

输入： 10-21年 股票 数据 有 30多个特征和 收益

输出 预测 股票并排序

训练集和交叉验证集的合成:在每个月末截面期，选取下月收益排名前 30%的股票作 为正例( $y = 1$ )，后 30%的股票作为负例( $y = -1$ )。将训练样本合并，随机选取 90%的 样本作为训练集，余下 10%的样本作为交叉验证集。

期望实用模型， transomer, lstm, wavenet

In [50]: Data3.head(20)

Out[50]:	#	SP_LYR	FCFP_LYR	EV/EBITDA	...	CRY	CR20	RSI	DEA	MACD	K	D	J	INDUSTRY_SW	CAP
	7	0.327926	0.100122	NaN	...	8.319482e+24	0.584092	35.086174	0.043812	-0.202159	31.088801	30.210627	32.845150	银行	1.370254e+11
	3	0.934872	0.256925	5.732072	...	8.248641e+24	0.913342	47.638434	0.306137	-0.183652	53.680004	55.462782	50.114446	房地产	1.273556e+11
	4	0.994821	0.006285	16.856011	...	8.152275e+24	1.404596	53.744557	0.109279	0.013691	60.966020	60.995306	60.907448	有色金属	2.120503e+10
	3	1.141080	-0.064829	12.206895	...	8.177552e+24	1.464124	41.614252	0.427419	-0.182422	55.653137	63.954917	39.049576	通信	5.372673e+10
	3	0.491401	-0.040159	7.123298	...	6.809201e+24	1.060832	58.209361	0.176799	-0.045605	92.589300	82.194105	113.379690	房地产	2.452622e+10
	7	2.320488	-0.090326	5.330813	...	8.194097e+24	1.213904	49.620844	0.041733	-0.038007	54.032425	55.060902	51.975471	电子	3.164509e+10
	3	0.817248	-0.274822	25.672277	...	8.373075e+24	0.412946	37.784767	0.010519	-0.091570	45.570197	42.355016	52.000558	机械设备	3.831729e+10
	1	0.023861	-0.073947	NaN	...	6.809201e+24	NaN	45.878926	-0.156901	-0.419610	28.204526	43.233367	-1.853157	非银金融	5.523846e+10
	1	0.955563	0.009574	7.438602	...	7.881851e+24	1.408541	40.252108	0.606635	-0.431248	44.475543	49.838330	33.749967	家用电器	6.734936e+10
	4	1.111506	0.155011	4.447374	...	8.263442e+24	0.847274	33.541531	0.087070	-0.134119	29.857856	35.154234	19.265101	汽车	2.744927e+10
	4	0.654731	-0.211237	12.169386	...	8.216358e+24	0.559478	37.366631	0.142681	-0.225168	37.768551	44.085504	25.134645	房地产	3.033759e+10
	0	0.043649	-0.031072	18.607320	...	6.809201e+24	4.342692	57.105227	0.043394	0.113020	58.257370	75.813514	23.145080	电子	1.618973e+10
	3	0.272671	-0.289855	16.875361	...	6.809201e+24	NaN	51.077605	-0.004437	-0.007598	48.059060	55.974506	32.228166	非银金融	1.672772e+10
	3	0.160463	0.023458	13.617204	...	8.167445e+24	1.265550	36.199125	0.540995	-0.379954	41.862931	54.545188	16.498417	医药生物	2.501785e+10
	7	1.000129	0.058973	19.028455	...	8.367199e+24	0.265828	24.008552	0.015609	-0.120572	41.687771	47.697326	29.668661	机械设备	2.693278e+10
	2	0.006252	0.002691	69.151856	...	7.397424e+24	2.233853	64.326575	1.051356	0.475432	81.095467	81.116074	81.054255	医药生物	3.290151e+10
	1	0.241279	-0.010583	21.332364	...	8.215287e+24	1.094087	36.397534	1.051356	-0.837685	34.696310	47.529259	9.030412	医药生物	6.554353e+10
	3	0.310928	0.008307	13.609526	...	8.317418e+24	2.245353	58.827107	0.229066	0.090575	77.635918	81.058848	70.790059	房地产	1.822198e+10
	0	0.385397	0.092989	17.206326	...	7.962295e+24	1.295122	48.310904	-0.126863	0.133631	69.029575	73.284916	60.518892	汽车	2.398671e+10
	1	0.389060	0.048458	17.298804	...	7.948614e+24	0.686101	40.553774	-0.124581	-0.118023	59.596642	60.084472	58.620980	食品饮料	2.677683e+10