

Table S1. The features used for training

Features	Case Mean Value	Control Mean Value	P value (U Test)	Selected By Lasso
Offset_Lshoulder_y_Mneck_2	0.009	-0.007	<0.001	Y
Lshoulder_y_Mneck_2	0.006	-0.017	<0.001	Y
OFFSET_Lshoulder_y_AVG_2	-0.044	-0.075	<0.001	Y
RAW_neck_x_AVG_3	0.493	0.527	<0.001	Y
RAW_nose_x_AVG_3	0.475	0.516	<0.001	Y
Offset_Rshoulder_y_Mneck_1	-0.009	0.002	0.001	Y
RAW_Rshoulder_x_AVG_1	0.286	0.326	0.001	Y
Rshoulder_y_SD_0	0.019	0.014	0.003	Y
Yaw_Mild_Left_2	0.066	0.101	>0.05	Y
Lshoulder_y_Mneck_0	0.003	-0.013	<0.001	
RAW_Reye_x_AVG_3	0.437	0.478	<0.001	
RAW_nose_x_AVG_0	0.482	0.518	<0.001	
Lshoulder_y_SD_1	0.014	0.008	<0.001	
RAW_Leye_x_AVG_3	0.525	0.561	<0.001	
RAW_Rshoulder_x_AVG_0	0.285	0.326	0.001	
Offset_Shoulder_Diff_2	0.025	0.048	0.001	
RAW_Reye_x_AVG_0	0.439	0.475	0.001	
RAW_Reye_x_AVG_2	0.436	0.471	0.001	
nose_y_SD_1	0.022	0.014	0.001	
Leye_y_SD_1	0.021	0.013	0.001	
RAW_Leye_x_AVG_0	0.532	0.563	0.001	
height	160.912	168.238	0.001	
RAW_nose_x_AVG_2	0.476	0.513	0.001	
Reye_y_SD_1	0.021	0.013	0.001	
Rshoulder_y_SD_3	0.015	0.01	0.001	
RAW_Reye_x_AVG_1	0.446	0.479	0.001	
RAW_neck_x_AVG_0	0.499	0.528	0.002	
Leye_y_SD_0	0.025	0.017	0.002	
RAW_Leye_x_AVG_2	0.53	0.562	0.002	
RAW_Rshoulder_x_AVG_3	0.288	0.333	0.002	
nose_y_SD_3	0.022	0.013	0.002	
Lshoulder_y_Mneck_3	0.001	-0.011	0.002	
RAW_Rshoulder_x_AVG_2	0.284	0.323	0.002	
Offset_ABS_Shoulder_Diff_2	0.029	0.048	0.002	
OFFSET_Lshoulder_y_AVG_0	-0.049	-0.074	0.002	
OFFSET_Lshoulder_y_AVG_3	-0.049	-0.069	0.002	
Leye_y_SD_3	0.019	0.011	0.002	
Shoulder_Normal_1	0.568	0.269	0.002	
RAW_neck_x_AVG_2	0.5	0.529	0.002	
Offset_Lshoulder_y_Mneck_0	0.007	-0.003	0.002	
Shoulder_Imbalance_Left_2	0.097	0.41	0.003	
RAW_Lshoulder_x_AVG_3	0.68	0.713	0.003	
Offset_Shoulder_Diff_0	0.029	0.047	0.003	
Yaw_Moderate_Left_1	0.017	0.052	0.003	
Shoulder_Normal_0	0.689	0.412	0.003	
nose_y_SD_0	0.027	0.019	0.003	

Reye_y_SD_0	0.025	0.017	0.003
Offset_ABS_Shoulder_Diff_0	0.032	0.048	0.004
Reye_y_SD_3	0.019	0.012	0.004
RAW_yaw_AVG_1	5.665	1.955	0.004
OFFSET_Lshoulder_y_AVG_1	-0.054	-0.078	0.004
Shoulder_Diff_0	-0.011	0.004	0.004
neck_y_SD_3	0.012	0.008	0.004
RAW_nose_x_AVG_1	0.49	0.522	0.004
Shoulder_Diff_2	-0.015	0.005	0.004
Lshoulder_y_SD_0	0.019	0.014	0.005
Offset_ABS_Shoulder_Diff_1	0.029	0.044	0.005
Leye_y_SD_2	0.02	0.013	0.005
RAW_neck_x_AVG_1	0.506	0.53	0.005
Offset_Shoulder_Diff_1	0.026	0.042	0.006
RAW_Lshoulder_x_AVG_2	0.697	0.723	0.007
Yaw_Severe_Right_1	0.008	0.001	0.007
Lshoulder_y_Mneck_1	0.002	-0.01	0.007
RAW_yaw_AVG_0	6.367	2.98	0.008
RAW_Lshoulder_x_AVG_0	0.694	0.719	0.008
OFFSET_neck_y_AVG_1	-0.038	-0.054	0.008
neck_y_SD_1	0.011	0.007	0.008
nose_y_SD_2	0.022	0.015	0.009

Abbreviation of components of features: RAW: raw feature generated from TF Pose or FSA net; Offset: offset features generated by raw feature subtracting the subject's baseline value; _Mneck: normalized features generated by reset the original point (0,0) with the subject's neck position; _[0/1/2/3]: features generated from whole/typing/gaming/video-watching tasks, respectively; [R/L][shoulder/eye]: Right/Left Shoulder/Eye; [eye/nose/neck/shoulder]_[x/y]: the average value of x/y-coordinate of images from eye/nose/neck/shoulder; Shoulder_[Normal/Imbalance]: status feature of shoulders; Shoulder_Diff: the difference between the height (y-coordinate) of two shoulders; [Yaw/Pitch/Roll]_AVG: the average value of angles of images from yaw, pitch, and roll; [Yaw/Pitch/Roll]_[Normal/Mild/Moderate/Severe]_[Right/Left]: head pose features generated from the proportions of angle values located in 7 intervals based on the subject's overall distribution in a task segmented by one, two and three standard deviations and annotated with head direction (right/left); ABS: the absolute value of the feature; SD: the standard deviation of the features.