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

SVM Radial Analysis using SWAG

FREQUENCY TABLE

Feature	Variable	Frequency
'Frontal-Sup-L'↔'ParahippocampaGyrus'	13.11	146
'Temporal-Inf-L'↔'Frontal-Sup-Medial-L'	71.10	146
'Frontal-Mid-L'↔'Cingulum-Ant-L'	108.47	146
'Temporal-Mid-L'↔'Frontal-Inf-Orb-L'	114.14	146
'Rolandic-Oper-L'↔'Insula-L'	148.61	146
'Parietal-Inf-L'↔'Fusiform-R'	157.81	146
'Cingulum-Ant-R'↔'Supp-Motor-Area-L'	189.151	146
'Cingulum-Ant-L'↔'Precuneus-R'	47.9	142
'Frontal-Sup-L'↔'Lingual-L'	91.85	142
'Frontal-Mid-L'↔'Frontal-Inf-Tri-L'	108.23	142
'Fusiform-R'↔'Parietal-Sup-L'	175.95	137
'Fusiform-R'↔'Frontal-Mid-L'	154.69	136
'Frontal-Mid-R'↔'Frontal-Sup-Orb-R'	107.2	135
'Temporal-Inf-L'↔'Lingual-R'	132.4	133
'Pallidum-R'↔'Temporal-Mid-R'	40.19	132
'Midbrain'↔'Frontal-Sup-L'	165.13	132
'Cerebelum-Crus2-R'↔'Temporal-Pole-Sup-R'	186.146	67
'Fusiform-R'↔'Frontal-Sup-L'	175.13	53
'Frontal-Sup-L'↔'Putamen-L'	13.6	49
'Frontal-Sup-L'↔'Frontal-Inf-Tri-L'	91.23	44
'Precentral-R'↔'Precentral-R'	93.53	40
'Vermis-9'↔'Temporal-Pole-Mid-R'	113.44	31
'Frontal-Mid-L'↔'Insula-R'	89.5	27
'Temporal-Pole-Sup-R'↔'Frontal-Med-Orb-R'	146.138	27
'Cingulum-Ant-R'↔'Vermis-4-5'	189.126	26
'Frontal-Sup-R'↔'Cingulum-Ant-L'	173.47	25
'Frontal-Mid-L'↔'Cingulum-Ant-L'	79.47	22
'Cingulum-Ant-R'↔'Paracentral-Lobule-R'	189.21	22
'Insula-L'↔'Cingulum-Ant-L'	116.47	19
'Frontal-Sup-R'↔'ParahippocampaGyrus'	72.11	14
'Lingual-L'↔'Frontal-Sup-L'	85.13	14
'Frontal-Inf-Oper-L'↔'Frontal-Sup-L'	170.91	14
'Cingulum-Ant-R'↔'Precuneus-R'	189.9	10
'Cingulum-Ant-R'↔'Caudate-Head-L'	189.49	10
'Insula-L'↔'Cingulum-Mid-L'	116.65	9
'Insula-L'↔'Frontal-Mid-L'	116.89	9
'Cingulum-Ant-L'↔'Paracentral-Lobule-R'	47.21	8
'Frontal-Inf-Orb-R'↔'Caudate-R'	34.27	6
'Vermis-4-5'↔'Frontal-Sup-Orb-R'	126.2	6
'Frontal-Sup-L'↔'Cerebelum-6-L'	91.7	5
'Frontal-Sup-Medial-L'↔'Cingulum-Mid-L'	124.99	5
'Rolandic-Oper-L'↔'Temporal-Mid-L'	148.31	5
'Temporal-Inf-L'↔'Putamen-L'	71.6	4
'Frontal-Sup-Medial-R'↔'Cingulum-Mid-L'	134.99	4
'Precentral-L'↔'Cingulum-Ant-R'	166.112	4
'Temporal-Mid-L'↔'Rolandic-Oper-L'	179.167	3
'Fusiform-L'↔'Fusiform-R'	143.123	1