platforms and cloud computing.

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.

The honest, reliable, and hardworking person with always a keen eye for work details. **Click the button above to hire me**



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