This dataset contains data from a Kinect v2 sensor and a wearable inertial sensor that is being made available for public use. It includes the 10 actions listed in Table 1.

Table 1. 10 actions in the datset.

1. Right hand high wave	6. Right hand draw circle
2. Right hand catch	7. Right hand horizontal wave
3. Right hand high throw	8. Right hand forward punch
4. Right hand draw X	9. Right hand hammer
5. Right hand draw tick	10. Hand clap (two hands)

Six subjects (3 female and 3 male subjects) were asked to perform these 10 actions. Each subject repeated an action 5 times (called trials). The naming convention of a file is "ai_sj_tk_modality", where ai stands for action number i, sj stands for subject number j, tk stands for trial k, and modality corresponds to the three data modalities of depth, skeleton, and inertial.

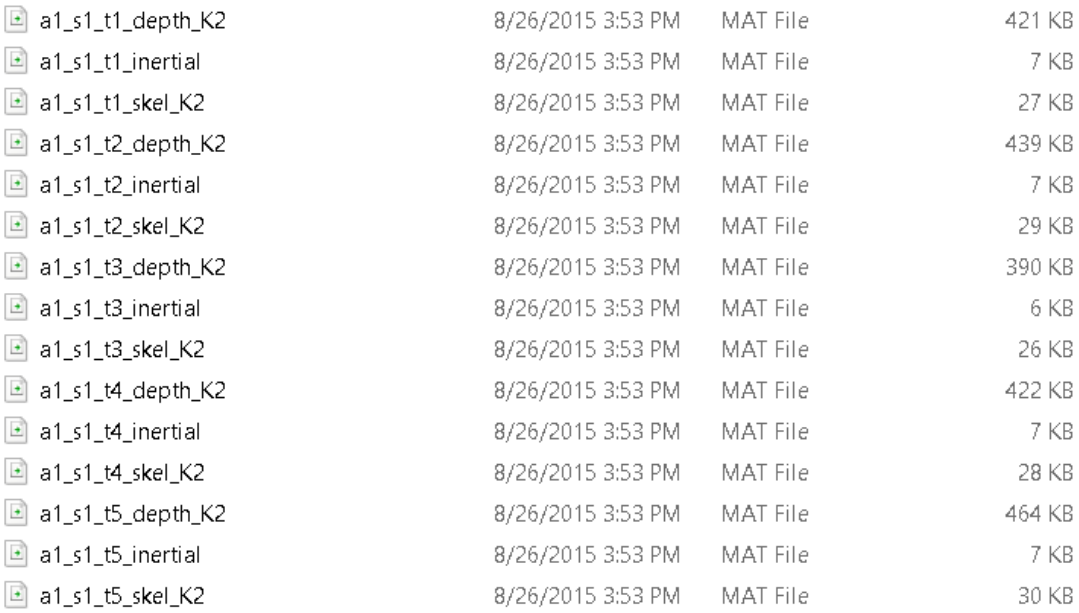
For the depth data, the size of a depth sequence is 424 x 512 x number_of_frame.

For the skeleton data, the 25 joints positions in the world coordinate (i.e., x, y, and z) were recorded and the screen coordinates were mapped to the depth images (i.e., x and y). “skel.world” and “skel.screen” corresponding to these two types of joint positions. The size of “skel.world” is 25 x 3 x number_of_frame, and the size of “skel.screen” is 25 x 2 x num_of_frame. Each row corresponds to the positions of a particular skeleton joint. The order of the joints is as follows.

Row	Joint
1	Base of the spine
2	Middle of the spine
3	Neck
4	Head
5	Left shoulder
6	Left elbow
7	Left wrist
8	Left hand
9	Right shoulder
10	Right elbow
11	Right wrist
12	Right hand
13	Left hip
14	Left knee
15	Left ankle
16	Left foot
17	Right hip
18	Right knee
19	Right ankle
20	Right foot
21	Spine at the shoulder
22	Tip of the left hand
23	Left thumb
24	Tip of the right hand
25	Right thumb

The size of the inertial sensor data is number_of_sample x 6. The six columns (from the first column to the last column) indicate X-axis acceleration, Y-axis acceleration, Z-axis acceleration, X-axis angular velocity, Y-axis angular velocity, and Z-axis angular velocity.

A snapshot of the data files is provided below.



a1_s1_t1_depth_K2	8/26/2015 3:53 PM	MAT File	421 KB
a1_s1_t1_inertial	8/26/2015 3:53 PM	MAT File	7 KB
a1_s1_t1_skel_K2	8/26/2015 3:53 PM	MAT File	27 KB
a1_s1_t2_depth_K2	8/26/2015 3:53 PM	MAT File	439 KB
a1_s1_t2_inertial	8/26/2015 3:53 PM	MAT File	7 KB
a1_s1_t2_skel_K2	8/26/2015 3:53 PM	MAT File	29 KB
a1_s1_t3_depth_K2	8/26/2015 3:53 PM	MAT File	390 KB
a1_s1_t3_inertial	8/26/2015 3:53 PM	MAT File	6 KB
a1_s1_t3_skel_K2	8/26/2015 3:53 PM	MAT File	26 KB
a1_s1_t4_depth_K2	8/26/2015 3:53 PM	MAT File	422 KB
a1_s1_t4_inertial	8/26/2015 3:53 PM	MAT File	7 KB
a1_s1_t4_skel_K2	8/26/2015 3:53 PM	MAT File	28 KB
a1_s1_t5_depth_K2	8/26/2015 3:53 PM	MAT File	464 KB
a1_s1_t5_inertial	8/26/2015 3:53 PM	MAT File	7 KB
a1_s1_t5_skel_K2	8/26/2015 3:53 PM	MAT File	30 KB