Supplementary Table S4. Fold-wise SHAP stability metrics across repeated nested cross-validation.

Classifier	Feature	Mean_Abs_SHAP	SD_Abs_SHAP	N_Outer_Evaluations	Mean_Rank	SD_Rank	Top1_Frequency	Top3_Frequency	SE_Abs_SHAP	t_crit	CI95_Lower	CI95_Upper	Top1_Frequency_Percent	Top3_Frequency_Percent
LightGBM	LH_DorsAttn_Post_9	1.574942	0.520282	100	1.32	0.649475	0.77	0.99	0.052028	1.984217	1.471707	1.678177	77	99
LightGBM	RH_SomMot_9	1.160508	0.348348	100	2.57	0.934793	0.15	0.84	0.034835	1.984217	1.091389	1.229628	15	84
LightGBM	LH_SalVentAttn_FrOperIns_2	1.14691	0.42008	100	2.74	0.938729	0.07	0.73	0.042008	1.984217	1.063557	1.230263	7	73
LightGBM	RH_Default_Temp_1	0.964015	0.30987	100	3.37	0.799684	0.01	0.44	0.030987	1.984217	0.90253	1.0255	1	44
LogisticRegression	LH_DorsAttn_Post_9	0.14291	0.069648	100	1.74	0.824131	0.46	0.96	0.006965	1.984217	0.129091	0.15673	46	96
LogisticRegression	LH_SalVentAttn_FrOperIns_2	0.140593	0.069126	100	1.93	0.843933	0.36	0.97	0.006913	1.984217	0.126877	0.154309	36	97
LogisticRegression	RH_SomMot_9	0.101881	0.05471	100	2.71	0.879566	0.13	0.85	0.005471	1.984217	0.091025	0.112736	13	85
LogisticRegression	RH_Default_Temp_1	0.057617	0.031294	100	3.62	0.81377	0.05	0.22	0.003129	1.984217	0.051408	0.063827	5	22
RandomForest	RH_SomMot_9	0.13563	0.032362	100	1.89	0.99387	0.47	0.92	0.003236	1.984217	0.129208	0.142051	47	92
RandomForest	LH_DorsAttn_Post_9	0.115689	0.027778	100	2.35	0.946818	0.21	0.88	0.002778	1.984217	0.110178	0.121201	21	88
RandomForest	RH_Default_Temp_1	0.106069	0.026569	100	2.7	1.087115	0.18	0.7	0.002657	1.984217	0.100797	0.111341	18	70
RandomForest	LH_SalVentAttn_FrOperIns_2	0.098213	0.029338	100	3.06	1.108461	0.14	0.5	0.002934	1.984217	0.092391	0.104034	14	50
SVM	LH_DorsAttn_Post_9	0.121147	0.051089	100	2.17	1.110601	0.36	0.82	0.005109	1.984217	0.11101	0.131285	36	82
SVM	LH_SalVentAttn_FrOperIns_2	0.111548	0.037843	100	2.22	0.916515	0.23	0.9	0.003784	1.984217	0.104039	0.119057	23	90
SVM	RH_Default_Temp_1	0.092887	0.039253	100	2.73	1.293769	0.3	0.57	0.003925	1.984217	0.085098	0.100676	30	57
SVM	RH_SomMot_9	0.089744	0.03327	100	2.88	0.956424	0.11	0.71	0.003327	1.984217	0.083143	0.096346	11	71
XGBoost	LH_DorsAttn_Post_9	1.221064	0.528563	100	1.87	0.928287	0.45	0.95	0.052856	1.984217	1.116186	1.325942	45	95
XGBoost	LH_SalVentAttn_FrOperIns_2	1.061717	0.508077	100	2.56	1.157496	0.25	0.71	0.050808	1.984217	0.960904	1.162531	25	71
XGBoost	RH_SomMot_9	0.989535	0.389015	100	2.72	1.03553	0.15	0.72	0.038902	1.984217	0.912346	1.066724	15	72
XGBoost	RH_Default_Temp_1	0.954435	0.407112	100	2.85	1.095215	0.15	0.62	0.040711	1.984217	0.873655	1.035215	15	62

For each classifier and feature, mean absolute SHAP values were summarized across 100 outer evaluations. The table reports standard deviation, fold-level 95% confidence interval, mean rank, top-1 frequency, and top-3 frequency. These metrics are descriptive measures of attribution stability and should not be interpreted as confirmatory biomarker evidence.

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