

| Accuracy | F1   | Model             | Subject | Fold |
|----------|------|-------------------|---------|------|
| 0,98     | 0,98 | Default algorithm | 50      | 0    |
| 0,99     | 0,99 | Pre-trained CAE   | 50      | 0    |
| 0,99     | 0,99 | Default algorithm | 50      | 1    |
| 1,00     | 1,00 | Pre-trained CAE   | 50      | 1    |
| 0,97     | 0,97 | Default algorithm | 50      | 2    |
| 0,98     | 0,98 | Pre-trained CAE   | 50      | 2    |
| 0,98     | 0,98 | Default algorithm | 50      | 3    |
| 1,00     | 1,00 | Pre-trained CAE   | 50      | 3    |
| 0,97     | 0,97 | Default algorithm | 50      | 4    |
| 0,99     | 0,99 | Pre-trained CAE   | 50      | 4    |
| 0,99     | 0,99 | Default algorithm | 100     | 0    |
| 1,00     | 1,00 | Pre-trained CAE   | 100     | 0    |
| 0,99     | 0,99 | Default algorithm | 100     | 1    |
| 1,00     | 1,00 | Pre-trained CAE   | 100     | 1    |
| 0,98     | 0,98 | Default algorithm | 100     | 2    |
| 0,99     | 0,99 | Pre-trained CAE   | 100     | 2    |
| 0,99     | 0,99 | Default algorithm | 100     | 3    |
| 1,00     | 1,00 | Pre-trained CAE   | 100     | 3    |
| 0,99     | 0,99 | Default algorithm | 100     | 4    |
| 0,99     | 0,99 | Pre-trained CAE   | 100     | 4    |
| 1,00     | 1,00 | Default algorithm | 200     | 0    |
| 1,00     | 1,00 | Pre-trained CAE   | 200     | 0    |
| 1,00     | 1,00 | Default algorithm | 200     | 1    |
| 1,00     | 1,00 | Pre-trained CAE   | 200     | 1    |
| 0,99     | 0,98 | Default algorithm | 200     | 2    |
| 0,99     | 0,99 | Pre-trained CAE   | 200     | 2    |
| 0,99     | 0,99 | Default algorithm | 200     | 3    |
| 1,00     | 1,00 | Pre-trained CAE   | 200     | 3    |
| 0,99     | 0,99 | Default algorithm | 200     | 4    |
| 0,99     | 0,99 | Pre-trained CAE   | 200     | 4    |
| 1,00     | 1,00 | Default algorithm | global  | 0    |
| 1,00     | 1,00 | Pre-trained CAE   | global  | 0    |
| 1,00     | 1,00 | Default algorithm | global  | 1    |
| 1,00     | 1,00 | Pre-trained CAE   | global  | 1    |
| 0,99     | 0,99 | Default algorithm | global  | 2    |
| 0,99     | 0,99 | Pre-trained CAE   | global  | 2    |
| 1,00     | 1,00 | Default algorithm | global  | 3    |
| 1,00     | 1,00 | Pre-trained CAE   | global  | 3    |
| 0,99     | 0,99 | Default algorithm | global  | 4    |
| 0,99     | 0,99 | Pre-trained CAE   | global  | 4    |

Supplementary Table S5 - Classification performance (Accuracy and F1-score) of models trained on HCP test dataset with different subsamples in a 5-fold cross-validation scheme for one-contrast task classification.