

It's time...



COLLEGE FOOTBALL PLAYOFF

SEED RANK

9. [7]

?

8. [6]

?

1. [1]

?

?

?

12. [16]

?

5. [3]

?

?

?

?

?

10. [8]

?

?

?

?

?

?

?

CFB Playoff Bracket Prediction

Team 5: Alaina Brady, John French, Taylor Hill, Nolan
Santacroce, and Paul Trusela

Agenda

Playoff Info

Past Winners and Format

Our Model

Type and Content

Our Bracket

Final Predictions



Playoff History

Previous Winners:

- Michigan (2023), Georgia (2022), Georgia (2021)

Next:

- ... Notre Dame?

Layout:

- 2014-2024:
 - Four teams selected
 - Two semi-final games
 - One national championship game
- 2024-2025: New expanded 12-team format
 - Five highest-ranked, conference champs automatically move on
 - Top four teams receive first-round bye
 - Teams 5-12 play in the first round, hosted by the higher ranked team of the matchup



About the 12-Team College Football Playoff | College Football on ESPN



Share

12-TEAM

COLLEGE FOOTBALL PLAYOFF



ESPN

Watch on YouTube

2024 CFP Teams

1. Oregon (13-0)
2. Georgia (11-2)
3. Boise State (12-1)
4. Arizona State (11-2)
5. Texas (11-2)
6. Penn State (11-2)
7. Notre Dame (11-1)
8. Ohio State (10-2)
9. Tennessee (10-2)
10. Indiana (11-1)
11. SMU (11-2)
12. Clemson (10-3)



Analysis

Our Model

- Type: Random Forest
- Final Accuracy: 77.5%
- Important information:
 - Time crunch + field position
 - WPA + EPA
 - Home team advantage
 - Had to look into neutral sites
 - Player contribution
 - Injuries, transfers ... **criminals**

Selected Features:

1

SP+

2

ELO

3

EPA

4

WPA

5

Player + Team
Rating

6

Coach Rating

SP +

- “a tempo- and opponent-adjusted measure of college football efficiency”
- Made with a function

ELO

- “rewards wins against other good players, while not over-rewarding wins against inferior competition”
- Made with a function

EPA/WPA

- difference between the expected points of two consecutive plays
- how much a player's individual plays contribute to a win
- Pulled from PBP data

Player Rating

Considerations:

- Injuries/Suspensions/Transfers
- PFF Grades
- Usage
- PPA

How we obtained the data:

- Injuries, etc: open source research
- PFF: Pro Football Focus
- Usage + PPA: cfbfastR



Player and Team Rating

Strategy

- Player Weight = usage * PPA
- Injured Player -> usage = 0
 - also transfers, suspensions, deaths
- Top 15 player weights = team score

Considerations

- Historical injuries less recorded
- Increased use of transfer portal



A photograph of a football coach in a red polo shirt with a white 'U' logo, pointing his right index finger upwards. He is standing on a grassy field at night. In the background, there are stadium lights, a scoreboard, and a police officer in uniform standing nearby.

Coach Rating

Considerations:

- Strength of schedule
- Win Percentage
- Years Coached

How we obtained the data:

- cfbfastr

Coach Rating

Strategy

- # years coached * career schedule strength * win %

Considerations

- Difficulty accumulating championship appearances



Results

Our model

Confusion Matrix and Statistics

		Reference	
		Prediction	loss win
Prediction	loss	309	100
	win	137	508

Accuracy : 0.7751
95% CI : (0.7487, 0.8)
No Information Rate : 0.5769
P-Value [Acc > NIR] : < 2e-16

Kappa : 0.5343
McNemar's Test P-Value : 0.01936

Sensitivity : 0.6928
Specificity : 0.8355
Pos Pred Value : 0.7555
Neg Pred Value : 0.7876
Prevalence : 0.4231
Detection Rate : 0.2932
Detection Prevalence : 0.3880
Balanced Accuracy : 0.7642

'Positive' Class : loss



COLLEGE FOOTBALL PLAYOFF





2025

NATIONAL CHAMPIONSHIP

JANUARY 20 | ATLANTA

Future Works

- More historical injury data is needed to better train the model
 - Implement on a weekly basis rather than season
- Implement bowl experience and playoff titles for coaches

Sources

- 30A Sports Picks. "2023 College Football Bowl Season Injury Report." 2024 College Football Game Picker, 6 Dec. 2023, collegefootballgamepicker.com/Picker/2023-college-football-bowl-season-injury-report/.
- "About the 12-Team College Football Playoff." YouTube, YouTube, 18 July 2014, www.youtube.com/watch?v=czXmxBuNV6E.
- Anderson, Jerran. "College Football Injury Report: Week 8." Saturday Blitz, 21 Oct. 2016, saturdayblitz.com/2016/10/21/college-football-injury-report-week-8/.
- Anderson, Jerran. "College Football Injury Report: Week 9." Saturday Blitz, 28 Oct. 2016, saturdayblitz.com/2016/10/28/college-football-injury-report-week-9/.
- "Boise State Logo." Seeklogo, seeklogo.com/free-vector-logos/boise-state. Accessed 12 Dec. 2024.
- "College Football Playoff Bracket: Schedule, Rankings, Seeds." NCAA.Com, NCAA.com, 11 Dec. 2024, www.ncaa.com/news/football/article/2024-12-08/college-football-playoff-bracket-schedule-rankings-seeds.
- "College Football Playoff National Championship." Wikipedia, Wikimedia Foundation, 9 Dec. 2024, en.wikipedia.org/wiki/College_Football_Playoff_National_Championship.
- Collins, Michael. "College Football Injury Watch: Top 25 Week 10 Update." FanSided, 29 Oct. 2014, fansided.com/2014/10/29/college-football-injury-watch-top-25-week-10-update/.
- ESPN Staff. "Los Angeles Rams Win Over San Francisco 49ers Moves Them Closer to Top of NFC West." ESPN, 12 Dec. 2024, espn.com/nfl/story/_/id/42939192/los-angeles-rams-win-san-francisco-49ers-closer-top-nfc-west.
- FantasyPros Staff. "2022 College Football Bowl Game Player Opt-out Tracker & Head Coaching Changes." FantasyPros, 27 Dec. 2022, www.fantasypros.com/2022/12/college-football-2022-bowl-game-player-opt-out-tracker-head-coaching-changes/.

Sources

- Fearon, Sebastian. “Most Impactful College Football Injuries Heading into Week 6.” Sports Gambling Podcast, 3 Oct. 2024, www.sportsgamblingpodcast.com/2024/10/03/most-impactful-college-football-injuries-heading-into-week-6.
- Fox, David. “The 2014 All-Gone Team: College Football’s Key Players out for the Year - Athlonsports.Com | Expert Predictions, Picks, and Previews.” Athlon Sports, 26 Aug. 2014, athlonsports.com/college-football/2014-all-gone-team-college-football-key-players-out-year.
- Frierson, John. “Bulldog Nation Has ‘a New Standard for Excellence.’” UGA Today, 15 Jan. 2022, news.uga.edu/bulldog-2021-championship-parade-ceremony/.
- “Georgia Athletics Logo.” Wikimedia Commons, commons.wikimedia.org/wiki/File:Georgia_Athletics_logo.svg. Accessed 12 Dec. 2024.
- Hutchinson, Derick. “Who Are the 10 Florida Players Suspended for Opening Game against Michigan Football?” WDIV, WDIV ClickOnDetroit, 30 Aug. 2017, www.clickondetroit.com/sports/2017/08/30/who-are-the-10-florida-players-suspended-for-opening-game-against-michigan-football/.
- “Injuries, Inexperience and Inconsistency Lead to an Unusual 2014 Season for Tech.” Virginia Tech Athletics, 11 Dec. 2014, hokiesports.com/news/2014/12/12/injuries-inexperience-and-inconsistency-lead-to-an-unusual-2014-season-for-tech.

Sources

- Kercheval, Ben. “How Top College Football Teams Have Dealt with Major Injuries in 2015.” Bleacher Report, Bleacher Report, 2 Oct. 2015, bleacherreport.com/articles/2574809-how-top-college-football-teams-have-dealt-with-major-injuries-in-2015.
- Kirshner, Alex. “2016 College Football Playoff Injuries: Washington’s in the Worst Shape.” SBNation.Com, 30 Dec. 2016, www.sbnation.com/college-football/2016/12/30/14077148/injury-report-college-football-playoff-washington-alabama-clemson-ohio-state.
- Lassan, Steven. “College Football’s All-Injured Team for 2015.” Athlon Sports, 25 Sept. 2015, athlonsports.com/college-football/college-football-s-all-injured-team-2015.
- Mellor, Cam. “NCAA Football Injury Report Tracker for All 134 FBS Teams.” College Football Network, 6 Dec. 2024, collegefootballnetwork.com/college-football-injury-report-tracker/.
- NCAA.com. “How the College Football Playoff Works.” NCAA.Com, 27 Nov. 2024, www.ncaa.com/news/football/article/2024-11-27/how-college-football-playoff-works#:~:text=Starting%20in%20the%202024%2D25,receive%20a%20first%2Dround%20bye.
- “Notre Dame Fighting Irish.” Wikipedia, Wikimedia Foundation, 13 Nov. 2024, en.wikipedia.org/wiki/Notre_Dame_Fighting_Irish.
- “Ohio State Buckeyes Logo.” Wikipedia, Wikimedia Foundation, en.m.wikipedia.org/wiki/File:Ohio_State_Buckeyes_logo.svg. Accessed 12 Dec. 2024.

Sources

“Oregon Ducks Logo.” Wikimedia Commons, commons.wikimedia.org/wiki/File:Oregon_Ducks_logo.svg. Accessed 12 Dec. 2024.

“Penn State Logo .” Seeklogo, seeklogo.com/free-vector-logos/penn-state. Accessed 12 Dec. 2024.

Rapp, Timothy. “NFL Rumors: Notre Dame’s Marcus Freeman Linked to Bears HC Job after Eberflus Firing.” Bleacher Report, 1 Dec. 2024, bleacherreport.com/articles/10145378-nfl-rumors-notre-dames-marcus-freeman-linked-to-bears-hc-job-after-eberflus-firing.

Russo, Ralph D. “Michigan Overpowers Washington 34-13 as Jim Harbaugh Delivers a National Title.” AP News, AP News, 9 Jan. 2024, apnews.com/article/michigan-washington-cfp-championship-score-0f286d1fb129620e77e667cdc73fd159.

Rutledge, Maitland. “College Football Week 12 Injury Report: Ian Book Returns, Tua Will Play.” FanSided, 16 Nov. 2018, fansided.com/2018/11/16/college-football-week-12-injury-report-ian-book-tua/.

Rutledge, Maitland. “College Football Week 2 Injury Report: LSU Loses Defender for the Year.” FanSided, 7 Sept. 2018, fansided.com/2018/09/07/college-football-week-2-injury-report/.

Rutledge, Maitland. “College Football Week 7 Injury Report: Alabama Loses Trevon Diggs Indefinitely.” FanSided, 12 Oct. 2018, fansided.com/2018/10/12/college-football-week-7-injury-report-trevon-diggs-out-indefinitely/.

Sources

- Rutledge, Maitland. "College Football Week 9 Injury Report: Sam Ehlinger Questionable." FanSided, 26 Oct. 2018, fansided.com/2018/10/26/college-football-week-9-injury-report-sam-ehlinger/#.
- Schnell, Lindsay. "Oregon Keeps Eye on Title despite Season Plagued by Major Injuries." SI, Sports Illustrated, 30 Dec. 2014, www.si.com/college/2014/12/31/oregon-ducks-rose-bowl-injuries.
- Stuckey. "2023 College Football Roster News: Transfer Portal, Bowl Opt-Outs & Injury Tracker." Action Network, 27 Dec. 2023, www.actionnetwork.com/ncaaf/2023-college-football-news-tracker-bowl-opt-outs-player-injuries-transfer-portal-more.
- "Texas Longhorns Logo." Wikipedia, Wikimedia Foundation, en.m.wikipedia.org/wiki/File:Texas_Longhorns_logo.svg. Accessed 12 Dec. 2024.
- "Texas Longhorns Logo." Wikipedia, Wikimedia Foundation, en.m.wikipedia.org/wiki/File:Texas_Longhorns_logo.svg. Accessed 12 Dec. 2024.
- "Turf Field Images." Adobe, stock.adobe.com/search?k=turf+field. Accessed 12 Dec. 2024.
- Verros, John. "Study: College Football Injury Overview." Sports Info Solutions, 27 Apr. 2022, www.sportsinfosolutions.com/2022/04/27/study-college-football-injury-overview/.
- Weiss, Brad. "College Football Injury Report: Week 4." FanSided, 23 Sept. 2016, fansided.com/2016/09/23/college-football-injury-report-week-4/.
- Weiss, Brad. "College Football Week 2 Injury Report: Big-Name Quarterbacks to Miss Time." FanSided, 8 Sept. 2017, fansided.com/2017/09/08/college-football-injury-report-week-2-2/.
- "Will Howard Named Ohio State's Starting Quarterback." Ohio State, 16 Aug. 2024, ohiostatebuckeyes.com/news/2024/8/16/football-will-howard-named-ohio-states-starting-quarterback.