Project 11:

Predicting Purdue's Performance in the NCAA Tournament Bracket

Data Preparation

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Data Preparation

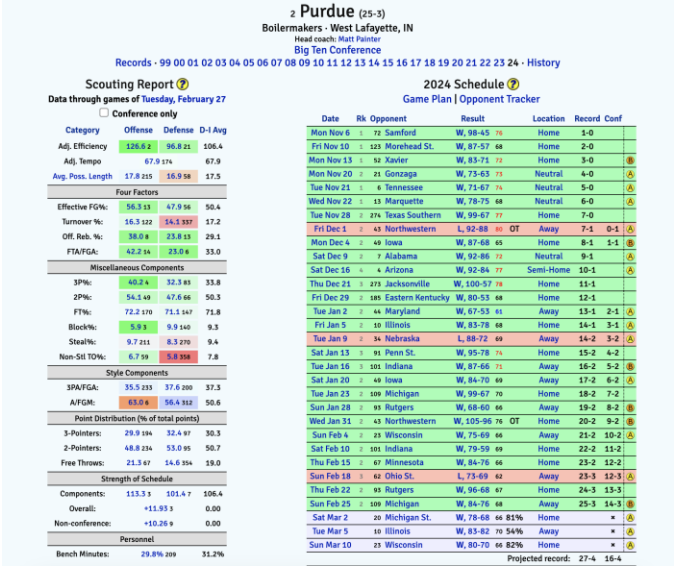
Select Data -> Integrate Data -> Clean Data

Sources:

- Kenpom
- Kaggle (via Barttorvik)

Preparation Process:

- Combine individual Kenpom tables
- Merge Kenpom + Kaggle



2 Purdue (25-3)
Boilermakers · West Lafayette, IN
Head coach: Matt Painter
Big Ten Conference
Records · 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 · History

Scouting Report
Data through games of Tuesday, February 27
Conference only

Category	Offense	Defense	D-I Avg
Adj. Efficiency	126.6 2	96.8 21	106.4
Adj. Tempo	67.9 174		67.9
Avg. Poss. Length	17.8 215	16.9 58	17.5
Four Factors			
Effective FG%:	56.3 13	47.9 56	50.4
Turnover %:	16.3 122	14.1 337	17.2
Off. Reb. %:	38.0 8	23.8 13	29.1
FTA/FGA:	42.2 14	23.0 6	33.0
Miscellaneous Components			
3P%:	40.2 4	32.3 83	33.8
2P%:	54.1 49	47.6 66	50.3
FT%:	72.2 170	71.1 147	71.8
Block%:	5.9 3	9.9 140	9.3
Steal%:	9.7 211	8.3 270	9.4
Non-Stl TO%:	6.7 59	5.8 358	7.8
Style Components			
3PA/FGA:	35.5 233	37.6 200	37.5
A/FGM:	63.0 6	56.4 312	50.6
Point Distribution (% of total points)			
3-Pointers:	29.9 194	32.4 97	30.3
2-Pointers:	48.8 234	53.0 95	50.7
Free Throws:	21.3 67	14.6 354	19.0
Strength of Schedule			
Components:	113.3 3	101.4 7	106.4
Overall:	+11.93 3		0.00
Non-conference:	+10.26 9		0.00
Personnel			
Bench Minutes:	29.8% 209		31.2%

2024 Schedule
Game Plan | Opponent Tracker

Date	Rk	Opponent	Result		Location	Record	Conf
Mon Nov 6	1	72 Samford	W, 98-45 76		Home	1-0	
Fri Nov 10	1	123 Morehead St.	W, 87-57 68		Home	2-0	
Mon Nov 13	1	52 Xavier	W, 83-71 72		Home	3-0	B
Mon Nov 20	2	21 Gonzaga	W, 73-63 73		Neutral	4-0	A
Tue Nov 21	1	6 Tennessee	W, 71-67 74		Neutral	5-0	A
Wed Nov 22	1	13 Marquette	W, 78-75 68		Neutral	6-0	A
Tue Nov 28	2	274 Texas Southern	W, 99-67 77		Home	7-0	
Fri Dec 1	2	43 Northwestern	L, 92-88 80	OT	Away	7-1	0-1 A
Mon Dec 4	2	49 Iowa	W, 87-68 65		Home	8-1	1-1 B
Sat Dec 9	2	7 Alabama	W, 92-86 72		Neutral	9-1	A
Sat Dec 16	4	4 Arizona	W, 92-84 77		Semi-Home	10-1	A
Thu Dec 21	3	273 Jacksonville	W, 100-57 78		Home	11-1	
Fri Dec 29	2	185 Eastern Kentucky	W, 80-53 68		Home	12-1	
Tue Jan 2	2	44 Maryland	W, 67-53 61		Away	13-1	2-1 A
Fri Jan 5	2	10 Illinois	W, 83-78 68		Home	14-1	3-1 A
Tue Jan 9	2	34 Nebraska	L, 88-72 69		Away	14-2	3-2 A
Sat Jan 13	3	91 Penn St.	W, 95-78 74		Home	15-2	4-2
Tue Jan 16	3	101 Indiana	W, 87-66 71		Away	16-2	5-2 B
Sat Jan 20	2	49 Iowa	W, 84-70 69		Away	17-2	6-2 A
Tue Jan 23	2	109 Michigan	W, 99-67 70		Home	18-2	7-2
Sun Jan 28	2	93 Rutgers	W, 68-60 66		Away	19-2	8-2 B
Wed Jan 31	2	43 Northwestern	W, 105-96 76	OT	Home	20-2	9-2 B
Sun Feb 4	2	23 Wisconsin	W, 75-69 66		Away	21-2	10-2 A
Sat Feb 10	2	101 Indiana	W, 79-59 69		Home	22-2	11-2
Thu Feb 15	2	67 Minnesota	W, 84-76 66		Home	23-2	12-2
Sun Feb 18	3	62 Ohio St.	L, 73-69 62		Away	23-3	12-3 A
Thu Feb 22	2	93 Rutgers	W, 96-68 67		Home	24-3	13-3
Sun Feb 25	2	109 Michigan	W, 84-76 68		Away	25-3	14-3 B
Sat Mar 2		20 Michigan St.	W, 78-68 66	81%	Home		* A
Tue Mar 5		10 Illinois	W, 83-82 70	54%	Away		* A
Sun Mar 10		23 Wisconsin	W, 80-70 66	82%	Home		* A
					Projected record:	27-4	16-4

Purdue's Kenpom

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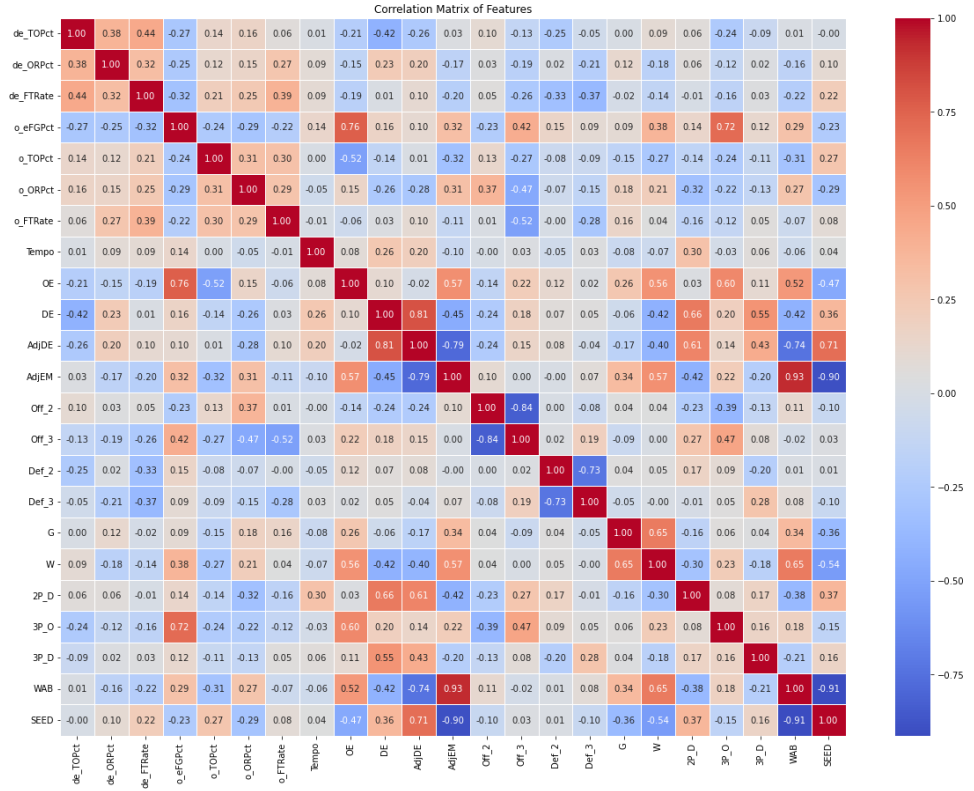
Data Preparation

Dataset Description

- Remove identical repeated features
- Remove 'rank' features
- Remove highly correlated features
  - AdjTempo vs. Tempo

Final Dataset:

- 680 rows
- 27 features



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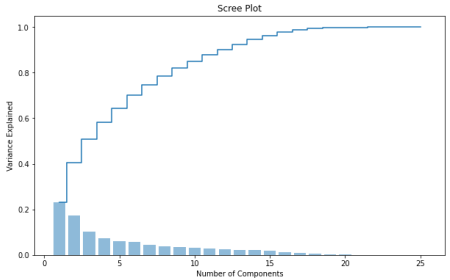
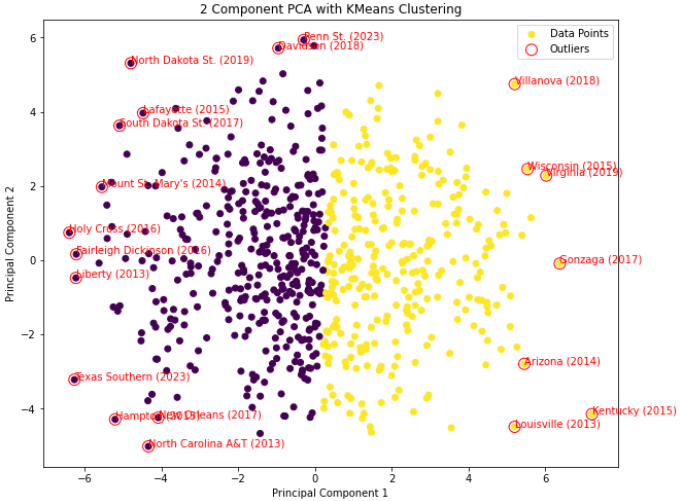
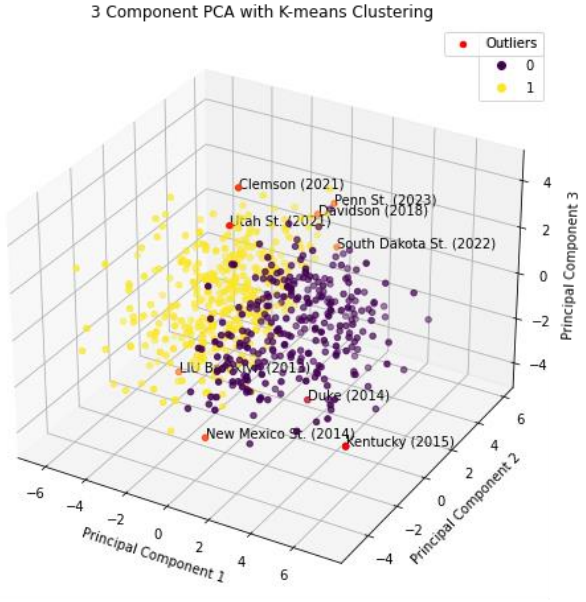
Data Preparation

Data Exploration – Dimensionality Reduction



- Component 1: 23.16% of the total variance.
- Component 2: 17.40% of the total variance.
- Component 3: 10.18% of the total variance.





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Data Exploration – Feature Importance