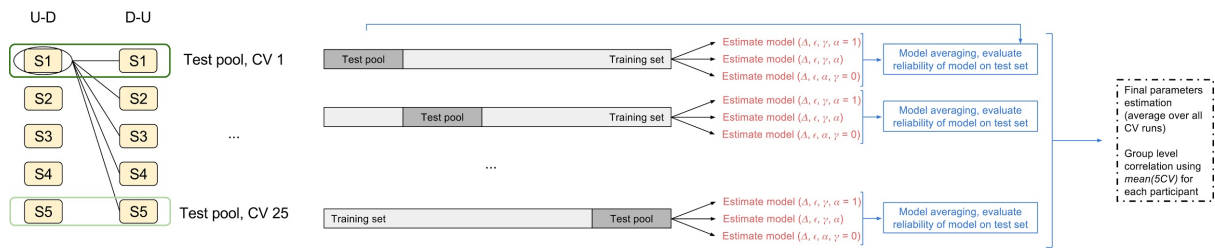
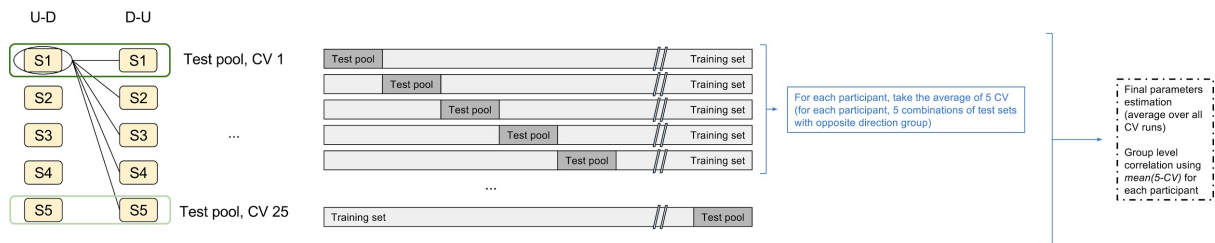


Supplementary Figures



Supplementary Fig. 1 Cross-validation procedure in the global model estimation and averaging process.



Supplementary Fig. 2 Cross-validation procedure in the mixture (global/local) model estimation process.

Supplementary Notes

Supplementary Note 1

As described in the main text, the cross-validation with an iterative evaluation approach was designed and utilized to find the optimal number of SLR iterations to compute the final decoder for DecNef induction. Nevertheless, one may worry that to precisely report generalizable decoding accuracy when there is an additional parameter to be set, nested cross-validation is warranted to avoid information leak. However, in the present case, the objective was not to compare between different decoding algorithms or precisely report generalizable decoding accuracy. The main interest was to examine the statistical significance between shuffled data and the original data. Because the same algorithm was used, information leak should not be an issue.

Supplementary Note 2

Contrast U-D1: one-tailed t-test, $t_4 = 4.253$, $P = 0.0067$ uncorrected; $P = 0.026$ corrected for multiple comparisons.

Contrast D-U2: one-tailed t-test, $t_4 = 2.188$, $P = 0.0469$ uncorrected; $P = 0.14$ corrected.

Contrast D-U1: one-tailed t-test, $t_4 = -0.978$, $P = 0.192$ uncorrected; $P = 0.192$ corrected.

Contrast U-D2: one-tailed t-test, $t_4 = -1.626$, $P = 0.0896$ uncorrected; $P = 0.179$ corrected.

Difference between D-U1 and D-U2: one-tailed t-test, $t_4 = -2.512$, $P = 0.033$ uncorrected; $P = 0.0989$ corrected.

Difference between D-U2 and U-D2: one-tailed t-test, $t_4 = 2.296$, $P = 0.0416$ uncorrected; $P = 0.0833$ corrected.