Comparison of SiMLR and RGCCA: summary of all experiments

Brian B. Avants et al.

2020-10-13

Table 1: Summary of RGCCA-SGCCA-SiMLR comparison results. RGCCA = regularized generalized canonical correlation analysis; SGCCA = parse generalized canonical correlation analysis; Sim = similarity-driven multivariate linear reconstruction (SiMLR); Reg = regression; CCA = absolute canonical covariance; ICA = ICA mixing method; SVD = SVD mixing method. Best results are highlighted in cadet blue; worst in ntiquewhite. SiMLR with the absolute canonical covariance similarity measurement and SVD (SimCCASVD)as a mixing method performs bes verall. SiMLR with the regression energy and ICA mixing method (SimRegICA) outperforms SGCCA most consistently across sparseness level provides closely competitive performance overall, and is highlighted in pink.

study	RGCCA	SGCCA	SimCCAICA	SimCCASVD	SimRegICA	SimRegSVD	metric
Recon-Signal	0.35+/-0.18	0.45+/-0.17	0.5+/-0.15	0.51+/-0.14	0.49+/-0.13	0.49+/-0.14	R-squared
Noise-Sens.	0.09	0.16	0.09	0.06	0.07	0.1	R-squared
Mixomics	N/A	0.62 +/ 0.01	0.64 +/ 0.03	0.65 +/ 0.03	0.65 +/ 0.04	0.61 +/ 0.03	Concordance
brainAge	N/A	2+/-1.5	1.6+/-1.2	1.4+/-1.2	1.6+/-1.3	1.7+/-1.2	MAE
PING-SNPs	N/A	N.S.	N/A	3 components	6 components	N/A	Inferential
PING-Inf	N/A	N.S.	N/A	3 components	6 components	N/A	Inferential