

2025

NATIONAL CHAMPIONSHIP

JANUARY 20 | ATLANTA

The Data Bowl: Predicting the 2025 CFP National Champion with Analytics



**COLLEGE
FOOTBALL
PLAYOFF**

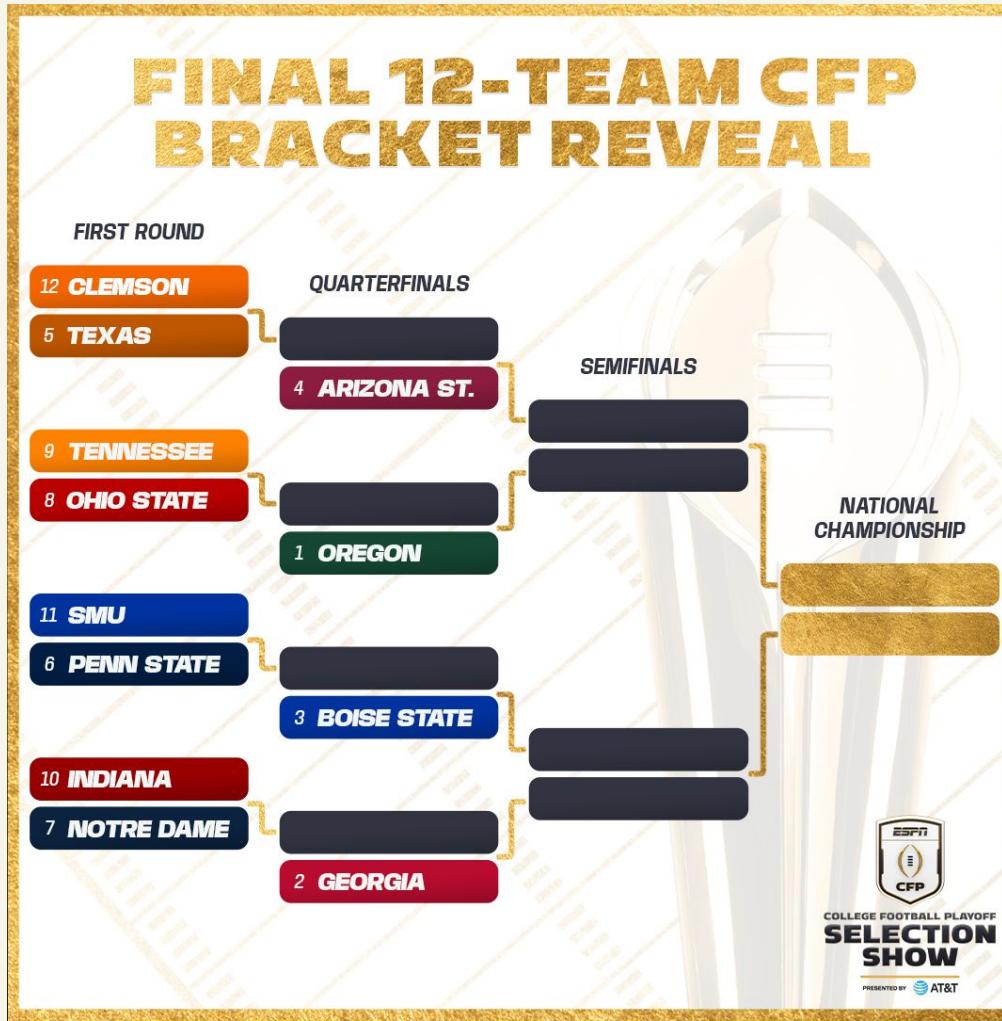
Presented by: Jesse Davila, Molly Mccann, Josh Garzaniti,
Collin Travasos, & Tyler Seroczynski



2024 CFP Bracket



COLLEGE
FOOTBALL
PLAYOFF



CFP National Championship Game History

2015	Ohio State Oregon	42 20
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2016	Alabama Clemson	45 40
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2017	Clemson Alabama	35 31
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2018	Alabama Georgia	26 23
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2019	Clemson Alabama	44 16
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2020	Clemson LSU	25 42
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2021	Ohio State Alabama	24 52
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2022	Georgia Alabama	33 18
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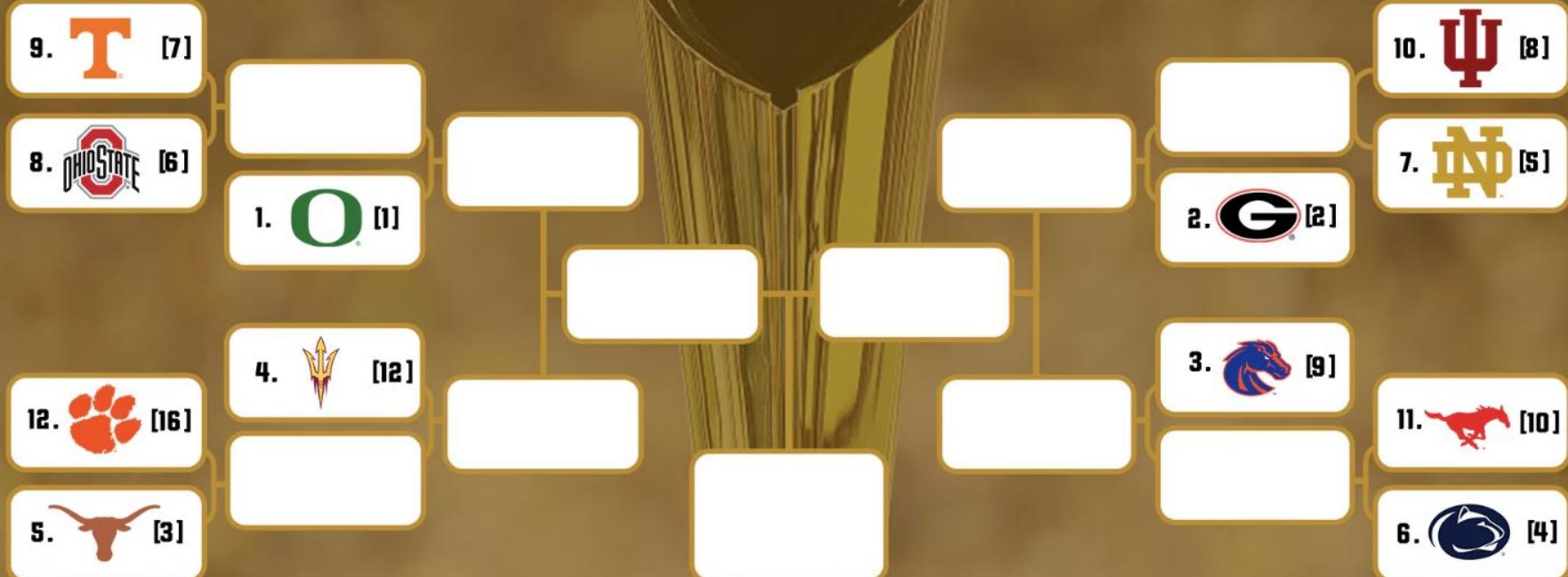
2023	TCU Georgia	7 65
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2024	Washington Michigan	13 34
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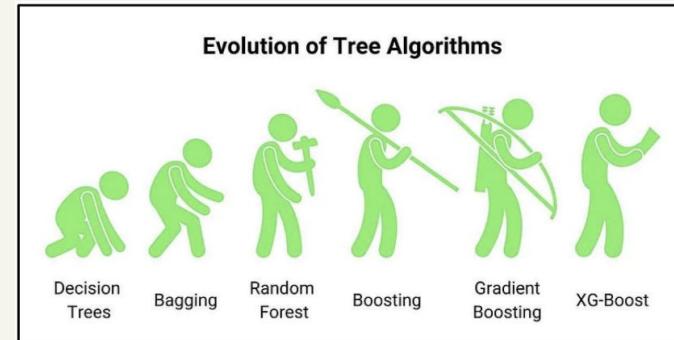
COLLEGE FOOTBALL PLAYOFF

SEED RANK



Model Used

- XGBoost Model
- Feature Selection consisting of:
 - EPA differential (Offensive - Defensive),
 - Win probability (based on WPA),
 - an upset factor (adds marginal Wp based on EPA diff),
 - a health differential factor,
 - and A Gini Index (TBD)



Key Impact of Player Injuries on Team Performance:

Offensive Players (QB, RB, WR, OL): Losing a top-tier player has the most significant impact, especially for quarterbacks. Backup players' effectiveness varies by tier and position, with Tier 2 backups providing more stability.

Math for Backup Qbs: QB1:(-0.35). | QB2: (+/- 0.2) & QB3 (+/- 0.05–0.1).

Defensive Players (DB, LB, DL): Injuries to top-tier players also impact defense, particularly in the secondary and linebacker positions (-0.12). Backup performance varies, with Tier 2 players offering moderate recovery (+/- 0.05–0.07) and Tier 3 players having less impact (+/- 0.03–0.04).



Injury Impact Summary by Team:

- **Teams with Moderate Impact:**
 - **Notre Dame** (-0.05): Minor losses offset by backups.
 - **Clemson** (-0.08): Balanced injuries with partial recovery.
 - **Penn State** (-0.10): Defensive losses outweighed backups.
 - **Texas**: (-0.04) Big loss at LT, but backup has lived up to team expectations
 - **Oregon** (-0.05) Lost key players early in season, but have played the whole year w out them.
 - **Ohio State** (-0.10): Two key OL out with sufficient backups.
 - **Arizona State** (-0.05): Slightly affected by minor injuries.
 - **Boise State** (-0.05): Slightly affected by minor injuries.
- **Teams with Significant Impact:**
 - **Indiana** (-0.13): Key injuries with limited backup contribution.
 - **Georgia** (-0.25): Major QB loss, backup offers slight relief.

No Impact: SMU and Tennessee faced no notable injuries.

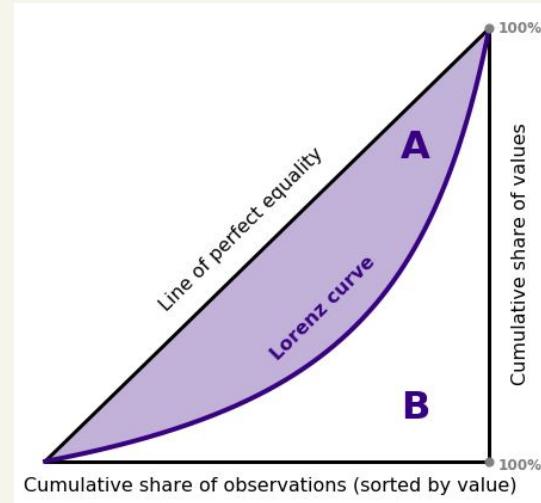


Gini Component

How unevenly the WPA and EPA for the favored team in each matchup varies amongst each other

Weeks 10 - 15

No home or away specific wpa variable in original dataset → derived variable dependent on whether favored team was home or away



Gini Component

General:

Low index:

- May indicate having a more balanced play style

High index:

- Could suggest heavy reliance on star players or key plays

High WPA Gini:

- Only few players or plays have significant impact on game outcomes

High EPA Gini:

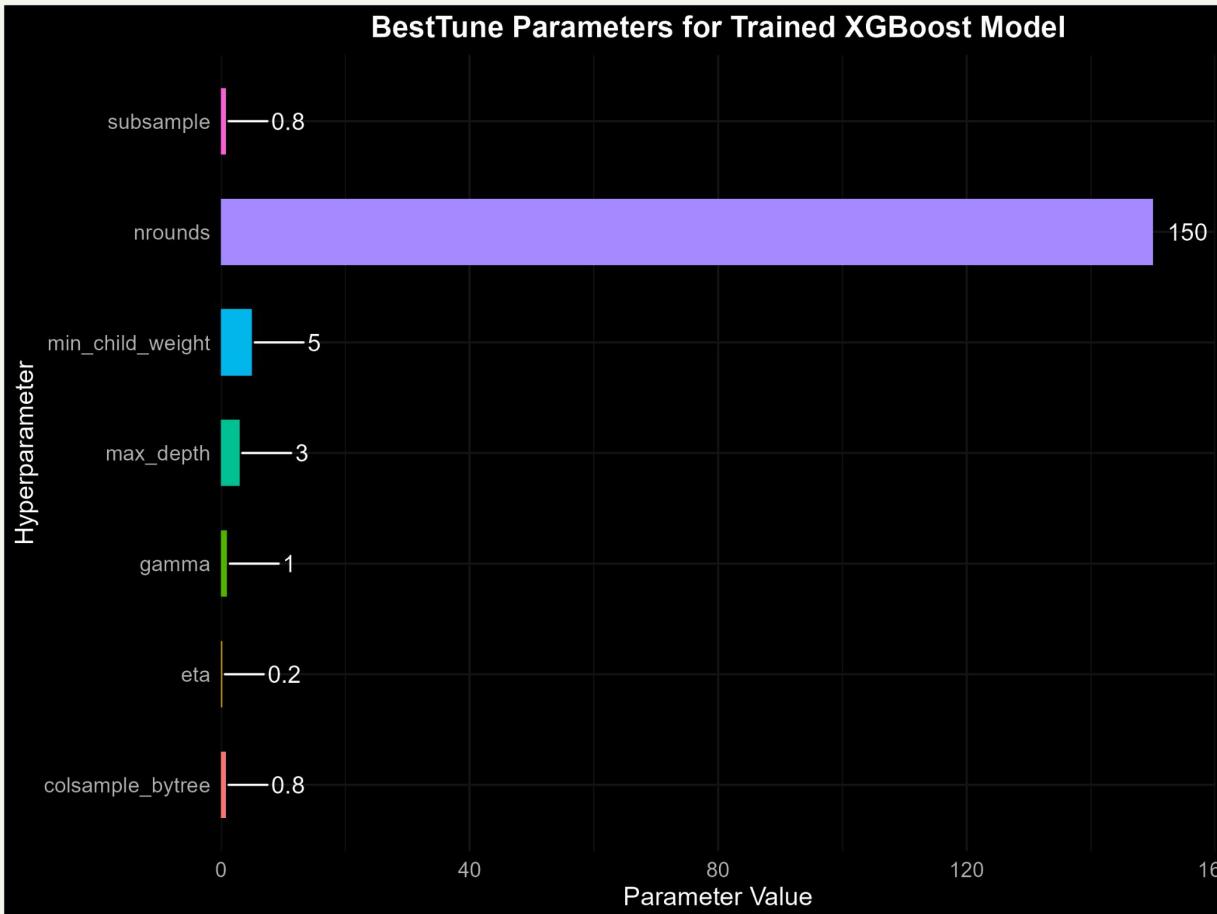
- Most of the point-scoring contributions come from a few explosive plays or players

0 = perfect equality in distribution

1 = perfect inequality in distribution



Tuning the Model



Model Results after training + tuning

Our Final Model Accuracy: Is 81%

Final model accuracy: 0.8122977



Model Predictions

First Round

Home



v

Away



v



v



v



Model Predictions

Quarter-Finals

Home



Away



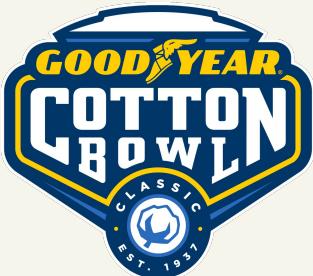
Model Predictions

Semi-Finals

Home



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Away



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Model Predictions

National Championship

Home



*

2025

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Away



Model Predictions

Our National Championship Winner





COLLEGE FOOTBALL PLAYOFF

SEED RANK

