

1. 데이터 병합

선수 랭킹데이터, 경기 기록(세부 내용 포함), 선수 신체 데이터를 선수의 ID 기준으로 하나의 csv 파일에 병합.

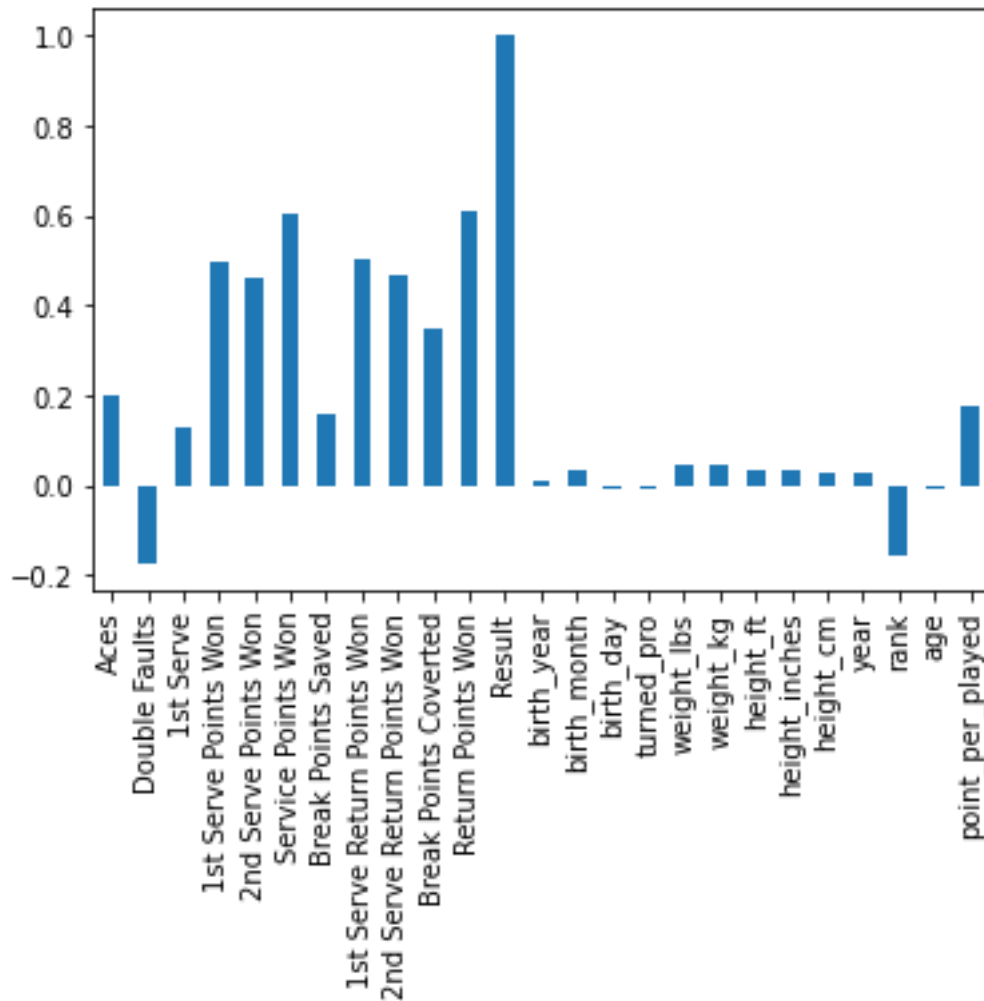
특징 목록

'player_id','Aces', 'Double Faults', '1st Serve', '1st Serve Points Won', '2nd Serve Points Won', 'Service Points Won', 'Break Points Saved', '1st Serve Return Points Won', '2nd Serve Return Points Won', 'Break Points Covered', 'Return Points Won', 'Result', 'player_slug_x', 'flag_code', 'birth_year', 'birth_month', 'birth_day', 'turned_pro', 'weight_lbs', 'weight_kg', 'height_ft', 'height_inches', 'height_cm', 'handedness', 'backhand', 'year', 'rank', 'age', 'point_per_played', 'player_slug_y'

2017_players_data_ML																											
player_id																											
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z		
player_id	Aces	Double Faults	1st Serve	2nd Serve	Service Points Won	Break Points Saved	1st Serve Return Points Won	2nd Serve Return Points Won	Break Points Covered	Return Points Won	Result	player_slug	flag_code	birth_year	birth_month	birth_day	turned_pro	weight_lbs	weight_kg	height_ft	height_inches	height_cm	handedness	backhand			
n409	0.137931	0	0.72619	0.639344	0.608696	0.630952	0.5	0.193548	0.542857	0.142857	0.319588	0	rafael-nadESP	1986	6	3	2001	188	85	6'1"	73	185	Left-Hand Two-Hand				
n552	0.16	0	0.710145	0.734694	0.45	0.652174	0.4	0.211538	0.52	0.285714	0.311688	0	kei-nishikiJPN	1989	12	29	2007	165	75	5'10"	70	178	Right-Hand Two-Hand				
i975	0.2	0.15	0.459016	0.857143	0.484848	0.655738	0.5	0.25	0.181818	0	0.224138	0	milos-raorCAN	1990	12	27	2008	216	98	6'5"	77	196	Right-Hand Two-Hand				
w367	0.428571	0.095238	0.606557	0.72973	0.416667	0.606557	0	0.339286	0.333333	0.2	0.337662	0	stan-wawerSUI	1985	3	28	2002	179	81	6'0"	72	183	Right-Hand One-Hand				
tb09	0.214286	0.178571	0.451222	0.783784	0.533333	0.646341	0.571429	0.192308	0.452381	0.071429	0.308511	0	dominic-tiAUT	1993	9	3	2011	180	82	6'1"	73	185	Right-Hand One-Hand				
ie31	0.0625	0.0625	0.670103	0.8	0.34375	0.649485	0.6	0.289507	0.461538	0.153846	0.369748	0	kyle-edmsGBR	1995	1	8	2012	184	83	6'2"	74	188	Right-Hand Two-Hand				
te61	0.071429	0.142857	0.595745	0.535714	0.263158	0.425532	0.375	0.052632	0.333333	0	0.176471	0	jordan-thcUSA	1994	4	20	2013	161	73	6'0"	72	183	Right-Hand Two-Hand				
sm37	0	0.058824	0.659091	0.586207	0.4	0.522727	0.333333	0.25	0.461538	0.333333	0.301887	0	diego-schiARG	1992	8	16	2010	141	64	5'7"	67	170	Right-Hand Two-Hand				
g940	0.52381	0.047619	0.603448	0.971429	0.391304	0.741379	0.75	0.181818	0.285714	0	0.215385	0	sam-grothAUS	1987	10	19	2006	220	100	6'4"	76	193	Right-Hand One-Hand				
h840	0.227273	0.318182	0.647887	0.847826	0.32	0.661972	0.6	0.195122	0.347826	1	0.25	0	viktor-troiSRB	1986	2	10	2006	189	86	6'4"	76	193	Right-Hand Two-Hand				
z168	0.142857	0.142857	0.657895	0.52	0.230769	0.421053	0.375	0.166667	0.25	0	0.210526	0	mischa-zviGER	1987	8	22	2005	194	88	6'3"	75	191	Left-Hand Two-Hand				
m873	0.222222	0.166667	0.711538	0.72973	0.266667	0.596154	0	0.074074	0.368421	0	0.199552	0	nicolas-mtFRA	1982	1	21	2000	176	80	6'3"	75	191	Right-Hand One-Hand				
pj59	0.230769	0.153846	0.529412	0.833333	0.375	0.617647	0.6	0.185185	0.352941	0	0.25	0	lucas-pouFRA	1994	2	23	2012	179	81	6'1"	73	185	Right-Hand Two-Hand				
dc58	0.206897	0.137931	0.568421	0.592593	0.487805	0.547368	0.615385	0.287879	0.560976	0.5	0.392523	0	jared-donUSA	1996	10	9	2014	165	75	6'2"	74	188	Right-Hand Two-Hand				
f401	0.058824	0.117647	0.621359	0.65625	0.589744	0.631068	0.555556	0.246154	0.526316	0.428571	0.349515	0	david-fernESP	1982	4	2	2000	160	73	5'9"	69	175	Right-Hand Two-Hand				
db01	0.111111	0.111111	0.528302	0.714286	0.28	0.509434	0	0.277778	0.375	0.333333	0.307692	0	alexandr-UKR	1988	11	7	2006	157	71	5'11"	71	180	Right-Hand Two-Hand				
sd32	0.041667	0.166667	0.552632	0.690476	0.470588	0.592105	0	0.288462	0.52	0.333333	0.401961	0	gilles-simcFRA	1984	12	27	2002	154	70	6'0"	72	183	Right-Hand Two-Hand				
j386	0.117647	0.176471	0.631579	0.583333	0.333333	0.491228	0.5	0.08	0.478261	1	0.270833	0	steve-johnUSA	1989	12	24	2012	190	86	6'2"	74	188	Right-Hand Two-Hand				
ta66	0.238095	0.380952	0.594395	0.659091	0.4	0.554054	0.555556	0.166667	0.454545	0.333333	0.288462	0	bernard-ttAUS	1992	10	21	2008	201	91	6'5"	77	196	Right-Hand Two-Hand				
ma30	0.5	0.1	0.637931	0.72973	0.333333	0.586207	0.4	0.181818	0.409091	1	0.272727	0	gilles-mullLUX	1983	5	9	2001	196	89	6'4"	76	193	Left-Hand Two-Hand				
ie73	0.458333	0.125	0.59292	0.58209	0.586957	0.584071	0.9	0.229167	0.457143	0.333333	0.325301	0	ernesto-esUSA	1996	7	4	2014	180	82	6'1"	73	185	Right-Hand Two-Hand				
h996	0.272727	0.151515	0.551724	0.6875	0.615385	0.655172	0.571429	0.327288	0.404255	0.2	0.311321	0	pierre-hugFRA	1991	3	18	2010	174	79	6'2"	74	188	Right-Hand Two-Hand				
q927	0.166667	0.388889	0.5	0.6	0.36	0.48	0.444444	0.275862	0.388889	1	0.319149	0	sam-querrUSA	1987	10	7	2006	210	95	6'6"	78	198	Right-Hand Two-Hand				
r612	0.310345	0.275862	0.489362	0.630435	0.625	0.62766	0.75	0.236364	0.451613	0.5	0.313953	0	stephane-FRA	1980	5	17	2001	170	77	6'1"	73	185	Right-Hand Two-Hand				
y218	0.058824	0.352941	0.581081	0.534884	0.419355	0.486486	0.666667	0.071429	0.666667	0.5	0.304348	0	elias-ymerSWE	1996	4	10	2014	173	78	6'0"	72	183	Right-Hand Two-Hand				
n732	0	0.045455	0.646341	0.622642	0.448276	0.560976	0.6	0.222222	0.684211	0.666667	0.359375	0	yoshihito-JPN	1995	9	27	2014	141	64	5'7"	67	170	Left-Hand Two-Hand				
dh58	0.111111	0.222222	0.565217	0.538462	0.6	0.565217	0	0.285714	0.4	0	0.315789	0	alec-de-mAUS	1999	2	17	2015	152	69	5'11"	71	180	Right-Hand Two-Hand				
ie62	0.090909	0.090909	0.462963	0.68	0.655172	0.666667	0.25	0.361702	0.4	0.1	0.37931	0	tim-smyczUSA	1987	12	30	2006	160	73	5'9"	69	175	Right-Hand Two-Hand				
j55	0.166667	0.1	0.605055	0.712121	0.372093	0.577982	0.666667	0.185185	0.577778	0.375	0.363636	0	john-patriAUS	1989	1	24	2012	185	84	6'2"	74	188	Left-Hand Two-Hand				
td51	0.40625	0.0625	0.590909	0.661538	0.555556	0.618182	0.6	0.283582	0.394737	0.4	0.32381	0	frances-titAUS	1998	1	20	2015	170	77	6'2"	74	188	Right-Hand Two-Hand				
d646	0.533333	0.166667	0.638554	0.735849	0.533333	0.662651	0	0.170213	0.469388	0.333333	0.322917	0	ivan-dodigCRO	1985	1	2	2004	183	83	6'0"	72	183	Right-Hand Two-Hand				
k926	0	0.090909	0.470588	0.59375	0.638889	0.617647	0.4	0.193548	0.40625	1	0.301587	0	mikhail-kuKAZ	1987	12	26	2006	159	72	6'0"	72	183	Right-Hand Two-Hand				
h940	0.233333	0.066667	0.626374	0.719298	0.5	0.637363	0.25	0.270833	0.390244	0.25	0.325843	0	ryan-harrisUSA	1992	5	7	2007	185	84	6'1"	73	185	Right-Hand Two-Hand				

2. 히트맵 분석(머신러닝)

결과에 따른 결과에 어떤 요소가 크게 반영되는지에 대한 정보는 히트맵이 적절할 것 같아 이 방법을 채택.



선수의 체력 요소보단 경기 기록이 결과에 영향을 더욱 준다.

3. DNN 분석

기존에 썼던 DNN 모델에 승패 예측 프로그램 코딩

결과(정확도 상위 10개 매개변수 옵션)

lr	epochs	batch size	train acc	test acc
0.0001	300	100	0.896021	0.86944
0.00005	300	100	0.880025	0.830703
0.0001	270	100	0.879409	0.86131
0.0001	210	100	0.878179	0.840268
0.0001	300	200	0.876538	0.849354
0.0001	150	100	0.872436	0.811573
0.0001	240	200	0.870591	0.83979
0.0001	270	200	0.870591	0.837877
0.0001	300	300	0.869975	0.832138
0.0001	240	100	0.866489	0.86418

4. 추가로 할 것

DNN이 아닌 다른 모델에도 대입해서 다른 모델의 프로그램을 작성.