



Collection of NFL related Data Science projects

# Data Science topics

APIs/  
Webscrapping

SQL

Data Cleaning

Pandas

Data  
Visualization

Tableau

Cloud

A/B Testing

Clustering

Classification

Regression

(Gen.) AI

Streamlit

# Data Science topics



How do we connect this with the NFL topic?

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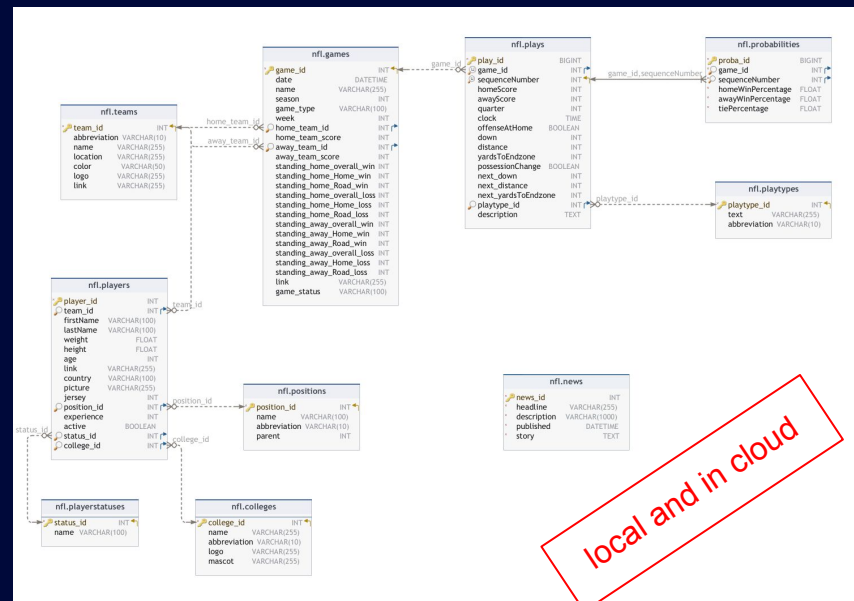
Streamlit



- Huge collection of (historic) US sports data
- Access to almost all data via API calls
- Entirely undocumented!



~ 10.000 API  
calls later



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General pages

- Home Page
- Schedule
- Teams

ML/AI Tools

- PlayAnalyzer
- ChatBot
- NewsBot
- LogoRecognizer

More Information

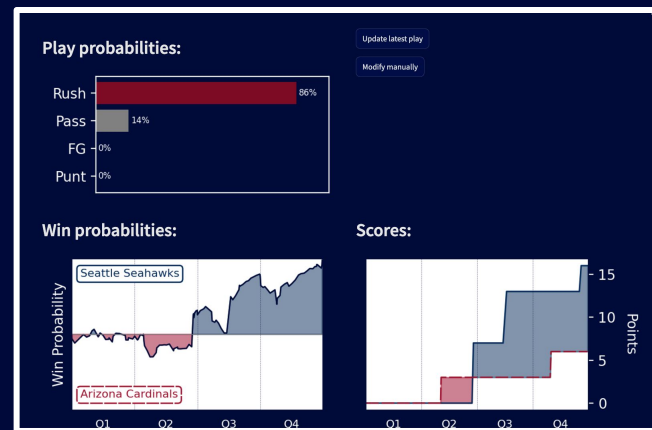
- Data Acquisition
- ML/AI models
- Provide Feedback

## NFL Gameday Analyzer

Welcome to the NFL Game Analysis App!

Use the sidebar to navigate to different sections of the app:

- Home Page:** come back to this page.
- Schedule:** Check the Schedule of the NFL.
- Teams:** Analyze teams and their rosters.
- PlayAnalyzer:** Perform Live Analysis of running games.
- ChatBot:** Discuss the latest NFL news, glossary, and rules with the well informed NFLBot.
- NewsBot:** Get summaries of recent news.
- LogoRecognizer:** Test your drawing skills and let an AI guess your favorite team.
- DataAcquisition:** Learn more about the underlying data and its origins.
- ML/AI models:** Explanation of the different machine learning models and generative AIs.
- Provide Feedback:** Let me know what could be done to improve the app or report bugs.

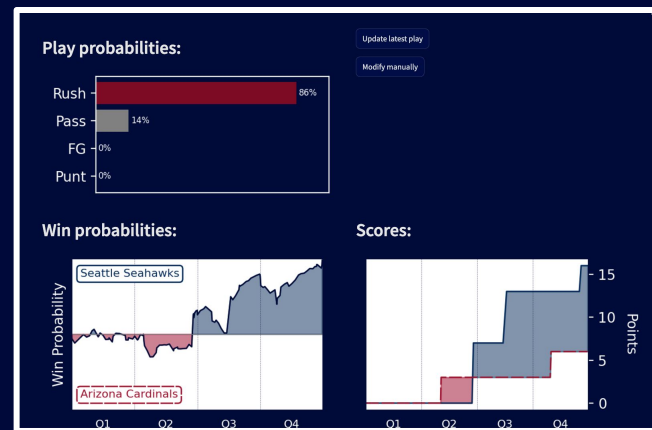


# Data Science topics



## How predictable is the NFL?

- Can we predict the next play type?  
(ML Classification)
- Can we predict (live) the outcome of the game?  
(ML Regression)



# Data Science topics



- Can a ChatBot help you understand the NFL better?
- Can an AI identify your drawings?

(Generative AI, LLM)

(Image Recognition)


# Let's head to the Streamlit App








## General pages

 Home Page Schedule Teams

## ML/AI Tools

 PlayAnalyzer ChatBot NewsBot LogoRecognizer

## More Information

 Data Acquisition ML/AI models Provide Feedback

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[Home Page](#)
[Schedule](#)
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### ML/AI Tools

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### More Information

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[ML/AI models](#)
[Provide Feedback](#)

## LogoRecognizer

Draw a logo of an NFL team and let the AI determine the team.

line

Stroke width:

16  
1 25

Stroke color:



Stroke opacity:

1.00  
0.00 1.00

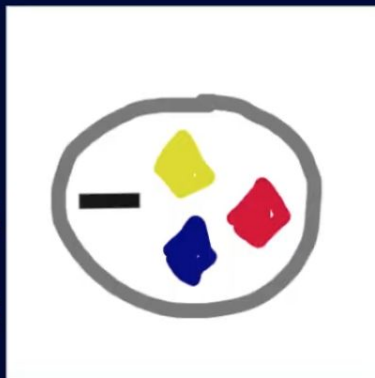
Fill color:



Fill opacity:

1.00  
0.00 1.00

Background:



AI prediction: I think you are drawing the Pittsburgh Steelers. I am 99% certain.

☒ Show upload settings: The prediction model is still in training. Feel free to add your own drawings to the database to improve it, in particular if the model's prediction was wrong.

Please select which team you have drawn:

Pittsburgh Steelers

Submit Image

Submission successful. Thank you!

Upload a (drawn) logo of an NFL team and let the AI determine the team.

File uploader:



Drag and drop file here

Limit 200MB per file • PNG, JPG, JPEG

Browse files



# Thanks!

[nfl-tools.streamlit.app](https://nfl-tools.streamlit.app)