Can the Improved Linear Model be improved upon for the expanded College Football Playoff?

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Abstract

Now that the College Football Playoff (CFP) has increased the number of invited teams from four to twelve, this article will compare how well the original model's weights performed in the first year of this expanded championship (2024). This article also includes the performance of newly generated sets of weights using the updated criterion of attempting to match this significantly larger group that the CFP committee now selects (as its dozen championship playoff participants).

1. Introduction

Even though the National Collegiate Athletic Association (NCAA) has attempted to decrease the controversy regarding which teams will compete for its yearly, college football championship by deciding to invite an additional eight teams, starting with this past year (2024), the fans will probably now clamor for even *more* teams/playoff games because there will always be (in some fans' minds) certain injustices concerning some small number of teams being unfairly excluded from this opportunity to be crowned as the best team (at the conclusion of that season). Thankfully, this article will *not* be concerned with if twelve is the most appropriate number of teams to be invited to have an opportunity to earn this recognition, or, if the *best* twelve teams were actually invited (by the CFP selection committee).

After briefly reviewing the basic approach of the Improved Linear Model (ILM), and how well it has performed prior to these eight additional teams being invited to compete, the scope of this particular methodology will be widened to work with the larger number of invited teams. Several new sets of weights for this model will be generated and how well these – and the original set of – weights performed in 2024 will be presented.

2. Background

As mentioned in Trono (2020), the power rating system described by Carroll et al (1988) is an iterative process that determines a reasonable strength of schedule (SOS) value, that converges to an intuitively accurate set of SOS values for the teams – and season – in question. A team's power rating is the sum of the OD and SOS computed values, where OD represents the average, overall difference between the number of points a team scored minus the number of points that they allowed.

It was also noted in Trono (2020) that the power rating system matched 16 of the 24 teams chosen by the CFP committee, from 2014-2019, when using the full margin of victory (MOV). If the set of game scores was modified so that only wins and losses mattered, i. e. setting the MOV to be at most one point, then the power rating system, when excluding MOV (which will now be

referred to as no-MOV), matched a somewhat different collection of 20 (of the 24 teams chosen). This strong affinity between those two sets of power ratings and the CFP committee's selections led to the investigation of a linear model incorporating these two team ratings as well as each team's number of losses.

Using the first four years (2014-2017) as the training data set, one million sets, of three random weights – in the range zero to one, were generated. From these preliminary results, modifications were made to this initial linear model which simply adds the product of those two power ratings and the first two random weights, and then subtracts from that sum the product of the losses for that team by the third random weight. The first modification was to increase the range of these of random weights for the no-MOV power rating since there is much less variation in those values than the power ratings produced from using the actual scores. With this in mind, the random weight that would be multiplied by the power rating using the full MOV remained in the zero to one range; however, the randomly generated weight for the no-MOV rating value was multiplied by one hundred, and the penalty for each loss was also multiplied by ten. These small changes increased the number of very accurate random weight trios by almost a factor of 500. (More specifically: the number of original weight sets (11) that matched 14 of the 16 top four teams in the training data set was significantly increased (5119) when the subsequent one million weight sets were evaluated.)

The other modification was to separate both of the team's power ratings into their constituent components (OD and SOS), thereby increasing the weight set size from three to five: two weights for each rating – and the team loss penalty weight. Incorporating these two modifications produced what is now referred to as the Improved Linear Model (ILM), and working with the same training data set, another million random weight sets were generated again and the most accurate ones correctly matched 14 of the 16 teams chosen by the CFP committee as well as matching the exact position (anywhere in the range from the #1 team to the #4 team) 9 times. (Those positions are very important since the #4 teams plays the #1 team in one semi-final contest, leaving team #3 to play team #2 in the other semi-final.)

Since there were roughly 40 sets (of these five weights) that produced this level of performance, the weights which also generated the highest, overall Spearman Correlation Coefficient (SCC) with the committee's ranking of the top 25 teams (for the training data) was the set chosen. There was also one weight set (in the million that were generated) that had 10 exact matches, though only 13 of the 16 top four invited teams were matched (from 2014-2017). However, the SCC for the top 25 teams (SCC-25) was significantly lower for this set of weights (0.77288) than the one for 9 exact matches, and 14 of the 16 top four teams (0.83923), which is also why that latter set of weights was chosen. (These two quantities will now be notated as 10,13 and 14,16.) In the two years after the training set, i. e. 2018 and 2019, the 10,13 weights only had one exact match each year as well as matching only three of the top four in both, i. e. 12,19 in total, whereas, the chosen weight set matched all eight teams (six exactly), bringing its overall performance to 15,22 over the CFP's first six years. (For just 2018 and 2019: 10,13 → 2,6; 9,14 → 6,8. In fact, the 9,14 weights also matched the top eight teams exactly in 2018 – which is the first year after the training data set: 2014-2017.)

Because of the very restrictive, athletic scheduling policies that were being enforced during COVID, 2020 will not be included in any analysis in this report since there were not many games

played between teams in different conferences, which would definitely impact any computed power ratings. However, in those other first nine years of the CFP, the ILM has exactly matched the position for 18 of the 36 teams, and 33 correct matches overall. (Excluding the first four years of training would result in the performance level of 9,18 for those 20 teams who appeared in the committee's top four teams from 2018-19 and 2021-2023.)

By retrospectively examining how the original ILM weights performed with regards to the committee's top twelve teams, in those nine years, its performance level was 31,96 (for those 108 invited teams). This also assumes that these rankings – as generated by the CFP selection committee – would not be any different regardless if four, or twelve, teams were being invited to compete in the CFP. The question then was: would it be possible to randomly generate other sets of weights that might perform better than these original ILM weights in subsequent years?

3. New Weights for Matching the CFP Committee's Top Twelve

Unlike the original ILM, that was described in Trono (2020), the results that were produced, during the Monte Carlo generation of the much larger number of set (roughly 15 billion) of these five random weights, to attempt to match the CFP committee's top twelve teams (over nine years), had several interesting criteria to consider when deciding which set of weights were the most accurate. After examining this newly generated, larger collection of weight sets, there were quite a few sets that matched 100 of the 108 teams that appeared in the top twelve positions over the nine years in question (2014-2023; excluding 2020 – due to COVID scheduling related anomalies). The number of exact matches in these instances ranged from 29 up to 33 (for those specific weight sets). However, many sets of weights had 99 matches and also matched 38 of the top twelve teams selected exactly. A significantly larger group matched 41 teams exactly, but only matched 96 of the 108 top twelve teams. Those latter two weight set results sum to 137 in all (38 + 99 = 41 + 96) when combining those two counts; 138 is the largest such combination found – with 40 exact matches and 98 matches overall. (The weight sets with the highest SCC-25 values would also be chosen in these cases, when more than one set of a certain performance level was generated.)

Any weight set with five more exact matches, and one fewer overall match (than the set it is being compared against), appears to be somewhat *better*; therefore, the conjecture is that 38,99 could be more likely to generate a more accurate ranking than the weight set that produced the 33,100 level of performance – if only one weight set had to be selected/used. With regards to the two other weight sets, the previous study, Trono (2020), using only those four years (2014-17) of training data, seemed to imply that overfitting to realize the largest number of exact matches could lessen the overall weight performance as seen in 2018 & 2019 with regards to the 10,13 versus 9,14 example (as mentioned previously). Therefore, it seems wise to still favor the chosen weight set that produced 38,99[1]- over the ones yielding 41,96 and 40,98 – to possibly avoid the same behavior. Including the original ILM weights, that brings our total to five different weight sets to evaluate the 2024 season with.

Besides using the SCC-25 value, to select one set, from amongst the many sets of weights producing the same matching performance, it would also be interesting to evaluate the weight set

[1] There were two weight sets that produced the same SCC-25 value, so those five pairs of weights were averaged, and this new set generated the identical yearly SCC-25 values as well as matching the same results: 38,99.

that actually achieved the highest SCC-25 value over the nine years of training data as well. (The name SCC will be associated with this weight set in subsequent tables.) Also, since the previous study, Trono (2020), only investigated matching the top four teams that were deemed worthy of being invited (by the CFP committee), a new formula was devised to provide another objective, quantitative measure to maximize a weight set's performance – besides the number of exact and overall matches in the top twelve CFP selections. This formula assigns a rewarded point value for each rank; the closer the prediction is to the CFP rank, the larger the portion of this point value that will be earned. In this formula, it seemed more important to match the higher rank teams, and so exactly matching the CFP #1 team would be worth 100 points whereas exactly matching the #12 would only be worth 34 points. The values in the second row of Table 1 below decrease in a linear fashion, starting with subtracting eleven and then ten – all the way down to a one point difference between the full reward for matching the teams ranked eleventh and twelfth (by the CFP committee).

The value earned per rank would be reduced by the square of the difference between the weight set's prediction and the actual CFP rank, and this strategy will be referred to as F_Sqr. The other strategy, F_*, will reduce the value earned as well – but in this case, the reduction is multiplicative in nature; for each position that the prediction is further away from the actual CFP rank, the point value reduction is another 10%. So, for example, if the prediction for the team ranked as the fourth team is off by three, the value awarded for the prediction produces an award of 61 points (70 – 9) when applying the F_Sqr approach, whereas F_* would reduce the award by 30% yielding 49 points (70 * 0.7). The bottom two rows in Table 1 illustrate the reduction that would occur for the differences appearing in the top row in said table. These two measures can also be used as a criterion for choosing a weight set and so F_Sqr and F_* will be used both as the name for an evaluation measurement as well as the name of the weight set that maximized that quantity for all generated weight sets.

	1	2	3	4	5	6	7	8	9	10	11	12
Value	100	89	79	70	62	55	49	44	40	37	35	34
F_Sqr	-1	-4	-9	-16	-25	-36	-49	-64	-81	-100	-121	-144
F_*	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.0

Table 1 – Point and update values, with regards to how close a set of weights is (to CFP top twelve).

How well all eight models performed (in 2024) appears in Table 2 It was a little surprising that the original ILM weight set achieved the highest SCC-25 value. It seems like the weights associated with the 38,99 model had the best results since it was the only one to have eleven teams in *its* top twelve along with three exact matches. This 38,99 model had an only slightly smaller SCC-25 value (than the original ILM) as well as it also being associated with the highest F_Sqr, F_* and SCC-12 values (of the eight models, which is not so surprising given its strong performance in 2024). The Appendix includes many tables which provide the yearly breakdowns (2014-2023) for all eight mentioned weight sets with regards to the aforementioned performance measures. Expanded Tables 3 and 4 (which will be mentioned in the next paragraph) can also be

found in the Appendix (as Tables 9 and 10). Hopefully, the information in the Appendix will eventually be added to the web page for the original ILM.

2024	Orig	33,100	38,99	40,98	41,96	SCC	F_Sqr	F_*
Results	1,11	1,10	3,11	2,11	1,10	2,10	2,10	2,10
SCC-25	.8796	.8231	.8738	.8642	.8565	.8262	.8273	.8304
F_Sqr	587	588	619	586	582	576	591	591
F_*	555.0	525.1	553.9	530.7	524.6	559.0	563.8	563.8
SCC-12	.6259	.6294	.7663	.6538	.6399	.5874	.6399	.6399
SCC-4	-0.1	-0.1	-1.8	-1.6	-1.4	0.0	0.0	0.0

Table 2 – Actual results for the 2024 NCAA season.

When comparing these model's rankings, a curious observation was that in all eight, the CFP committee's #4 team (Penn State) and #10 team (SMU) always appeared as the 7th and 8th rated team for each model. (Oregon was the CFP committee's #1 team and they were also ranked #1 by all eight models as well.) Table 4 illustrates a normalized model rating summation (from 0, the lowest rating, up to 1, for the highest rating) of six rankings (excluding F_SQR and F_*) after subtracting the lowest rating and then dividing by the difference between the largest and smallest ratings generated from that weight set after each model's multiplication and addition operations were performed. Table 3 below lists the integer, positional ranks for those same models.

CFP		Orig.	33,100	38,99	40,98	41,96	SCC
1	Oregon	1	1	1	1	1	1
2	Georgia	3	3	5	6	6	2
3	Texas	4	4	3	4	4	4
4	Penn State	7	7	7	7	7	7
5	Notre Dame	2	2	2	2	2	3
6	Ohio State	5	5	4	3	3	5
7	Tennessee	15	13	11	11	11	14
8	Indiana	6	6	6	5	5	6
9	Boise St	11	15	14	14	14	15
10	SMU	8	8	8	8	8	8
11	Alabama	12	9	9	10	9	10
12	Arizona St	9	11	12	12	13	9
13	Miami(F)	10	12	10	9	10	12
14	Mississippi	18	17	16	16	15	18
15	South Carolina	13	10	13	13	12	11
16	Clemson	16	16	17	17	17	16
17	BYU	14	14	15	15	16	13
18	Iowa St	17	18	18	18	18	17

Table 3 – Integer model ranking values for the top 18 teams in the final CFP committee list.

The teams in Table 4 are listed in the order as released by the CFP committee, and that specific rank is included in Table 3 (as there was room to include it in that table but not in Table 4.)

2024	Orig.	33,100	38,99	40,98	41,96	SCC	Avg.Sum	Rank
Oregon	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1
Georgia	0.8986	0.9209	0.9117	0.9005	0.8999	0.9180	0.9082	3
Texas	0.8865	0.9047	0.9183	0.9140	0.9187	0.8966	0.9065	4
Penn State	0.8581	0.8622	0.8735	0.8720	0.8747	0.8596	0.8667	7
Notre Dame	0.9103	0.9232	0.9439	0.9463	0.9507	0.9121	0.9311	2
Ohio State	0.8830	0.8935	0.9136	0.9165	0.9244	0.8846	0.9026	5
Tennessee	0.7974	0.8255	0.8431	0.8386	0.8391	0.8098	0.8256	13
Indiana	0.8636	0.8803	0.9025	0.9032	0.9047	0.8668	0.8868	6
Boise St	0.8145	0.8092	0.8236	0.8241	0.8195	0.8073	0.8164	14
SMU	0.8408	0.8508	0.8588	0.8544	0.8546	0.8468	0.8510	8
Alabama	0.8106	0.8409	0.8483	0.8430	0.8478	0.8281	0.8365	9
Arizona St	0.8218	0.8316	0.8360	0.8303	0.8284	0.8285	0.8294	11
Miami(F)	0.8159	0.8310	0.8453	0.8440	0.8454	0.8213	0.8338	10
Mississippi	0.7638	0.7964	0.8145	0.8103	0.8145	0.7792	0.7965	17
South Carolina	0.8068	0.8334	0.8327	0.8262	0.8288	0.8244	0.8254	12
Clemson	0.7892	0.8006	0.8073	0.8000	0.8009	0.7982	0.7993	16
BYU	0.8050	0.8176	0.8170	0.8123	0.8093	0.8131	0.8124	15
Iowa St	0.7772	0.7865	0.7886	0.7805	0.7793	0.7861	0.7830	18

Table 4 – Normalized model ranking values for top 18 teams in the final CFP committee list.

4. Miscellaneous

Even though individual desktop computers are faster now than when the one million Monte Carlo weight sets were generated back in 2020, generating 15 billion sets would tie up a computer for quite some time. Therefore, there were essentially 15 executions of the program, each one generating one billion sets. Each run of this program would produce too much output if each set of weight's results were placed into a file, so only those matching the highest number of exact or total matches – or the highest total of those two values, or, the highest SCC value that had been found so far – were saved. The lowest SCC value typically appears as the first output value in these files, as computed for the first set of randomly generated weights, and only one such weight set had a negative SCC-25 value (-0.4850) and even *that* set matched 81 of the 108 invited teams in the nine years of training data – along with thirteen exact matches.

In retrospect, with regards to matching the top twelve ranked teams by the CFP committee (for the 9 years of training data), the MOV power rating values performed at the 12,83 level (12 exact matches and 83 overall matches); the no-MOV was demonstrably more accurate (28,91). As one would hope, since it is a combination of both components in these two rating values, the original ILM weight set did exhibit an improvement over those results (31,96), and in 2024, MOV achieved an 0,9 outcome, no-MOV achieved 1,11 – and the latter was also the same level of performance as the original ILM.

5. Summary

Seven new sets, of five weights each, have been uncovered via a Monte Carlo evaluation process, and how accurate they were in 2024 has been compared with the original ILM set of weights. Several new objective measures have been introduced, for evaluation purposes; however,

the number of (exact and) overall matches between a model's prediction and the CFP committee's ranking is still the objective to be maximized. At least for 2024, it appears that the aforementioned conjecture that the 38,99 model would be the most accurate model was confirmed, and it will be interesting to see if such behavior continues over the coming years with regards to this committee-based, invitation process. (There may also be more changes to the specific CFP tournament seeding format in the next few years as well.)

References

Carroll, B., Palmer, P., Thorn, J., 1988. *The Hidden Game of Football*, Warner Books.

Trono, J., 2020, An Accurate Linear Model for Predicting the College Football Playoff Committee's Selections. SMC Tech Report (SMC-2020-CS-001), https://www.smcvt.edu/wp-content/uploads/2021/08/AccurateLinearCFPModel.pdf, last accessed 5/20/2025.

Appendix

Please remember that for all of the tables in this section, the original ILM was only trained on four years of data (2014-2017); all seven other models (in the column headings) were trained on all 9 years.

OD	SOS	OD'	SOS'	Losses
0.30912775	0.83784781	85.99451009	49.28798644	0.44385664

Table 5 – The five weights used in the original ILM.

	Orig	33,100	38,99	40,98	41.96	SCC	F_Sqr	F_*
OD	.30913	.39373	.70289	.40242	.88582	.28330	.30983	.33398
SOS	.83785	.98945	.98127	.46362	.91212	.94684	.85494	.95948
OD'	85.995	40.499	53.145	19.448	32.798	63.137	41.983	52.089
SOS'	49.288	23.542	23.973	15.300	33.371	30.693	14.301	19.934
Losses	.44386	2.5212	.70209	2.1111	4.8128	.07248	.22124	.09605

Table 6 – Five significant digits for each of the eight models' five weights.

	Orig	33,100	38,99	40,98	41,96	SCC	F_Sqr	F_*
2014	4,11	2,10	4,10	4,10	4,10	3,11	2,10	2,10
2015	5,9	4,11	3,11	4,11	5,11	3,10	2,11	3,11
2016	3,11	2,11	2,11	3.11	3,11	3,11	2,11	2,11
2017	2,11	3,11	3,11	4,11	5,11	1,11	1,11	2,11
2018	8,10	7,11	7,11	8,11	7,11	6,10	6,10	6,10
2019	2,10	5,11	6,10	5,10	6,9	5,11	5,11	5,11
2021	3,10	4,11	5,11	4,11	3,11	1,10	4,11	4,11
2022	3,12	5,12	5,12	5,12	4,11	4,11	7,12	7,12
2023	1,12	1,10	3,12	3,11	4,11	2,12	1,12	1,12
Totals	31,96	33,100	38,99	40,98	41,96	28,96	30,99	32,99

Table 7 – Results matching the CFP committee's top twelve teams: exact, overall.

CFP		Orig.	33,100	38,99	40,98	41,96	SCC
1	Oregon	107.98	58.68	77.21	33.09	62.20	80.73
2	Georgia	86.31	47.08	62.56	23.83	43.60	67.74
3	Texas	83.74	44.71	63.66	25.09	47.09	64.36
4	Penn State	77.67	38.47	56.22	21.18	38.93	58.50
5	Notre Dame	88.82	47.42	67.90	28.09	53.05	66.81
6	Ohio State	82.99	43.07	62.88	25.32	48.15	62.46
7	Tennessee	64.69	33.09	51.17	18.07	32.31	50.62
8	Indiana	78.83	41.13	61.03	24.08	44.49	59.64
9	Boise St	68.34	30.71	47.93	16.72	28.68	50.22
10	SMU	73.96	36.80	53.77	19.54	35.20	56.47
11	Alabama	67.52	35.35	52.04	18.48	33.93	53.52
12	Arizona St	69.90	33.99	49.99	17.30	30.33	53.58
13	Miami(F)	68.64	33.90	51.53	18.57	33.49	52.44
14	Mississippi	57.52	28.83	46.42	15.44	27.74	45.78
15	South Carolina	66.71	34.26	49.45	16.92	30.40	52.93
16	Clemson	62.93	29.44	45.23	14.48	25.21	48.78
17	BYU	66.32	31.94	46.84	15.62	26.77	51.14
18	Iowa St	60.38	27.38	42.12	12.66	21.21	46.87
19	Missouri	53.06	23.52	36.87	9.94	15.59	41.88
20	Illinois	54.03	21.84	34.70	9.10	14.03	41.11
21	Syracuse	54.78	22.33	34.67	9.01	13.74	41.80
22	Army	51.65	19.88	37.20	10.98	16.89	37.46
23	Colorado	51.34	23.45	39.28	11.43	19.12	40.66
24	UNLV	40.59	12.40	27.98	5.22	6.05	30.32
25	Memphis	35.78	8.72	23.84	3.34	1.47	25.83
	LSU	42.91	25.10	37.79	10.22	16.93	43.26
	Louisville	51.23	22.91	37.15	10.31	17.59	40.78
	Texas A&M	45.84	19.93	33.29	7.89	12.26	37.37
	Duke	45.58	16.35	29.06	5.89	7.26	34.83
	Michigan	43.42	15.36	27.26	4.93	7.11	34.05
	Kansas St	42.25	16.36	29.48	5.95	8.30	33.87
	Iowa	39.87	15.03	29.04	5.79	8.13	32.00
	Baylor	39.22	14.21	27.65	5.01	6.42	31.38
	Marshall	39.17	10.90	24.73	3.35	1.94	29.03
	Florida	39.01	16.01	27.39	4.23	5.05	33.41
	Texas Tech	38.72	13.21	26.02	4.13	4.52	30.70
	Georgia Tech	34.01	10.10	21.36	1.34	-0.69	27.80
	TCU	32.17	9.61	22.13	1.76	-0.62	26.36
	High	107.98	58.68	77.21	33.09	62.20	80.73
	Low	-105.68	-87.94	-88.74	-59.97	-123.55	-77.59

Table 8 – Actual model ranking values for their top 38 teams.

	Orig.	33,100	38,99	40,98	41,96	SCC	Sum (6)	Rank
Oregon	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1
Georgia	0.8986	0.9209	0.9117	0.9005	0.8999	0.9180	0.9082	3
Texas	0.8865	0.9047	0.9183	0.9140	0.9187	0.8966	0.9065	4
Penn State	0.8581	0.8622	0.8735	0.8720	0.8747	0.8596	0.8667	7
Notre Dame	0.9103	0.9232	0.9439	0.9463	0.9507	0.9121	0.9311	2
Ohio State	0.8830	0.8935	0.9136	0.9165	0.9244	0.8846	0.9026	5
Tennessee	0.7974	0.8255	0.8431	0.8386	0.8391	0.8098	0.8256	13
Indiana	0.8636	0.8803	0.9025	0.9032	0.9047	0.8668	0.8868	6
Boise St	0.8145	0.8092	0.8236	0.8241	0.8195	0.8073	0.8164	14
SMU	0.8408	0.8508	0.8588	0.8544	0.8546	0.8468	0.8510	8
Alabama	0.8106	0.8409	0.8483	0.8430	0.8478	0.8281	0.8365	9
Arizona St	0.8218	0.8316	0.8360	0.8303	0.8284	0.8285	0.8294	11
Miami(F)	0.8159	0.8310	0.8453	0.8440	0.8454	0.8213	0.8338	10
Mississippi	0.7638	0.7964	0.8145	0.8103	0.8145	0.7792	0.7965	17
South Carolina	0.8068	0.8334	0.8327	0.8262	0.8288	0.8244	0.8254	12
Clemson	0.7892	0.8006	0.8073	0.8000	0.8009	0.7982	0.7993	16
BYU	0.8050	0.8176	0.8170	0.8123	0.8093	0.8131	0.8124	15
Iowa St	0.7772	0.7865	0.7886	0.7805	0.7793	0.7861	0.7830	18
Missouri	0.7430	0.7602	0.7569	0.7512	0.7491	0.7546	0.7525	20
Illinois	0.7475	0.7487	0.7438	0.7422	0.7407	0.7497	0.7455	24
Syracuse	0.7510	0.7521	0.7437	0.7412	0.7391	0.7541	0.7469	23
Army	0.7364	0.7354	0.7589	0.7624	0.7561	0.7267	0.7460	25
Colorado	0.7349	0.7597	0.7714	0.7672	0.7681	0.7469	0.7580	19
UNLV	0.6846	0.6844	0.7033	0.7005	0.6977	0.6816	0.6920	33
Memphis	0.6621	0.6593	0.6784	0.6803	0.6731	0.6532	0.6677	36
LSU	0.6955	0.7710	0.7625	0.7542	0.7563	0.7633	0.7505	22
Louisville	0.7344	0.7560	0.7586	0.7552	0.7598	0.7477	0.7520	21
Texas A&M	0.7092	0.7357	0.7353	0.7292	0.7311	0.7261	0.7278	26
Duke	0.7079	0.7113	0.7099	0.7077	0.7042	0.7101	0.7085	27
Michigan	0.6978	0.7045	0.6990	0.6974	0.7034	0.7052	0.7012	29
Kansas St	0.6924	0.7114	0.7124	0.7084	0.7098	0.7040	0.7064	28
Iowa	0.6812	0.7023	0.7097	0.7066	0.7089	0.6922	0.7002	30
Baylor	0.6782	0.6967	0.7014	0.6983	0.6997	0.6883	0.6937	32
Marshall	0.6779	0.6741	0.6838	0.6804	0.6756	0.6734	0.6775	35
Florida	0.6772	0.7090	0.6998	0.6899	0.6923	0.7011	0.6949	31
Texas Tech	0.6758	0.6899	0.6915	0.6888	0.6895	0.6840	0.6866	34
Georgia Tech	0.6538	0.6687	0.6635	0.6588	0.6614	0.6657	0.6620	37
TCU	0.6452	0.6653	0.6681	0.6633	0.6618	0.6566	0.6601	38

Table 9 – Normalized model ranking values for their top 38 teams.

2024		Orig.	33,100	38,99	40,98	41,96	SCC
1	Oregon	1	1	1	1	1	1
2	Georgia	3	3	5	6	6	2
3	Texas	4	4	3	4	4	4
4	Penn State	7	7	7	7	7	7
5	Notre Dame	2	2	2	2	2	3
6	Ohio State	5	5	4	3	3	5
7	Tennessee	15	13	11	11	11	14
8	Indiana	6	6	6	5	5	6
9	Boise St	11	15	14	14	14	15
10	SMU	8	8	8	8	8	8
11	Alabama	12	9	9	10	9	10
12	Arizona St	9	11	12	12	13	9
13	Miami(F)	10	12	10	9	10	12
14	Mississippi	18	17	16	16	15	18
15	South Carolina	13	10	13	13	12	11
16	Clemson	16	16	17	17	17	16
17	BYU	14	14	15	15	16	13
18	Iowa St	17	18	18	18	18	17
19	Missouri	21	20	23	23	23	20
20	Illinois	20	24	24	24	24	22
21	Syracuse	19	23	25	25	25	21
22	Army	23	26	21	20	22	25
23	Colorado	24	21	19	19	19	24
24	UNLV	30	34	30	30	32	34
25	Memphis	36	38	36	36	36	38
	LSU	22	19	20	22	21	19
	Louisville	25	22	22	21	20	23
	Texas A&M	26	25	26	26	26	26
	Duke	27	28	28	28	29	27
	Michigan	26	30	33	32	30	28
	Kansas St	29	27	27	27	27	29
	Iowa	31	31	29	29	28	31
	Baylor	32	32	31	31	31	32
	Marshall	33	35	35	35	35	35
	Florida	34	29	32	33	33	30
	Texas Tech	35	33	34	34	34	33
	Georgia Tech	37	36	38	38	38	36
	TCU	38	37	37	37	38	37

Table 10 - Integer model ranking values for their top 38 teams.

	Best	Orig	33,100	38,99	40,98	41,96	SCC	F_Sqr	F_*
2014	.9446	.9292	.9042	.9077	.8969	.8892	.9254	.9015	.9085
2015	.9123	.8546	.8658	.8842	.8758	.8654	.8746	.8673	.8835
2016	.7562	.7088	.7342	.6812	.6642	.6962	.7469	.6973	.7115
2017	.9046	.8642	.8804	.8700	.8419	.8435	.8742	.8869	.8942
2018	.9058	.8619	.8512	.8269	.7785	.7796	.8727	.8454	.8562
2019	.9250	.8623	.8804	.8688	.8612	.8454	.8769	.8873	.8838
2021	.9604	.8896	.9288	.9173	.9008	.9027	.9238	.9362	.9335
2022	.9481	.9323	.9338	.9200	.9223	.9162	.9346	.9269	.9292
2023	.9419	.8654	.8965	.8750	.8554	.8762	.9023	.8954	.9038
AVG	.91099	.86314	.87503	.86123	.84411	.84604	.88127	.87158	.87824

Table 11 – SCC-25 values, including the highest/best SCC-25 value for all 15 billion weight sets.

	Orig	33,100	38,99	40,98	41,96	SCC	F_Sqr	F_*
2014	.8601	.8392	.8811	.8811	.8811	.8671	.8391	.8392
2015	.6853	.8007	.7972	.8392	.8042	.7273	.8322	.8077
2016	.3147	.5699	.3007	.3217	.3217	.4825	.5594	.5699
2017	.5175	.6119	.6189	.4685	.5245	.5664	.7343	.7273
2018	.9021	.7622	.8147	.8077	.7517	.8951	.7832	.8112
2019	.7832	.7552	.7273	.7238	.6084	.8147	.8287	.8007
2021	.8951	.8811	.9441	.9301	.9161	.8776	.9126	.8881
2022	.8811	.8811	.8811	.8811	.8776	.8846	.8881	.8881
2023	.9301	.9091	.9161	.8881	.9196	.9441	.9301	.9406
AVG	.75213	.77971	.76458	.72767	.73388	.78435	.81197	.80808

Table 12 – SCC-12 values for these models.

	2014	2015	2016	2017	2018	2019	2021	2022	2023	Total
Best	676	665	651	641	680	670	678	668	686	6015
# times	3	7	1	2	2	2	86	3	11	------
Original	654	604	498	556	666	642	664	660	675	5618
33,100	648	637	571	583	626	624	662	660	668	5679
38,99	660	636	494	585	641	616	678	660	670	5640
40,98	660	648	500	542	639	615	674	660	662	5600
41,96	660	638	500	558	623	582	670	659	671	5561
SCC	656	616	546	570	664	641	659	661	678	5691
F_Sqr	648	646	568	618	632	645	669	662	674	5762
F_*	648	639	571	616	640	637	662	662	674	5749

Table 13 – F_Sqr formula values, including the highest generated: the maximum value is 694.

	2014	2015	2016	2017	2018	2019	2021	2022	2023	Total
Best	657.8	625.5	617.4	612.1	667.0	637.3	647.6	644.4	650.1	5759.2
# times	5	2	111	1	57	1	3	52	9	------
Original	627.8	603.9	594.2	536.7	663.4	594.7	618.4	615.4	598.2	5452.7
33,100	608.3	618.2	587.2	552.3	641.6	612.1	614.3	632.2	603.5	5469.7
38,99	632.9	605.6	571.3	552.8	645.6	607.5	635.0	632.2	622.4	5505.3
40,98	632.9	612.7	579.9	531.2	645.8	603.1	622.2	632.2	615.4	5475.4
41,96	632.9	599.2	579.9	541.3	638.4	597.1	609.7	628.8	633.0	5460.3
SCC	615.2	607.1	586.3	533.1	650.2	615.2	603.3	628.6	629.5	5468.5
F_Sqr	608.3	611.5	583.2	573.6	635.4	618.0	617.8	643.9	615.4	5507.2
F_*	608.3	618.0	587.2	572.8	642.2	617.0	614.3	643.9	615.4	5519.1

Table 14 – F_* formula values, including the highest generated: the maximum value is 694.

	Orig	33,100	38,99	40,98	41,96	SCC	F_Sqr	F_*
2014	0.8	0.7	0.9	0.9	0.9	0.7	0.7	0.7
2015	1.0	0.8	0.4	0.4	0.1	0.8	0.8	0.8
2016	0.8	0.4	-0.1	-0.1	-0.1	0.4	0.4	0.4
2017	-2.0	-1.6	-1.6	-2.7	-2.7	-0.8	0.4	0.1
2018	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
2019	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
2021	0.4	0.3	0.4	0.2	0.1	0.3	0.3	0.3
2022	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2023	0.6	0.3	0.5	0.5	0.6	0.7	0.6	0.6
AVG	0.47	0.40	0.36	0.21	0.18	0.53	0.66	0.62

Table 15 – SCC-4 values included for comparison with previous CFP selection (top four teams).