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Reassess The Model

Number of metrics: 11 | Number of models: 11

-Models Performance Matrix-

	PR-AUC	Best F-1	VUS	MutualInformation	CDI	MAE	MSE	SMAPE	MAPE	LIKELIHOOD	CENTRALITY_4	SYNTHETIC_F1_spikes	SYNTHETIC_PR-AUC_spikes	SYNTHETIC_VUS_spikes
LOF_1	0.471426	0.639590	0.793118	0.240665	134.688438	0.007891	0.000478	0.053014	0.061456	0.358277	0.00	0.919724	0.965321	0.997996
LOF_2	0.471426	0.639590	0.793118	0.240665	134.688438	0.007891	0.000478	0.053014	0.061456	0.358277	0.00	0.919724	0.965321	0.997996
LOF_3	0.471426	0.639590	0.793118	0.240665	134.688438	0.007891	0.000478	0.053014	0.061456	0.358277	0.00	0.919724	0.965321	0.997996
LOF_4	0.471426	0.639590	0.793118	0.240665	134.688438	0.007891	0.000478	0.053014	0.061456	0.358277	0.00	0.919724	0.965321	0.997996
NN_1	0.084932	0.268838	0.715316	0.086443	inf	0.034335	0.006251	0.309782	848.416870	0.341383	517112.00	0.619099	0.463421	0.989107
NN_2	0.072478	0.242718	0.712405	0.086443	inf	0.034409	0.005774	0.306010	980.694275	0.333860	457411.75	0.619099	0.460592	0.989098
NN_3	0.064315	0.220847	0.748487	0.086443	inf	0.034964	0.005948	0.321171	1020.997681	0.333834	452716.00	0.619099	0.460165	0.989133
RNN_1	0.445501	0.623336	0.883597	0.240665	52.574188	0.018413	0.002451	0.691245	1288.759155	0.351855	510368.25	0.864782	0.945454	0.996588
RNN_2	0.440440	0.593082	0.881138	0.240665	50.032313	0.021271	0.002469	0.727259	1865.845337	0.341254	476689.75	0.865236	0.941773	0.996547
RNN_3	0.386416	0.536238	0.877011	0.240665	57.056304	0.020302	0.002623	0.698546	1230.338379	0.348581	466809.75	0.878068	0.951066	0.996876
RNN_4	0.381096	0.593142	0.870421	0.240665	57.175889	0.024737	0.002963	0.733747	1312.188477	0.334835	552034.75	0.890419	0.958607	0.997401

-Models Rank Matrix (f1)-

	rank
LOF_1	0.639590
LOF_2	0.639590
LOF_3	0.639590
LOF_4	0.639590
NN_1	0.623336
NN_2	0.593142
NN_3	0.593082
RNN_1	0.536238
RNN_2	0.268838
RNN_3	0.242718
RNN_4	0.220847

average rank values

	rank
LOF_1	1
LOF_2	2
LOF_3	3
LOF_4	4
NN_1	8
NN_2	10
NN_3	9
RNN_1	11
RNN_2	6
RNN_3	5
RNN_4	7

-markov\_aggregated\_rank-

	rank
LOF_1	0.593142
LOF_2	0.639590
LOF_3	0.639590
LOF_4	0.639590
NN_1	0.220847
	0.536238
	0.623336
RNN_1	0.593082
RNN_2	0.639590
RNN_3	0.268838

RNN_4 0.242718
copeland_rank  rank
LOF_1   0.639590       LOF_2   0.639590       LOF_3   0.639590
LOF_4 0.639590  NN_1 0.536238
NN_2   0.593082   NN_3   0.268838   NN_6   0.593082   NN_7   0.593
RNN_1   0.593142     RNN_2   0.220847     RNN_3   0.242718
RNN_4 0.623336
spearmans_footrule rank
LOF_1     0.639590       LOF_2     0.639590
LOF_3 0.639590 LOF_4 0.639590
NN_1         0.623336           NN_2         0.536238
NN_3   0.593082
RNN_3   0.242718     RNN_4   0.220847
-Models Borda Rank from F1 Matrix-
rank     LOF_1   0.639590
LOF_2 0.639590 LOF_3 0.639590
<b>LOF_4</b> 0.639590
NN 1    0.623336
NN_1   0.623336     NN_2   0.536238     NN 3   0.593082
NN_2   0.536238   NN_3   0.593082   RNN_1   0.593142
NN_2   0.536238   NN_3   0.593082
NN_2   0.536238   NN_3   0.593082   RNN_1   0.593142   RNN_2   0.268838   RNN_3   0.242718   RNN_4   0.220847
NN_2   0.536238   NN_3   0.593082   RNN_1   0.593142   RNN_2   0.268838   RNN_3   0.242718   RNN_4   0.220847
Nn_2   0.536238     Nn_3   0.593082     RNN_1   0.593142     RNN_2   0.268838     RNN_3   0.242718     RNN_4   0.220847     Models Trimmed Borda Rank Matrix     rank     LOF_1   0.639590     LOF_2   0.639590     LOF_3   0.639590     LOF_3   0.639590
NN_2   0.536238     NN_3   0.593082     RNN_1   0.593142     RNN_2   0.268838     RNN_3   0.42718     RNN_4   0.220847     Models Trimmed Borda Rank Matrix—   rank     LOF_1   0.639590     LOF_2   0.639590     LOF_3   0.639590     LOF_4   0.639590     LOF_4   0.639590     LOF_4   0.639590     LOF_4   0.639590     LOF_3   0.639360     LOF_3   0.639360     LOF_3   0.639360     LOF_4   0.639590     LOF_4   0.639590     LOF_5   0.639590     LOF_6   0.639590     LOF_7   0.639336     ROM_1   0.623336     ROM_2   0.639336     ROM_3   0.623336     ROM_3   0.62336     ROM_3   0.62336
NN_2
NN 2
NN_2   0.536238     NN_3   0.593142     RNN_2   0.268838     RNN_3   0.242718     RNN_4   0.220847      Models Trimmed Borda Rank Matrix

TOF 10 620500
LOF_1   0.639590       LOF_2   0.639590
LOF_3 0.639590
LOF_4 0.639590
NN_1   0.268838
NN_2   0.242718
NN_3   0.220847
RNN_1 0.593082
RNN_2 0.623336
RNN_3 0.536238
RNN_4   0.593142
Models Trimmed Partial Borda Rank Matrix
rank
LOF_1 0.639590
LOF_2 0.639590
LOF_3 0.639590
LOF_4 0.639590
$NN_{\perp}$ 0.242718
NN_2   0.220847
NN_3 0.623336
RNN_1 0.593142
RNN_2   0.268838
RNN_3   0.593082
RNN_4 0.536238
Models Borda Trimmed Rank Matrix
rank
[LOF_1] [0.639590]
$  \mathbf{LOF}_{2}  _{0.639590}$
LOF_3 0.639590
LOF_4 0.639590
<u>NN_1</u> 0.623336
NN_2   0.593082
NN_3 0.536238
RNN_1 0.593142
RNN_2   0.268838
RNN_4 0.242718
- EMPIRICAL INFLUENCE AND ROBUST RANK AGGREGATION-
cluster
0
Most reliable cluster idx: 0,Largest 0
- Statistics
Rank by PR-AUC: [LOF_1', 'LOF_2', 'LOF_3', 'LOF_4', 'RNN_1', 'RNN_2', 'RNN_3', 'RNN_4', 'NN_1', 'NN_2', 'NN_3']

 $Rank\ by\ F1: ['LOF\_1', 'LOF\_2', 'LOF\_3', 'LOF\_4', 'RNN\_1', 'RNN\_4', 'RNN\_2', 'RNN\_3', 'NN\_1', 'NN\_2', 'NN\_3']$ 

 $Kemeny\ Predicted\ rank: ["LOF\_1", "LOF\_2", "LOF\_3", "LOF\_4", "RNN\_1", "RNN\_2", "RNN\_3", "RNN\_4", "NN\_1", "NN\_2", "NN\_3"]$ 

Max PR-AUC: 0.4714261401410078 is achieved by LOF\_1

Max F-1: 0.6395898114784356 is achieved by LOF\_1

Our chosen model is LOF\_1 which has PR-AUC (using Kemeny)= 0.4714261401410078 and best F-1= 0.6395898114784356

(Normalized Discounted Cumulative Gain) NDCG of predicted ranks with PR-AUC= 0.837251372629582 and best F-1= 0.8896125836109898