CAID-vect

February 5, 2020

IMPORTANT: * dataset: new-disprot_all_simple: * new: last round annotations * disprot: disorder comes from disprot annotations * all: no filtering by method (xray, nmr...) * simple: residues falling out of disprot annotaions are considered ordered * threshold: default * baselines: * random: completely random * suffledataset: random shuffling at dataset level (disorder content maintaned at dataset level) * shuffletarget: random shuffling at protein level (disorder content maintaned at protein level) * new-disprot-all_simple_cons: naive predictor based on the opposite of conservation * new-disprot-pdb-r_simple: what is not on pdb is disorder

0.1 Metrics tables

- bac: balanced accuracy,
- csi: critical score index / threat score,
- f05: f 0.5 score
- f1s: f 1 score / f score,
- f2s: f 2 score
- fnr: false negative rate / miss-rate
- fom: false omission rate'
- fpr: false postive rate / fall-out
- inf: informedness / bookmaker informedness
- mcc: matthew's correlation coefficient
- mk: markedness
- npv: negative predictive value
- ppv: precision / positive predictive value
- tnr: true negative rate / specificity / selectivity
- tpr: true positive rate / sensitivity / recall
- aucroc: area under the ROC curve
- aucpr aurea under the Precision-Recall curve
- aps: average precision score
- thr: prediction score cutoff

0.1.1 Metrics calculated at dataset level

	bac	csi	f05	f1s	f2s	fnr	fom	\
D029_SPOT-Disorder2	0.720	0.306	0.381	0.469	0.608	0.241	0.071	
D013_fIDPln	0.679	0.287	0.417	0.446	0.480	0.494	0.101	
D014_fIDPnn	0.626	0.241	0.470	0.388	0.330	0.700	0.124	

D025_RawMSA	0.709	0.285	0.365	0.444	0.567	0.304	0.075
D028_SPOT-Disorder1	0.707	0.274	0.343	0.430	0.577	0.252	0.068
D026_AUCpreD	0.696	0.276	0.354	0.433	0.556	0.313	0.081
D002_Predisorder	0.695	0.264	0.324	0.418	0.588	0.193	0.063
D018_ESpritz-D	0.632	0.242	0.417	0.390	0.366	0.648	0.121
D008_IsUnstruct	0.692	0.260	0.325	0.413	0.565	0.252	0.071
D005_IUPred-long	0.683	0.264	0.345	0.418	0.530	0.355	0.087
D027_AUCpreD-np	0.674	0.265	0.360	0.418	0.499	0.427	0.096
D003_IUPred2A-long	0.680	0.263	0.344	0.415	0.524	0.366	0.089
D021_MobiDB-lite	0.690	0.256	0.318	0.407	0.565	0.239	0.070
D030_SPOT-Disorder-Single	0.668	0.261	0.358	0.414	0.489	0.443	0.099
D004_IUPred2A-short	0.669	0.261	0.357	0.414	0.492	0.437	0.098
D024_DisoMine	0.670	0.260	0.353	0.413	0.497	0.425	0.097
D006_IUPred-short	0.668	0.259	0.354	0.411	0.490	0.438	0.099
D015_VSL2B	0.680	0.243	0.298	0.391	0.568	0.185	0.061
D020_ESpritz-X	0.658	0.252	0.351	0.403	0.471	0.468	0.103
D031_JRONN	0.675	0.245	0.307	0.394	0.548	0.259	0.076
D019_ESpritz-N	0.670	0.246	0.315	0.395	0.530	0.313	0.085
shuffletargets	0.624	0.227	0.000	0.000	0.000	1.000	0.122
D011_DISOPRED-3.1	0.659	0.240	0.312	0.387	0.510	0.353	0.092
D001_PyHCA	0.659	0.239	0.308	0.385	0.513	0.341	0.091
new-pdb-r_simple	0.631	0.208	0.251	0.345	0.555	0.069	0.039
D007_FoldUnfold	0.642	0.223	0.287	0.365	0.500	0.334	0.094
D017_DisEMBL-465	0.612	0.209	0.325	0.346	0.370	0.613	0.124
D016_DisEMBL-HL	0.605	0.199	0.272	0.332	0.428	0.470	0.118
D010_DisPredict-2	0.588	0.186	0.274	0.314	0.368	0.584	0.129
D023_S2D-2	0.573	0.184	0.222	0.310	0.519	0.062	0.055
D022_S2D-1	0.571	0.183	0.221	0.310	0.515	0.075	0.063
D009_GlobPlot	0.569	0.180	0.225	0.304	0.469	0.265	0.113
D033_DynaMine	0.561	0.162	0.244	0.278	0.325	0.635	0.140
new-disprot-all_simple_cons	0.522	0.166	0.202	0.285	0.486	0.086	0.114
random	0.500	0.140	0.188	0.245	0.353	0.500	0.162
shuffledataset	0.500	0.088	0.000	0.000	0.000	1.000	0.162
D032_DFLpred	0.493	0.060	0.130	0.114	0.101	0.906	0.164

	fpr	inf	mcc	mk	npv	ppv	tnr	\
D029_SPOT-Disorder2	0.320	0.439	0.343	0.268	0.929	0.339	0.680	
D013_fIDPln	0.147	0.359	0.327	0.298	0.899	0.399	0.853	
D014_fIDPnn	0.048	0.252	0.327	0.424	0.876	0.548	0.952	
D025_RawMSA	0.279	0.417	0.323	0.251	0.925	0.326	0.721	
D028_SPOT-Disorder1	0.334	0.414	0.311	0.234	0.932	0.302	0.666	
D026_AUCpreD	0.296	0.391	0.303	0.235	0.919	0.316	0.704	
D002_Predisorder	0.417	0.390	0.292	0.219	0.937	0.282	0.583	
D018_ESpritz-D	0.088	0.264	0.289	0.316	0.879	0.437	0.912	
D008_IsUnstruct	0.363	0.385	0.287	0.214	0.929	0.285	0.637	
D005_IUPred-long	0.280	0.365	0.285	0.222	0.913	0.309	0.720	
D027_AUCpreD-np	0.226	0.347	0.284	0.233	0.904	0.329	0.774	

D003_IUPred2A-long	0.274	0.360	0.282	0.220	0.911	0.309	0.726
D021_MobiDB-lite	0.382	0.379	0.281	0.208	0.930	0.278	0.618
D030_SPOT-Disorder-Single	0.220	0.337	0.278	0.230	0.901	0.329	0.780
D004_IUPred2A-short	0.225	0.338	0.278	0.229	0.902	0.327	0.775
D024_DisoMine	0.235	0.340	0.277	0.225	0.903	0.322	0.765
D006_IUPred-short	0.227	0.335	0.275	0.225	0.901	0.324	0.773
D015_VSL2B	0.454	0.361	0.266	0.196	0.939	0.257	0.546
D020_ESpritz-X	0.215	0.317	0.264	0.221	0.897	0.324	0.785
D031_JRONN	0.392	0.349	0.259	0.192	0.924	0.268	0.608
D019_ESpritz-N	0.347	0.340	0.256	0.192	0.915	0.277	0.653
shuffletargets	0.122	-0.122	0.249	0.878	0.878	1.000	0.878
D011_DISOPRED-3.1	0.330	0.317	0.241	0.184	0.908	0.276	0.670
D001_PyHCA	0.341	0.318	0.240	0.181	0.909	0.272	0.659
new-pdb-r_simple	0.669	0.262	0.213	0.173	0.961	0.212	0.331
D007_FoldUnfold	0.382	0.284	0.211	0.157	0.906	0.251	0.618
D017_DisEMBL-465	0.164	0.223	0.206	0.189	0.876	0.313	0.836
D016_DisEMBL-HL	0.320	0.210	0.161	0.124	0.882	0.242	0.680
D010_DisPredict-2	0.239	0.177	0.147	0.123	0.871	0.252	0.761
D023_S2D-2	0.792	0.146	0.138	0.131	0.945	0.186	0.208
D022_S2D-1	0.783	0.142	0.132	0.123	0.937	0.186	0.217
D009_GlobPlot	0.597	0.138	0.105	0.079	0.887	0.192	0.403
D033_DynaMine	0.243	0.122	0.102	0.085	0.860	0.225	0.757
new-disprot-all_simple_cons	0.871	0.043	0.049	0.055	0.886	0.169	0.129
random	0.501	-0.001	0.000	0.000	0.838	0.162	0.499
shuffledataset	0.162	-0.162	0.000	0.838	0.838	1.000	0.838
D032_DFLpred	0.109	-0.015	-0.017	-0.020	0.836	0.144	0.891

	tpr	aucroc	aucpr	aps	thr
D029_SPOT-Disorder2	0.759	0.760	0.340	0.340	0.370
D013_fIDPln	0.506	0.793	0.422	0.421	0.353
D014_fIDPnn	0.300	0.814	0.475	0.475	0.505
D025_RawMSA	0.696	0.779	0.386	0.385	0.500
D028_SPOT-Disorder1	0.748	0.744	0.268	0.268	0.460
D026_AUCpreD	0.687	0.757	0.479	0.312	0.500
D002_Predisorder	0.807	0.747	0.325	0.324	0.500
D018_ESpritz-D	0.352	0.774	0.410	0.409	0.508
D008_IsUnstruct	0.748	0.744	0.323	0.314	0.500
D005_IUPred-long	0.645	0.737	0.298	0.298	0.502
D027_AUCpreD-np	0.573	0.751	0.427	0.316	0.500
D003_IUPred2A-long	0.634	0.735	0.298	0.298	0.502
D021_MobiDB-lite	0.761	0.737	0.366	0.326	0.250
D030_SPOT-Disorder-Single	0.557	0.757	0.318	0.318	0.426
D004_IUPred2A-short	0.563	0.741	0.313	0.312	0.501
D024_DisoMine	0.575	0.765	0.388	0.388	0.376
D006_IUPred-short	0.562	0.739	0.311	0.311	0.501
D015_VSL2B	0.815	0.732	0.301	0.296	0.500
D020_ESpritz-X	0.532	0.739	0.304	0.303	0.144

D031_JRONN	0.741	0.724	0.302	0.301	0.500
D019_ESpritz-N	0.687	0.714	0.296	0.296	0.309
shuffletargets	0.000	0.624	0.421	0.239	1.000
D011_DISOPRED-3.1	0.647	0.701	0.290	0.260	0.500
D001_PyHCA	0.659	0.706	0.277	0.277	0.500
new-pdb-r_simple	0.931	0.634	0.528	0.209	0.067
D007_FoldUnfold	0.666	0.642	0.485	0.221	1.000
D017_DisEMBL-465	0.387	0.685	0.283	0.282	0.500
D016_DisEMBL-HL	0.530	0.654	0.274	0.274	0.086
D010_DisPredict-2	0.416	0.637	0.250	0.250	0.500
D023_S2D-2	0.938	0.654	0.230	0.230	0.288
D022_S2D-1	0.925	0.672	0.253	0.253	0.335
D009_GlobPlot	0.735	0.616	0.242	0.240	0.290
D033_DynaMine	0.365	0.603	0.236	0.235	0.500
new-disprot-all_simple_cons	0.914	0.567	0.193	0.193	0.400
random	0.500	0.500	0.163	0.162	0.500
shuffledataset	0.000	0.500	0.230	0.162	1.000
D032_DFLpred	0.094	0.410	0.142	0.143	0.180

0.1.2 Metrics calculated at target level

	bac	csi	f05	f1s	f2s	fnr	fom	\
D029_SPOT-Disorder2	0.701	0.385	0.455	0.479	0.540	0.314	0.198	
D025_RawMSA	0.697	0.369	0.440	0.458	0.514	0.348	0.180	
D028_SPOT-Disorder1	0.681	0.361	0.437	0.450	0.501	0.353	0.196	
D026_AUCpreD	0.675	0.349	0.404	0.420	0.472	0.398	0.195	
D005_IUPred-long	0.659	0.312	0.398	0.403	0.445	0.436	0.182	
shuffletargets	0.624	0.227	0.000	0.000	0.000	1.000	0.122	
D003_IUPred2A-long	0.656	0.308	0.396	0.400	0.439	0.447	0.185	
D002_Predisorder	0.688	0.332	0.393	0.440	0.537	0.238	0.169	
D011_DISOPRED-3.1	0.644	0.298	0.389	0.385	0.418	0.460	0.198	
D004_IUPred2A-short	0.648	0.299	0.398	0.393	0.420	0.497	0.197	
D008_IsUnstruct	0.675	0.326	0.393	0.429	0.509	0.308	0.180	
D006_IUPred-short	0.647	0.297	0.397	0.392	0.419	0.497	0.197	
D027_AUCpreD-np	0.641	0.307	0.387	0.383	0.412	0.505	0.207	
D031_JRONN	0.671	0.311	0.384	0.416	0.492	0.328	0.176	
D020_ESpritz-X	0.635	0.297	0.392	0.387	0.414	0.508	0.201	
D015_VSL2B	0.677	0.318	0.377	0.425	0.525	0.238	0.179	
D019_ESpritz-N	0.660	0.302	0.382	0.402	0.465	0.376	0.185	
D021_MobiDB-lite	0.673	0.320	0.399	0.421	0.480	0.384	0.174	
D013_fIDPln	0.647	0.331	0.408	0.416	0.460	0.452	0.236	
D030_SPOT-Disorder-Single	0.625	0.294	0.389	0.374	0.391	0.544	0.209	
D024_DisoMine	0.634	0.320	0.399	0.405	0.450	0.427	0.244	
D014_fIDPnn	0.619	0.289	0.394	0.360	0.360	0.617	0.252	
new-pdb-r_simple	0.668	0.342	0.382	0.440	0.563	0.101	0.346	
D001_PyHCA	0.641	0.290	0.366	0.390	0.455	0.390	0.196	

D018_ESpritz-D	0.617	0.335	0.428	0.414	0.438	0.494	0.340
D033_DynaMine	0.606	0.179	0.234	0.259	0.335	0.476	0.152
D017_DisEMBL-465	0.588	0.229	0.351	0.326	0.329	0.639	0.223
D007_FoldUnfold	0.620	0.286	0.000	0.000	0.000	1.000	0.408
D016_DisEMBL-HL	0.605	0.241	0.323	0.345	0.407	0.451	0.212
D023_S2D-2	0.601	0.269	0.308	0.369	0.506	0.079	0.164
D009_GlobPlot	0.589	0.240	0.310	0.345	0.438	0.292	0.203
D022_S2D-1	0.598	0.266	0.307	0.367	0.501	0.093	0.191
new-disprot-all_simple_cons	0.559	0.247	0.290	0.343	0.469	0.122	0.204
D010_DisPredict-2	0.548	0.213	0.286	0.291	0.330	0.566	0.258
D032_DFLpred	0.504	0.080	0.142	0.126	0.126	0.861	0.202
random	0.500	0.140	0.188	0.245	0.353	0.500	0.162
shuffledataset	0.500	0.088	0.000	0.000	0.000	1.000	0.162

	fpr	inf	mcc	mk	npv	ppv	tnr	\
D029_SPOT-Disorder2	0.301	0.373	0.305	0.261	0.802	0.459	0.699	
D025_RawMSA	0.274	0.363	0.300	0.273	0.820	0.453	0.726	
D028_SPOT-Disorder1	0.302	0.332	0.282	0.256	0.804	0.453	0.698	
D026_AUCpreD	0.283	0.322	0.270	0.243	0.805	0.439	0.717	
D005_IUPred-long	0.260	0.289	0.250	0.262	0.818	0.444	0.740	
shuffletargets	0.122	-0.122	0.249	0.878	0.878	1.000	0.878	
D003_IUPred2A-long	0.253	0.285	0.247	0.258	0.815	0.443	0.747	
D002_Predisorder	0.412	0.342	0.247	0.206	0.831	0.375	0.588	
D011_DISOPRED-3.1	0.253	0.285	0.245	0.256	0.802	0.454	0.747	
D004_IUPred2A-short	0.210	0.283	0.242	0.229	0.803	0.425	0.790	
D008_IsUnstruct	0.360	0.322	0.242	0.205	0.820	0.386	0.640	
D006_IUPred-short	0.211	0.281	0.240	0.230	0.803	0.427	0.789	
D027_AUCpreD-np	0.224	0.273	0.239	0.228	0.793	0.435	0.776	
D031_JRONN	0.361	0.304	0.237	0.208	0.824	0.384	0.639	
D020_ESpritz-X	0.217	0.266	0.233	0.225	0.799	0.426	0.783	
D015_VSL2B	0.436	0.320	0.232	0.181	0.821	0.360	0.564	
D019_ESpritz-N	0.313	0.303	0.232	0.203	0.815	0.388	0.687	
D021_MobiDB-lite	0.392	0.213	0.231	0.227	0.826	0.400	0.608	
D013_fIDPln	0.273	0.248	0.227	0.214	0.764	0.449	0.727	
D030_SPOT-Disorder-Single	0.205	0.235	0.223	0.238	0.791	0.447	0.795	
D024_DisoMine	0.326	0.223	0.209	0.191	0.756	0.435	0.674	
D014_fIDPnn	0.151	0.195	0.205	0.283	0.748	0.535	0.849	
new-pdb-r_simple	0.600	0.295	0.204	0.013	0.654	0.359	0.400	
D001_PyHCA	0.341	0.259	0.199	0.177	0.804	0.373	0.659	
D018_ESpritz-D	0.293	0.177	0.182	0.161	0.660	0.501	0.707	
D033_DynaMine	0.297	0.241	0.173	0.174	0.848	0.326	0.703	
D017_DisEMBL-465	0.170	0.181	0.169	0.172	0.777	0.395	0.830	
D007_FoldUnfold	0.382	-0.382	0.169	0.592	0.592	1.000	0.618	
D016_DisEMBL-HL	0.350	0.191	0.136	0.111	0.788	0.323	0.650	
D023_S2D-2	0.771	0.149	0.122	0.119	0.836	0.283	0.229	
D009_GlobPlot	0.549	0.167	0.121	0.100	0.797	0.302	0.451	
D022_S2D-1	0.760	0.146	0.116	0.091	0.809	0.283	0.240	

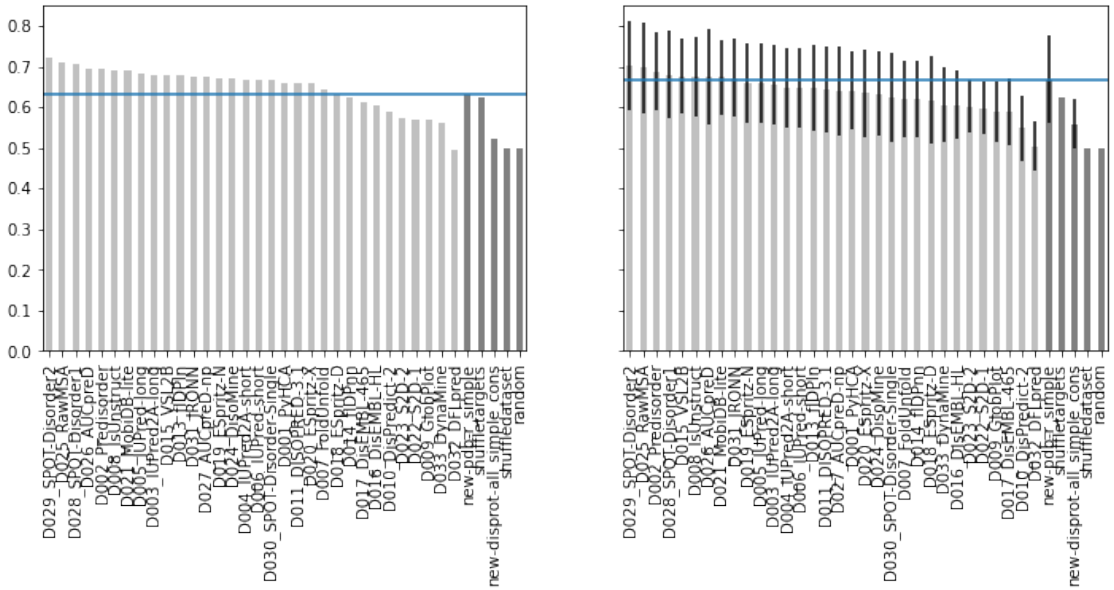
new-disprot-all_simple_cons	0.810	0.077	0.067	0.073	0.796	0.276	0.190
D010_DisPredict-2	0.352	0.055	0.055	0.064	0.742	0.322	0.648
D032_DFLpred	0.118	0.021	0.018	0.014	0.798	0.216	0.882
random	0.501	-0.001	0.000	0.000	0.838	0.162	0.499
shuffledataset	0.162	-0.162	0.000	0.838	0.838	1.000	0.838

	tpr	thr	aucroc	aucpr	aps
D029_SPOT-Disorder2	0.686	0.370	NaN	NaN	NaN
D025_RawMSA	0.652	0.500	NaN	NaN	NaN
D028_SPOT-Disorder1	0.647	0.460	NaN	NaN	NaN
D026_AUCpreD	0.602	0.500	NaN	NaN	NaN
D005_IUPred-long	0.564	0.502	NaN	NaN	NaN
shuffletargets	0.000	1.000	0.624	0.421	0.239
D003_IUPred2A-long	0.553	0.502	NaN	NaN	NaN
D002_Predisorder	0.762	0.500	NaN	NaN	NaN
D011_DISOPRED-3.1	0.540	0.500	NaN	NaN	NaN
D004_IUPred2A-short	0.503	0.501	NaN	NaN	NaN
D008_IsUnstruct	0.692	0.500	NaN	NaN	NaN
D006_IUPred-short	0.503	0.501	NaN	NaN	NaN
D027_AUCpreD-np	0.495	0.500	NaN	NaN	NaN
D031_JRONN	0.672	0.500	NaN	NaN	NaN
D020_ESpritz-X	0.492	0.144	NaN	NaN	NaN
D015_VSL2B	0.762	0.500	NaN	NaN	NaN
D019_ESpritz-N	0.624	0.309	NaN	NaN	NaN
D021_MobiDB-lite	0.616	0.250	NaN	NaN	NaN
D013_fIDPln	0.548	0.353	NaN	NaN	NaN
D030_SPOT-Disorder-Single	0.456	0.426	NaN	NaN	NaN
D024_DisoMine	0.573	0.376	NaN	NaN	NaN
D014_fIDPnn	0.383	0.505	NaN	NaN	NaN
new-pdb-r_simple	0.899	0.067	NaN	NaN	NaN
D001_PyHCA	0.610	0.500	NaN	NaN	NaN
D018_ESpritz-D	0.506	0.508	NaN	NaN	NaN
D033_DynaMine	0.524	0.500	NaN	NaN	NaN
D017_DisEMBL-465	0.361	0.500	NaN	NaN	NaN
D007_FoldUnfold	0.000	1.000	NaN	NaN	NaN
D016_DisEMBL-HL	0.549	0.086	NaN	NaN	NaN
D023_S2D-2	0.921	0.288	NaN	NaN	NaN
D009_GlobPlot	0.708	0.290	NaN	NaN	NaN
D022_S2D-1	0.907	0.335	NaN	NaN	NaN
new-disprot-all_simple_cons	0.878	0.400	NaN	NaN	NaN
D010_DisPredict-2	0.434	0.500	NaN	NaN	NaN
D032_DFLpred	0.139	0.180	NaN	NaN	NaN
random	0.500	0.500	0.500	0.163	0.162
shuffledataset	0.000	1.000	0.500	0.230	0.162

0.2 Plot of single metrics at dataset and target levels with errors

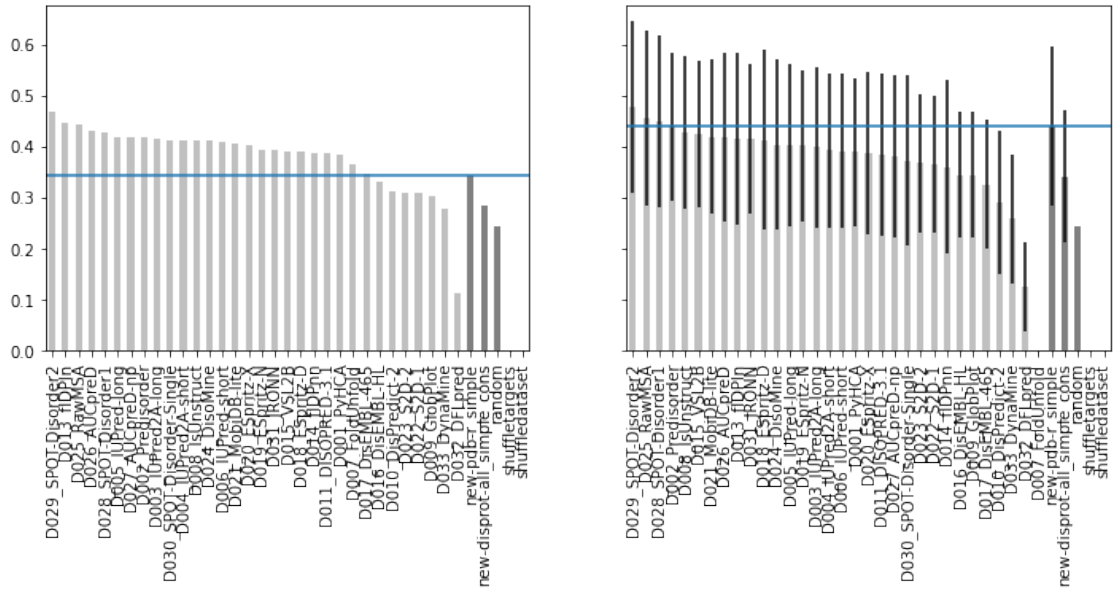
0.2.1 Balanced accuracy

- dataset level (sx); error: confidence interval calculated on 1000-rounds bootstrap (invisible since too small)
- target level (dx); standard deviation



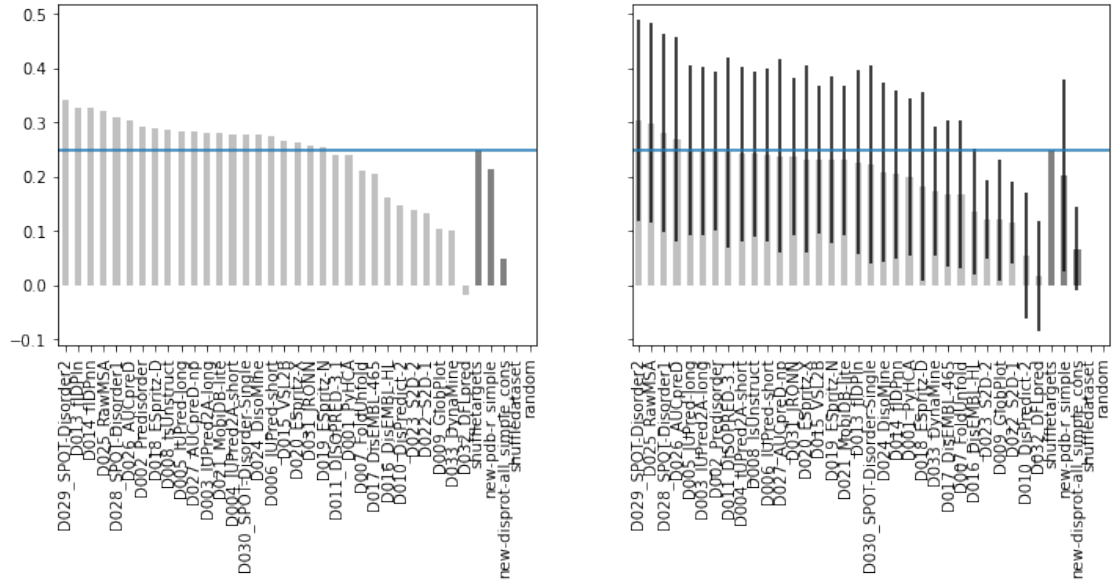
0.2.2 F 1 score

- dataset level (sx); error: confidence interval calculated on 1000-rounds bootstrap (invisible since too small)
- target level (dx); standard deviation



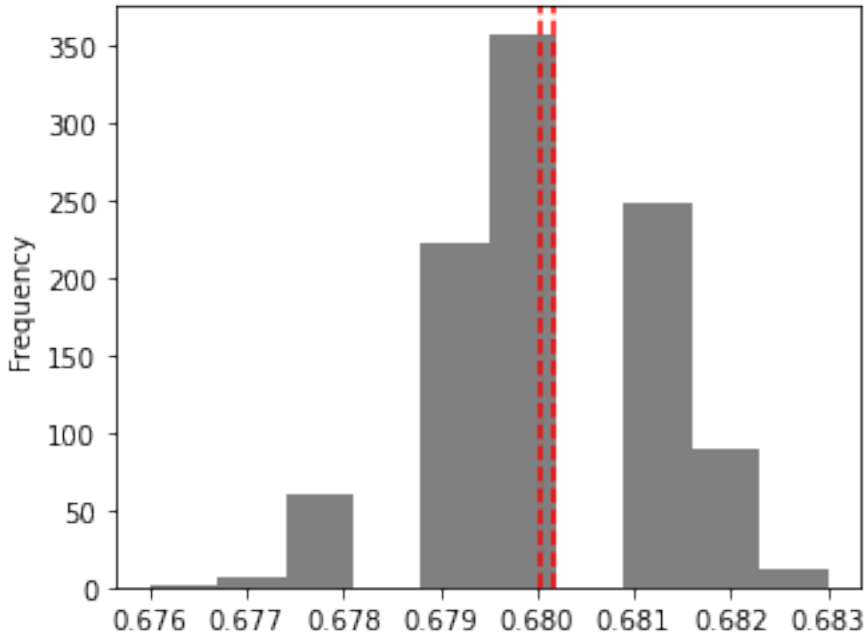
0.2.3 MCC

- dataset level (sx); error: confidence interval calculated on 1000-rounds bootstrap (invisible since too small)
- target level (dx); standard deviation



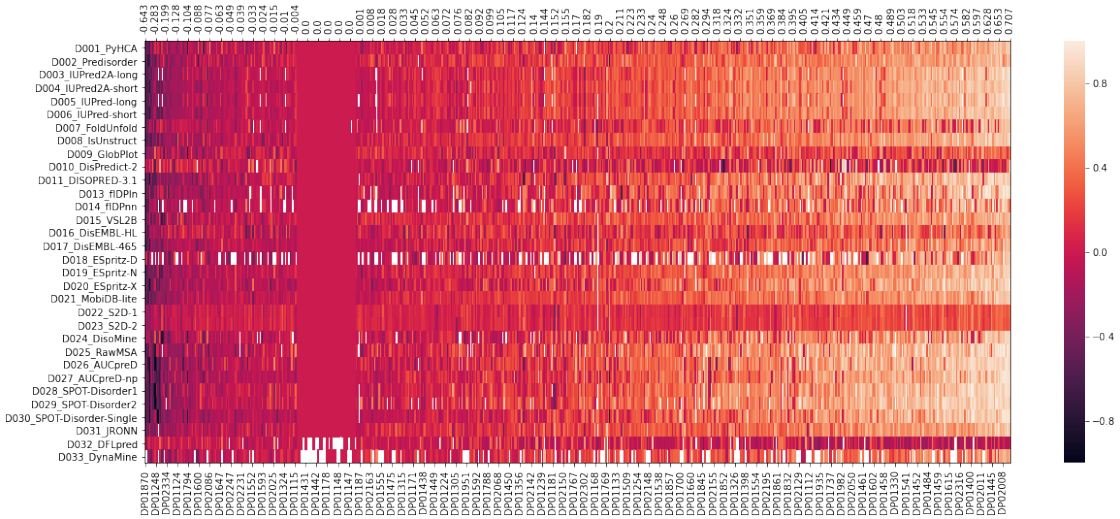
0.3 Example of confidence interval

Confidence Interval for the distribution of 1000 Balanced Accuracy (calculated at the dataset level) scores for IUpred2A.



0.4 MCC per target per predictor

Heatmap representing the MCC for each target for each predictor. Sorted by average-target MCC (big-->small), which can be seen on upper tick labels.

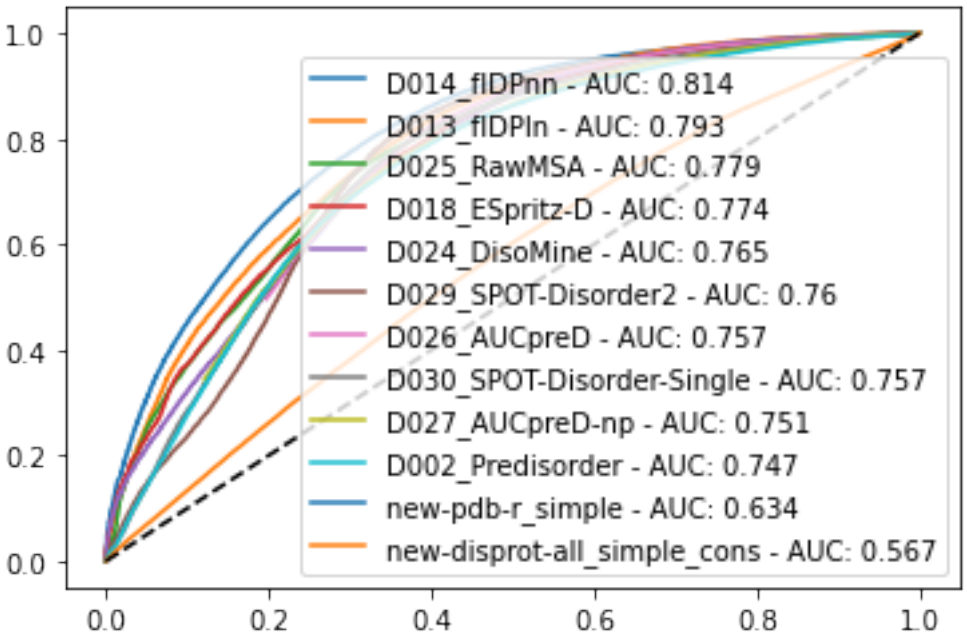


0.5 Predictor correlation

MCC calculated at the target level of all predictors against all predictors. Each point is a target, their coordinates are their MCC calculated from predictor x and predictor y. The Diagonal shows the distribution of MCC for predictor x=y

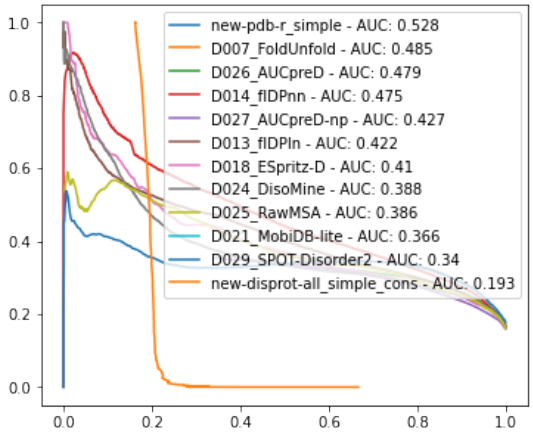
0.5.1 ROC curve

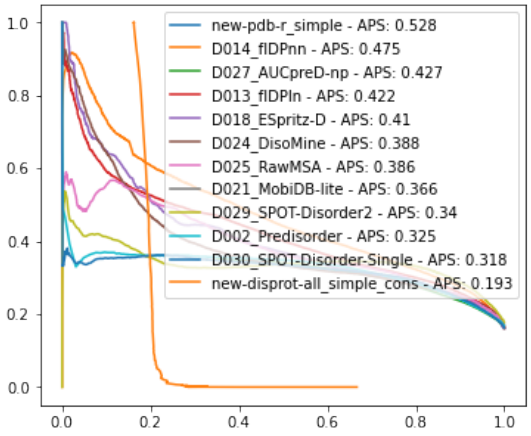
ROC curve. x axis 1-specificity; y axis sensitivity. Only first 10 best ranking methods are shown. Ranking is based on ROC AUC.



0.5.2 Precision-Recall curve

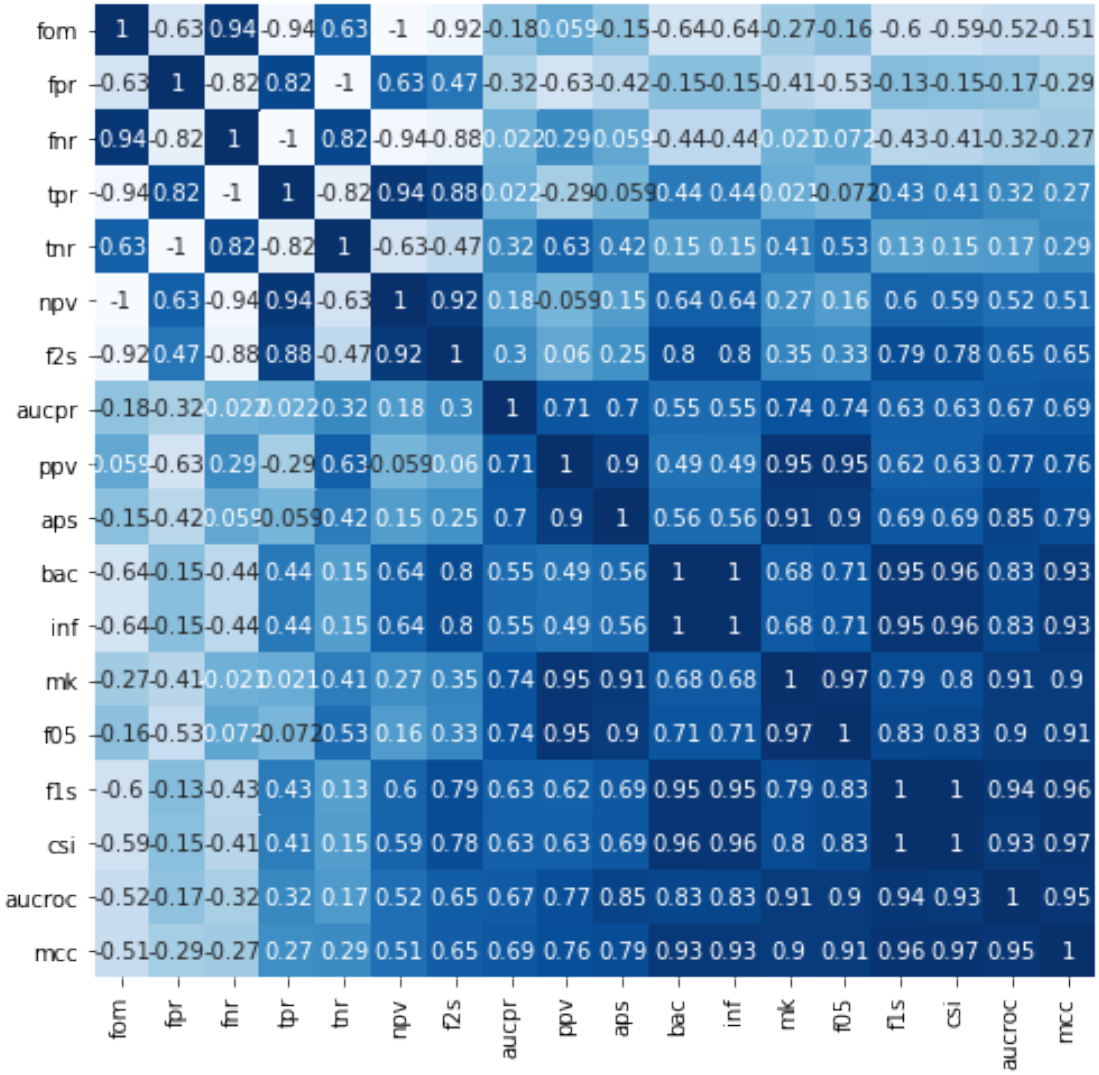
Precision-Recall curve. x axis recall; y axis precision. Only first 10 best ranking methods are shown. * (sx) Ranking is based on PR AUC * (dx) Ranking is based on APS (average precision score)


new-pdb-r_simple - AUC: 0.528
D007_FoldUnfold - AUC: 0.485
D026_AUCpreD - AUC: 0.479
D014_flDPnn - AUC: 0.475
D027_AUCpreD-np - AUC: 0.427
D013_flDPln - AUC: 0.422
D018_ESpritz-D - AUC: 0.41
D024_DisoMine - AUC: 0.388
D025_RawMSA - AUC: 0.386
D021_MobiDB-lite - AUC: 0.366
D029_SPOT-Disorder2 - AUC: 0.34
new-disprot-all_simple_cons - AUC: 0.193
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


new-pdb-r_simple - APS: 0.528
D014_flDPnn - APS: 0.475
D027_AUCpreD-np - APS: 0.427
D013_flDPln - APS: 0.422
D018_ESpritz-D - APS: 0.41
D024_DisoMine - APS: 0.388
D025_RawMSA - APS: 0.386
D021_MobiDB-lite - APS: 0.366
D029_SPOT-Disorder2 - APS: 0.34
D002_Predisorder - APS: 0.325
D030_SPOT-Disorder-Single - APS: 0.318
new-disprot-all_simple_cons - APS: 0.193
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

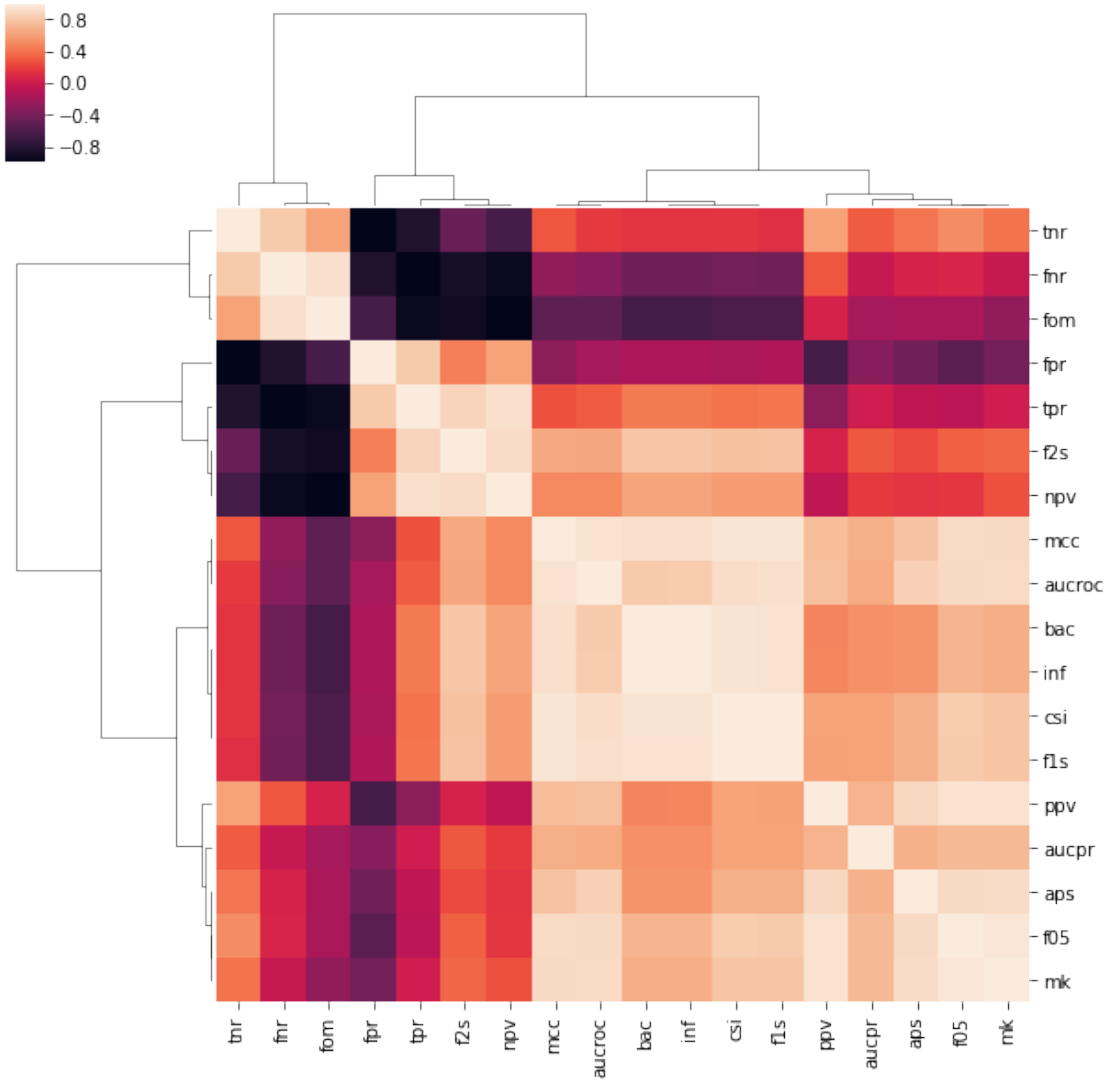
0.6 Metrics correlation

0.6.1 Pearson correlation between metrics calculated at the dataset level



0.6.2 Clustering between metrics calculated at the dataset level

Clustering distance is calculated as correlation



0.7 Ranking

0.7.1 Raw ranking of each metric

	bac	csi	f05	f1s	f2s	fnr	fom	fpr	\
D029_SPOT-Disorder2	1.0	1.0	4.0	1.0	1.0	30.0	30.0	18.0	
D025_RawMSA	2.0	3.0	5.0	3.0	5.0	25.0	28.0	21.0	
D013_fIDPln	11.0	2.0	3.0	2.0	25.0	10.0	14.0	33.0	
D026_AUCpreD	4.0	4.0	10.0	4.0	8.0	24.0	26.0	19.0	
D027_AUCpreD-np	13.0	6.0	6.0	8.0	19.0	16.0	19.0	27.0	
D002_Predisorder	5.0	8.0	18.0	8.0	2.0	32.0	34.0	8.0	
D028_SPOT-Disorder1	3.0	5.0	15.0	5.0	3.0	29.0	32.0	15.0	

D014_fIDPnn	25.0	21.0	1.0	21.0	33.0	4.0	7.0	37.0
D008_IsUnstruct	6.0	13.0	17.0	13.0	7.0	29.0	30.0	12.0
D024_DisoMine	15.0	13.0	11.0	13.0	20.0	17.0	18.0	25.0
D018_ESpritz-D	23.0	20.0	3.0	20.0	31.0	5.0	9.0	36.0
D030_SPOT-Disorder-Single	18.0	11.0	7.0	11.0	23.0	13.0	16.0	29.0
D005_IUPred-long	8.0	8.0	13.0	8.0	12.0	19.0	24.0	20.0
D021_MobiDB-lite	7.0	15.0	19.0	15.0	7.0	31.0	31.0	11.0
D004_IUPred2A-short	16.0	11.0	8.0	11.0	21.0	15.0	17.0	28.0
D003_IUPred2A-long	10.0	9.0	14.0	9.0	13.0	18.0	23.0	22.0
D006_IUPred-short	18.0	14.0	10.0	14.0	22.0	14.0	16.0	26.0
D020_ESpritz-X	21.0	16.0	12.0	16.0	26.0	12.0	13.0	30.0
D015_VSL2B	10.0	19.0	24.0	19.0	4.0	33.0	35.0	7.0
D031_JRONN	12.0	18.0	23.0	18.0	10.0	27.0	27.0	9.0
D019_ESpritz-N	15.0	17.0	20.0	17.0	12.0	24.0	25.0	13.0
D011_DISOPRED-3.1	20.0	22.0	21.0	22.0	17.0	20.0	21.0	16.0
D001_PyHCA	20.0	23.0	22.0	23.0	16.0	21.0	22.0	14.0
D007_FoldUnfold	22.0	25.0	25.0	24.0	18.0	22.0	20.0	11.0
new-pdb-r_simple	24.0	27.0	28.0	26.0	9.0	36.0	37.0	4.0
D017_DisEMBL-465	27.0	26.0	17.0	25.0	29.0	7.0	7.0	31.0
shuffletargets	26.0	24.0	37.0	37.0	37.0	2.0	8.0	34.0
D016_DisEMBL-HL	28.0	28.0	27.0	27.0	28.0	11.0	10.0	18.0
D010_DisPredict-2	29.0	29.0	26.0	28.0	30.0	8.0	5.0	24.0
D022_S2D-1	31.0	31.0	32.0	30.0	15.0	35.0	34.0	3.0
D023_S2D-2	30.0	30.0	31.0	30.0	14.0	37.0	36.0	2.0
shuffledataset	36.0	36.0	37.0	37.0	37.0	2.0	3.0	32.0
D009_GlobPlot	32.0	32.0	30.0	31.0	27.0	26.0	12.0	5.0
D033_DynaMine	33.0	34.0	29.0	33.0	34.0	6.0	4.0	23.0
new-disprot-all_simple_cons	34.0	33.0	33.0	32.0	24.0	34.0	11.0	1.0
random	36.0	35.0	34.0	34.0	32.0	9.0	3.0	6.0
D032_DFLpred	37.0	37.0	35.0	35.0	35.0	3.0	1.0	35.0

	inf	mcc	mk	npv	ppv	tnr	tpr	aucroc	\
D029_SPOT-Disorder2	1.0	1.0	6.0	9.0	6.0	21.0	8.0	6.0	
D025_RawMSA	2.0	4.0	7.0	10.0	10.0	17.0	13.0	3.0	
D013_fIDPln	11.0	3.0	5.0	24.0	5.0	5.0	28.0	2.0	
D026_AUCpreD	4.0	6.0	8.0	12.0	14.0	19.0	15.0	8.0	
D027_AUCpreD-np	13.0	11.0	10.0	19.0	8.0	11.0	22.0	9.0	
D002_Predisorder	5.0	7.0	18.0	5.0	20.0	30.0	6.0	10.0	
D028_SPOT-Disorder1	3.0	5.0	9.0	6.0	18.0	23.0	10.0	12.0	
D014_fIDPnn	25.0	3.0	3.0	32.0	3.0	1.0	34.0	1.0	
D008_IsUnstruct	6.0	9.0	19.0	9.0	19.0	26.0	10.0	12.0	
D024_DisoMine	15.0	16.0	14.0	20.0	13.0	13.0	21.0	5.0	
D018_ESpritz-D	23.0	8.0	4.0	29.0	4.0	2.0	33.0	4.0	
D030_SPOT-Disorder-Single	17.0	15.0	11.0	23.0	8.0	9.0	25.0	8.0	
D005_IUPred-long	8.0	10.0	15.0	14.0	17.0	18.0	19.0	17.0	
D021_MobiDB-lite	7.0	13.0	20.0	7.0	21.0	28.0	7.0	17.0	
D004_IUPred2A-short	16.0	15.0	12.0	21.0	9.0	10.0	23.0	13.0	

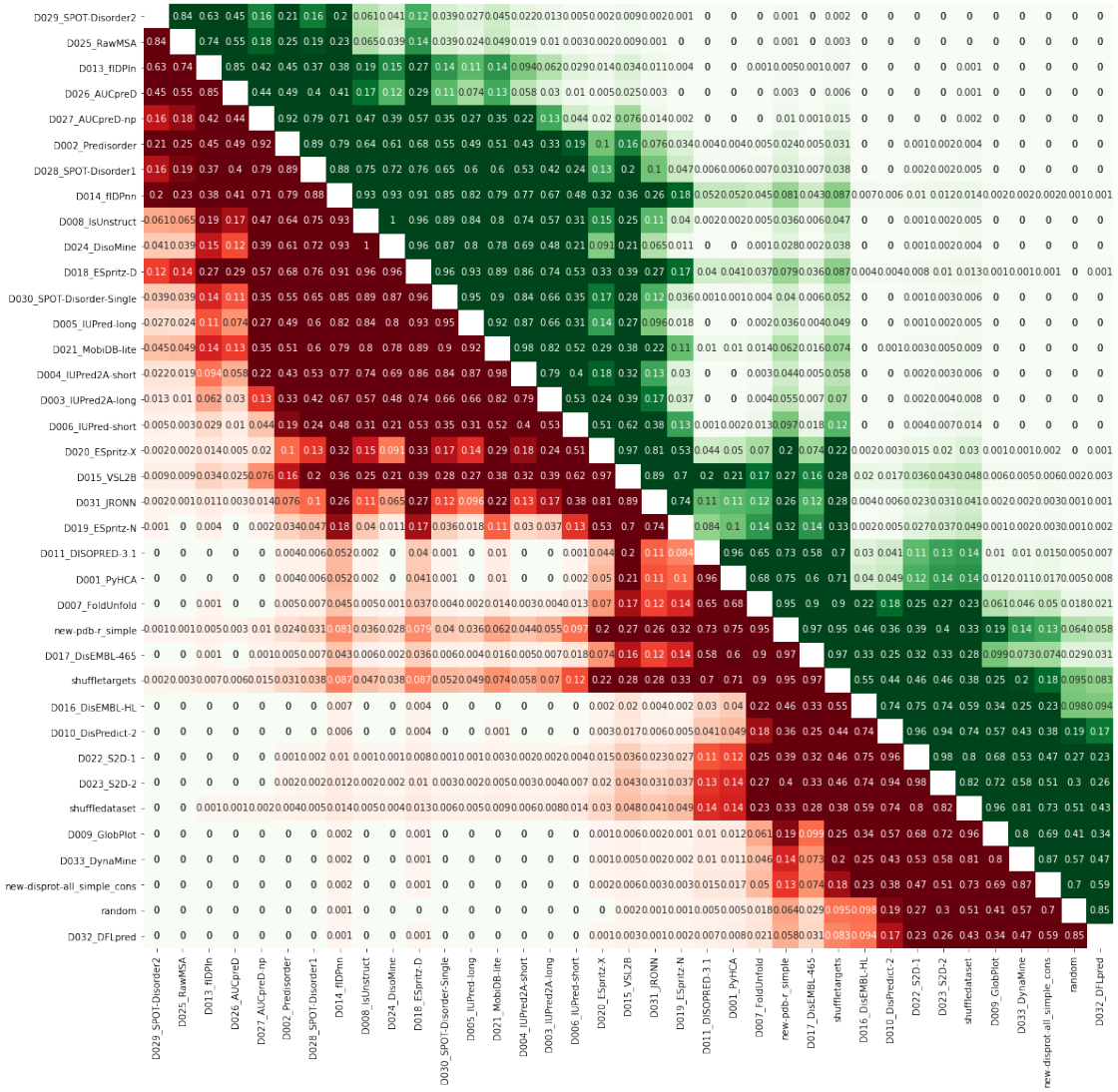
D003_IUPred2A-long	10.0	12.0	17.0	15.0	17.0	16.0	20.0	18.0
D006_IUPred-short	18.0	17.0	14.0	23.0	12.0	12.0	24.0	15.0
D020_ESpritz-X	21.0	19.0	16.0	25.0	12.0	8.0	26.0	15.0
D015_VSL2B	9.0	18.0	21.0	3.0	26.0	31.0	5.0	19.0
D031_JRONN	12.0	20.0	23.0	11.0	25.0	29.0	11.0	20.0
D019_ESpritz-N	15.0	21.0	23.0	13.0	22.0	25.0	15.0	21.0
D011_DISOPRED-3.1	21.0	23.0	25.0	17.0	23.0	22.0	18.0	23.0
D001_PyHCA	19.0	24.0	26.0	16.0	24.0	24.0	17.0	22.0
D007_FoldUnfold	22.0	26.0	28.0	18.0	28.0	28.0	16.0	28.0
new-pdb-r_simple	24.0	25.0	27.0	1.0	31.0	34.0	2.0	30.0
D017_DisEMBL-465	26.0	27.0	24.0	32.0	15.0	7.0	31.0	24.0
shuffletargets	36.0	22.0	1.0	30.0	2.0	4.0	37.0	31.0
D016_DisEMBL-HL	27.0	28.0	30.0	28.0	29.0	21.0	27.0	27.0
D010_DisPredict-2	28.0	29.0	32.0	33.0	27.0	14.0	30.0	29.0
D022_S2D-1	30.0	31.0	32.0	5.0	34.0	35.0	3.0	25.0
D023_S2D-2	29.0	30.0	29.0	2.0	34.0	36.0	1.0	27.0
shuffledataset	37.0	36.0	2.0	36.0	2.0	6.0	37.0	36.0
D009_GlobPlot	31.0	32.0	34.0	26.0	32.0	33.0	12.0	32.0
D033_DynaMine	32.0	33.0	33.0	34.0	30.0	15.0	32.0	33.0
new-disprot-all_simple_cons	33.0	34.0	35.0	27.0	35.0	37.0	4.0	34.0
random	34.0	36.0	36.0	36.0	36.0	32.0	29.0	36.0
D032_DFLpred	35.0	37.0	37.0	37.0	37.0	3.0	35.0	37.0

	aucpr	aps
D029_SPOT-Disorder2	12.0	6.0
D025_RawMSA	10.0	5.0
D013_fIDPln	6.0	2.0
D026_AUCpreD	3.0	13.0
D027_AUCpreD-np	5.0	10.0
D002_Predisorder	13.0	8.0
D028_SPOT-Disorder1	28.0	24.0
D014_fIDPnn	4.0	1.0
D008_IsUnstruct	14.0	11.0
D024_DisoMine	9.0	4.0
D018_ESpritz-D	8.0	3.0
D030_SPOT-Disorder-Single	15.0	9.0
D005_IUPred-long	22.0	18.0
D021_MobiDB-lite	11.0	7.0
D004_IUPred2A-short	16.0	13.0
D003_IUPred2A-long	22.0	18.0
D006_IUPred-short	17.0	14.0
D020_ESpritz-X	18.0	15.0
D015_VSL2B	20.0	20.0
D031_JRONN	19.0	16.0
D019_ESpritz-N	23.0	20.0
D011_DISOPRED-3.1	24.0	25.0
D001_PyHCA	26.0	22.0

D007_FoldUnfold	2.0	32.0
new-pdb-r_simple	1.0	33.0
D017_DisEMBL-465	25.0	21.0
shuffletargets	7.0	29.0
D016_DisEMBL-HL	27.0	23.0
D010_DisPredict-2	30.0	27.0
D022_S2D-1	29.0	26.0
D023_S2D-2	34.0	31.0
shuffledataset	34.0	36.0
D009_GlobPlot	31.0	28.0
D033_DynaMine	32.0	30.0
new-disprot-all_simple_cons	35.0	34.0
random	36.0	36.0
D032_DFLpred	37.0	37.0

0.7.2 Average Overall Ranking

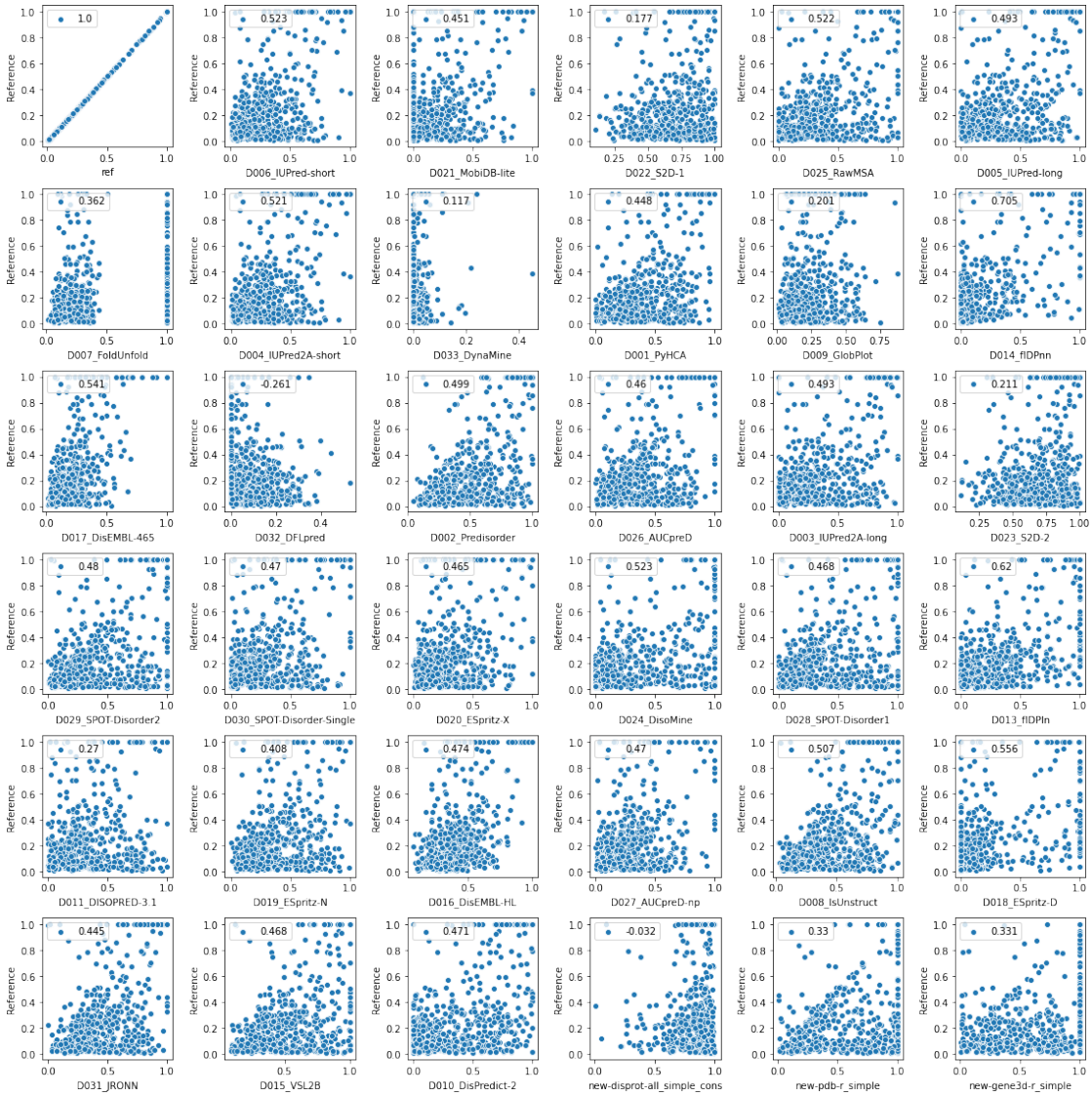
Average Overall ranking of predictors based on multiple metrics. For each metric a ranking is calculated so that each predictor has a distribution of rankings. THe matrix represents the statistical significance (expressed as p-value) of the difference between distribution of rankings. The order of predictors in the matrix reflects the overall ranking (average of the distribution of ranking).




```
0.3541292880258076
```

0.8 Disorder content

Correlation beween disorder content in the reference and predicted disorder content. Each dot is a protein in the dataset. The legend show Pearson R value.



0.9 Fully disordered

Performance of predictors on discriminate fully disordered proteins (>95% id content) from those

	tn	fp	fn	tp
ref	529	0	0	40
D016_DisEMBL-HL	529	0	36	4
D032_DFLpred	529	0	40	0
D009_GlobPlot	529	0	40	0
D033_DynaMine	529	0	40	0
D017_DisEMBL-465	529	0	38	2
D006_IUPred-short	528	1	30	10

D004_IUPred2A-short	527	2	30	10
D021_MobiDB-lite	527	2	29	11
D019_ESpritz-N	525	4	28	12
D001_PyHCA	524	5	28	12
D011_DISOPRED-3.1	524	5	34	6
D020_ESpritz-X	523	6	31	9
D005_IUPred-long	523	6	25	15
D003_IUPred2A-long	523	6	27	13
D031_JRONN	523	6	28	12
D030_SPOT-Disorder-Single	522	7	25	15
D027_AUCpreD-np	519	10	30	10
D026_AUCpreD	517	12	23	17
D002_Predisorder	517	12	21	19
D008_IsUnstruct	516	13	24	16
D014_fIDPnn	514	15	14	26
D010_DisPredict-2	514	15	27	13
D025_RawMSA	511	18	14	26
D015_VSL2B	506	23	17	23
D029_SPOT-Disorder2	503	26	19	21
D023_S2D-2	500	29	26	14
D028_SPOT-Disorder1	500	29	18	22
D013_fIDPln	498	31	14	26
D018_ESpritz-D	487	42	19	21
D024_DisoMine	481	48	13	27
D022_S2D-1	477	52	25	15
new-pdb-r_simple	412	117	8	32
new-gene3d-r_simple	394	135	3	37
new-disprot-all_simple_cons	393	136	34	6
D007_FoldUnfold	386	143	9	31