ADHD Report

Logistic Regression using SWAG

The plot shows the range of CV errors for each dimension. There is a clear decay in CV errors as the dimension increases.

There are a total of 381 models of dimensions 9 to 20. The table below shows the frequency of each feature selected. The most frequent features are 'Insula-R' ↔ 'Paracentral-Lobule-R', 'Frontal-Sup-R' ↔ 'Frontal-Mid-R', 'Temporal-Mid-L' ↔ 'Lingual-L' and 'Insula-L' ↔ 'Frontal-Mid-L', which are contained by every model.

Feature	Variable	Frequency
'Insula-R' ↔ 'Paracentral-Lobule-R'	54.21	381
'Frontal-Sup-R'↔ 'Frontal-Mid-R'	72.68	381
'Temporal-Mid-L'↔ 'Lingual-L'	101.85	381
'Insula-L'↔ 'Frontal-Mid-L'	116.89	381
'Frontal-Sup-R'↔ 'Frontal-Inf-Orb-R'	104.34	377
'Supp-Motor-Area-L'↔ 'SupraMarginal-L'	151.147	377
Frontal-Sup-R'↔ 'ParahippocampaGyrus'	72.11	363
'Vermis-1-2'↔ 'Temporal-Mid-L'	150.114	363
'Vermis-4-5'↔ 'Frontal-Sup-Orb-R'	126.2	325
'Frontal-Sup-Medial-L'↔ 'Cingulum-Mid-L'	124.99	284
'Temporal-Mid-L'↔ 'Pallidum-R'	114.40	281
'Occipital-Mid-L'↔ 'Cerebelum-Crus2-L'	162.73	267
'Cingulum-Ant-L'↔ Paracentral-Lobule-R'	47.21	258
'Temporal-Pole-Sup-R'↔ 'Frontal-Mid-L'	146.89	235
'Frontal-Mid-L'↔ 'Caudate-R'	108.27	207
'Frontal-Mid-L'↔ 'Frontal-Sup-L'	108.91	201
'Temporal-Mid-L'↔ 'Temporal-Sup-L'	114.28	172
'Frontal-Sup-R'↔ 'Precuneus-R'	173.9	149
'Insula-L'↔ 'Postcentral-R'	116.55	84
'Frontal-Mid-L'↔ 'Cingulum-Ant-L'	108.47	73
'Frontal-Sup-Medial-R'↔ 'Cingulum-Mid-L'	134.99	66
'Cingulum-Post-L'↔ 'Postcentral-R'	74.55	63
'Supp-Motor-Area-L'↔ 'SupraMarginal-L'	151.46	55
'Frontal-Sup-L'↔ 'ParahippocampaGyrus'	13.11	51
'Caudate-R'↔ 'Paracentral-Lobule-R'	27.21	51
'Frontal-Sup-Medial-R'↔ 'Frontal-Inf-Tri-L'	134.23	46
'Insula-L'↔ 'Paracentral-Lobule-R'	116.21	45
'Cingulum-Post-L'↔ 'Paracentral-Lobule-R'	74.21	43
'Parietal-Sup-R'↔ 'Cuneus-L'	184.58	37
'Cingulum-Ant-R'↔ 'Frontal-Sup-R'	189.173	37
'Parietal-Inf-L'↔ 'Caudate-Head-L'	169.49	34
'Frontal-Sup-Medial-L'↔ 'Frontal-Inf-Tri-L'	124.23	28
'Insula-R'↔ 'Pallidum-R'	129.40	25
'Temporal-Mid-L'↔ 'Putamen-L'	114.6	23
'Insula-L'↔ 'Cingulum-Ant-L'	116.47	23
'Caudate-Head-L'↔ 'Cingulum-Ant-L'	49.47	21
'Frontal-Med-Or-R'↔ 'Frontal-Inf-Tri-L'	138.23	20
'Vermis-4-5'↔ 'Frontal-Sup-Medial-L'	126.124	18
'Frontal-Sup-R'↔ 'Cingulum-Ant-L'	173.47	13
'Cingulum-Mid-R'↔ 'Frontal-Sup-L'	82.13	12
'Frontal-Med-Orb-R'↔ 'Frontal-Mid-R'	138.107	9
'Rolandic-Oper-L'↔ 'Temporal-Inf-L'	148.71	9
'Lingual-L'↔ 'Frontal-Sup-L'	85.13	8
'Cingulum-Ant-R'↔ 'Frontal-Mid-L'	112.67	7
'Cingulum-Ant-R'↔ 'Cingulum-Mid-L'	189.65	7
'Cingulum-Ant-L'↔ 'Precuneu-R'	47.9	5
'Pallidum-R'↔ 'Temporal-Mid-R'	40.19	3
'Caudate-Head-L'↔ 'Precuneus-R'	49.9	3
'Cingulum-Ant-L'↔ 'Caudate-R'	47.27	1
'Temporal-Inf-L'↔ 'Lingual-L'	132.85	1
'Temporal-Sup-L'↔ 'Temporal-Mid-L'	135.114	1
'Vermis-6'↔ 'Temporal-Inf-L'	136.132	1
'Cingulum-Ant-R'↔ 'Paracentral-Lobule-R'	189.21	1

SVM Linear Analysis using SWAG

The plot shows the range of CV errors for each dimension.

FREQUENCY TABLE

In the post-processing, we took the minimum CV_alpha and selected all the models who have CV_alpha less than or equal to it. The minimum CV_alpha is 0.220925 and is the CV of dimension 20.

There are a total of 114 models of dimensions 18, 19, 20. "54,21", "91,85", "105,10", "121,68", "126,2", "135,105", "140,53", "150,114", "152,22", "154,112", "174,73" features are present in all the models. Below is the frequency table.

Feature	Variable	Frequency
'Insula-R'↔ 'Paracentral-Lobule-R'	54.21	114
'Frontal-Sup-L'↔ 'Lingual-L'	91.85	114
'Thalamus-L'↔ 'Frontal-Sup-Medial-L'	105.10	114
'Olfactory'↔ 'Frontal-Mid-R'	121.68	114
'Vermis-4-5'↔ 'Frontal-Sup-Orb-R'	126.2	114
'Temporal-Sup-L'↔ 'Thalamus-L'	135.105	114
'Parietal-Inf-R'↔ 'Precentral-R'	140.53	114
'Vermis-1-2'↔ 'Temporal-Mid-L'	150.114	114
'Angular-R'↔ 'Fusiform-L'	152.22	114
'Fusiform-R'↔ 'Cingulum-Ant-R'	154.112	114
'Cerebelum-6-L'↔ 'Cerebelum-Crus2-L'	174.73	114
'Parietal-Inf-L'↔ 'Temporal-Pole-Mid-L'	183.12	106
'Thalamus-L'↔'Frontal-Sup-L'	105.91	71
'Vermis-1-2'↔'Pallidum-R'	150.40	67
'Cuneus-R'↔'Frontal-Inf-Orb-L'	70.14	66
'Frontal-Sup-Medial-L'↔'Precentral-L'	130.80	66
'Frontal-Mid-R'↔'Cingulum-Ant-L'	161.47	66
'Parietal-Inf-L'↔'Fusiform-R'	157.81	56
'Frontal-Sup-Orb-L'↔'Cuneus-L'	78.58	40
'Angular-R'↔'Cerebelum-Crus2-L'	92.73	39
'Rolandic-Oper-L'↔'Frontal-Inf-Orb-L'	148.14	28
'Midbrain'↔'Temporal-Sup-L'	165.135	27
'Temporal-Pole-Sup-R'↔'Frontal-Inf-Orb-R'	185.34	24
'Cingulum-Ant-R'↔'Temporal-Mid-R'	189.8	22
'SupraMarginal-L'↔'Cingulum-Mid-L'	147.65	16
'Parietal-Inf-L'↔'Cingulum-Ant-L'	169.47	15
'Frontal-Sup-R'↔'Putamen-L'	72.6	12
'Precentral-L'↔'Occipital-Mid-R'	80.77	12
'Temporal-Mid-L'↔'Frontal-Inf-Orb-L'	187.14	11
'Parietal-Inf-L'↔'Precuneus-L'	169.18	10
'Frontal-Inf-Oper-R'↔'SupraMarginal-R'	190.127	10
'Occipital-Mid-R'↔'Lingual-R'	77.4	9
'Occipital-Sup-R'↔'Parietal-Sup-R'	137.131	9
'Thalamus-R'↔'Frontal-Sup-Medial-L'	62.10	8
'Temporal-Mid-L'↔'Frontal-Mid-R	114.68	8
'Frontal-Mid-L'↔'Frontal-Sup-L'	79.13	7
'Cingulum-Ant-R'↔'Frontal-Inf-Orb-R'	189.34	7
'Insula-L'↔'Brainstem'	61.35	6
'Calcarine-L'↔'Cerebelum-8-R'	88.45	6
'Frontal-Med-Orb-R'↔'Frontal-Mid-L'	138.89	6
'Rolandic-Oper-L'↔'Temporal-Pole-Sup-R'	148.146	6
'Frontal-Inf-Orb-L'↔'Putamen-L'	14.6	5
'Cingulum-Mid-R'↔'Frontal-Mid-L'	82.69	5
'Temporal-Pole-Sup-R'↔'Supp-Motor-Area-R'	146.30	5
'Cerebelum-8-R'↔'Cerebelum-6-L'	155.7	5
'Rectus-L'↔'Brainstem'	188.35	5
'Rectus-L'↔'Cingulum-Mid-L'	188.99	5
'Rectus-L'↔'Cerebelum-6-L'	188.174	5
'Cingulum-Ant-R'↔'Temporal-Mid-R'	189.64	5
'Frontal-Inf-Oper-R'↔'Frontal-Inf-Tri-R'	190.3	5
'Cuneus-L'↔'Precuneus-L'	58.38	4
'Thalamus-L'↔'Frontal-Sup-Medial-R'	105.83	4
'Frontal-Mid-L'↔'Frontal-Sup-Medial-L'	108.10	4

Feature	Variable	Frequency
'Occipital-Sup-R'↔'Precuneus-R'	137.9	4
'Frontal-Inf-Oper-R'↔'Cingulum-Mid-R'	164.82	4
'Midbrain'↔'Frontal-Inf-Tri-L'	165.23	4
'Cerebelum-6-L'↔'Temporal-Inf-R'	174.57	4
'Frontal-Sup-R'↔'Frontal-Mid-Orb-R'	104.90	3
'Insula-L'↔'Supp-Motor-Area-R'	116.30	3
'Insula-L'↔'Postcentral-R'	116.42	3
'Caudate-R'↔'Temporal-Pole-Mid-R'	117.102	3
'Precentral-L'↔'Insula-L'	128.116	3
'Temporal-Sup-L'↔'Cingulum-Mid-R'	135.82	3
'Supp-Motor-Area-L'↔'Angular-L'	139.118	3
'Precuneus-L'↔'Precuneus-L'	145.18	3
'RectalGyrus'↔'Frontal-Inf-Orb-R'	168.34	3
'Cuneus-L'↔'Cingulum-Ant-L'	58.47	2
'Occipital-Mid-R'↔'Temporal-Mid-R'	77.19	2
'Frontal-Sup-Medial-R'↔'Caudate-R'	83.27	2
'Angular-R'↔'Frontal-Sup-Orb-R'	92.2	2
'Supp-Motor-Area-L'↔'SupraMarginal-L'	151.147	2
'RectalGyrus'↔'Cerebelum-8-R'	168.97	2
'Paracentral-Lobule-L'↔'Postcentral-R'	177.55	2
'Paracentral-Lobule-L'↔'Cingulum-Mid-L'	177.65	2
'Temporal-Mid-L'↔'Cingulum-Ant-L'	179.47	2
'Parietal-Inf-L'↔'Angular-L'	183.118	2
'Cingulum-Ant-R'↔'Cingulum-Mid-L'	189.99	2
'Cuneus-L'↔Putamen-L'	24.6	1
'Insula-L'↔'Temporal-Mid-L'	61.31	1
'Frontal-Mid-L'↔'Temporal-Inf-R'	69.15	1
'Cingulum-Mid-R'↔'Precentral-L'	82.80	1
'Parietal-Sup-L'↔'Precentral-R'	95.53	1
'Cingulum-Mid-L'↔'Frontal-Inf-Orb-L'	99.14	1
'Temporal-Inf-L'↔'Frontal-Sup-L'	103.91	1
'Frontal-Sup-R'↔'Paracentral-Lobule-R'	104.21	1
'Vermis-9'↔'Frontal-Mid-R'	113.107	1
'Temporal-Mid-L'↔'Frontal-Sup-R'	114.72	1
'Postcentral-R'↔'Insula-R'	115.54	1
'Insula-L'↔'Parietal-Sup-L'	116.95	1
'Frontal-Mid-Orb-L'↔'Cingulum-Mid-L'	119.99	1
'Frontal-Sup-Medial-L'↔'Frontal-Inf-Orb-R'	124.34	1
'Temporal-Sup-L'↔'Postcentral-R'	135.55	1
'Frontal-Med-Orb-R'↔'Angular-R'	138.92	1
'Supp-Motor-Area-L'↔'Frontal-Mid-R'	139.20	1
'Temporal-Pole-Sup-R'↔'Temporal-Mid-L'	146.31	1
'Temporal-Pole-Sup-R'↔'Frontal-Sup-Orb-L'	146.78	1
'SupraMarginal-L'↔'Frontal-Mid-Orb-L'	147.33	1
'Rolandic-Oper-L'↔'Cingulum-Ant-L'	148.47	1
'Rolandic-Oper-L'↔'Frontal-Mid-L'	148.89	1
'Cerebelum-3-R'↔'Thalamus-R'	160.62	1
'Postcentral-L'↔'Postcentral-R'	163.55	1
'Precentral-L'↔'Cingulum-Ant-R'	166.112	1
'RectalGyrus'↔'Insula-L'	168.116	1
'Parietal-Inf-L'↔'Frontal-Mid-L'	169.108	1
'Occipital-Sup-L'↔'Occipital-Mid-R'	171.59	1
'Frontal-Inf-Orb-R'↔'Vermis-6'	172.136	1
'Fusiform-R'↔'Caudate-R'	175.27	1
'Parietal-Inf-L'↔'Paracentral-Lobule-R'	183.21	1
'Temporal-Pole-Sup-R'↔'Thalamus-R'	185.62	1
'Temporal-Mid-L'↔'Temporal-Inf-L'	187.60	1