

GRIDIRONIQ - NFL CONTRACT VALUE MODEL

BUILT WITH NFLREADYPY PACKAGE

// WHY WE BUILT THIS

Our NFL Contract Valuation System aims to predict NFL contracts and guaranteed values by analyzing player performance statistics alongside historical contract data. We designed the dashboard keeping in mind NFL front offices, sports media analysts, and fans that want to see how players are valued relative to the market.

// DASHBOARD FEATURES



Shortlist

Curated list of players ranked by contract prediction gap



Player Analysis

Player card with game stats, radar chart, LLM explanation



Team Analysis

Full roster view with expiring contracts vs predicted next deal, team cap breakdown



Compare

Player comparison with side-by-side stats and contract value



Smart Query

Query box to for targeted searches with built in LLM explanation



Contract Prediction

Generate contract predictions using historical data and baseline projections or create custom profile

// TECH STACK



// BUSINESS USE CASES

NFL Front Offices & Agents

NFL teams must know that every dollar they spend goes toward building a competitive roster. Our tool allows teams to easily find players who are performing above their current contract value in a scalable way.

Sports Media & Fans

Sports analysts constantly publish contract analyses. Our tool can help power those stories through its smart query and LLM features. Fans can use this tool to research and compare their favorite teams and players.

// DATA PIPELINE

Stage 1 - Data Ingestion

nflreadpy | Polars

Rosters

Seasonal Data

Contract Data

Spark Data Processing: Aggregate by player id and contract cleaning (guaranteed + cap%)

Stage 2 - Feature Engineering

Polars

Per Game Stats

Efficiency Metrics

EPA &
Explosiveness

Positional Rank

Final Dataset – 3914 players | 22 columns | Rank by position (QB, RB, WR, TE)

Stage 3 - ML Model

XGBoost | sklearn | GroupKFold | RandomizedSearchCV

Step 1: Regression

XGBoost

Step 2: Classification

Predicted vs Actual APY

3 outputs per position (12 models): next_inflated_apy, next_guaranteed_apy, next_years

Stage 4 - LLM Layer

OpenAI API

LLM - Explanation

OpenAI

Future Work

Inflation adjustment, full cap model, reverse query

Explains WHY player is over/undervalued and suggests next steps based on model + data

Stage 5 - Streamlit Dashboard

Streamlit | Plotly

Shortlist

Player
Analysis

Team
Analysis

Compare

Smart Query

Contract
Predictor

// KEY INSIGTS & TAKEAWAYS

- Dallas Cowboys QB Dak Prescott's contract sits \$15M above our model's predicted value. The team has not made the playoffs since showing a direct consequence of the cap space lost to an overpriced QB. Our tool could help flag this before signing.
- The Los Angeles Rams are the most cap-efficient team in the league. The Baltimore Ravens and Jacksonville Jaguars have the worst gaps, pointing to overspending across their roster.



Adam
Getzkin



Jay
Pederson



Mallika
Kommera



Zhen
Zhang



Zhixuan
Zhan