

Action recognition experiments:

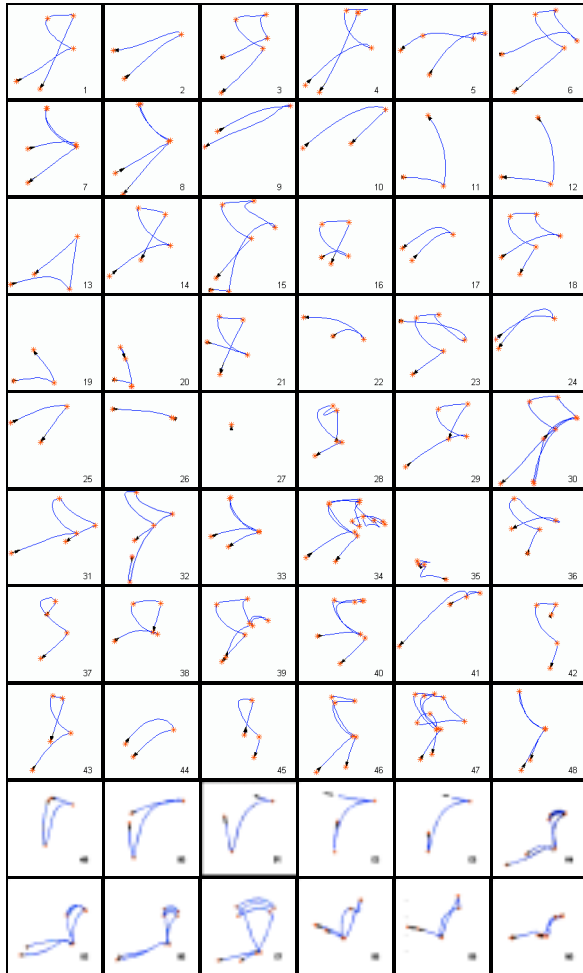


Figure 6. Trajectories of all 60 actions. The instants are shown with red “*”).



Figure 5. Action 3: put down the object in cabinet, then close the door.

Table 2. Interpretation results. The bold face font in column indicates incorrect match.

Actions	3 Best matches	Evaluation & comments
1	38 29 14	Correct
2	Pick up	Correct
3	18 6 23	Correct
4	36 29 14	One wrong
5		Unique action
6	23 3 18	Correct
7	33 8 48	correct
8	33 7 60	One wrong
9	Pick up	Correct
10	Put down	Correct
11	Pick up	Correct
12	Put down	Correct
13		Unique action
14	16 1 29	Correct
15		Unique action
16	38 14 29	Correct
17	Pick up	Incorrect, object hidden
18	3 23 6	Correct
19	Pick up	Correct
20		Unique random motion
21	14 38 16	Correct
22	Pick up	Correct
23	18 6 3	Correct
24	Pick up	Correct
25	Put down	Correct
26		Unique action
27		Unique action
28		correct
29	1 16 14	Correct
30		Correct
31	43 16 38	incorrect
32		Unique action
33	8 7 48	correct
34		Random motion, unique
35	Put down	The action is confusing
36	38 14 43	incorrect
37		Unique
38	1 16 29	Correct
39		Correct
40		46 is missing
41	35	Unique action
42		Unique action
43	31 14 36	Two incorrect
44	Pick up	Incorrect, object too small
45		Unique action
46		40 is missing
47		Unique action
48	59 33 7	One incorrect, collinear points.
49	51 53 50	Correct
50	51 53 50	Correct
51	50 53 49	Correct
52		Unique action
53	51 49 50	Correct
54	56 57	Correct
55	Incorrect	One instant missing
56	54 57	Correct
57	56 54	Correct
58	48 33	Collinear points
59	48 60	Collinear points
60	59 8 48	Collinear points

Table 1: List of actions.

- 1st open the cabinet
- 2nd pick up an object (umbrala) from the cabinet.
- 3rd put down the object in cabinet, then close the door.
- 4th open the cabinet, with touching the door an extra time.
- 5th pick up an object (disks) with twisting hand around.
- 6th put back the object (disks) and then close the door.
- 7th open the cabinet door, wait, then close the door.
- 8th open the cabinet door, wait, then close the door.
- 9th pick up an object from top the of the cabinet.
- 10th put the object back to the top of cabinet.
- 11th pick up an object from the desk.
- 12th put the object back to the desk.
- 13th pick up an object, then make random motions.
- 14th open the cabinet.
- 15th pick up an object, put it in the cabinet, then close the door.
- 16th open the cabinet.
- 17th pick up an object (umbralla) from the cabinet.
- 18th put the object (umbralla) back to the cabinet.
- 19th pick up a bag from the desk.
- 20th make random motions.
- 21st open the cabinet.
- 22nd pick up an object (a bag of disks).
- 23rd put donw an object (a bag of disks) back to the cabinet, then close the door.
- 24th pick up an object from the top of the cabinet.
- 25th put the object back to the cabinet top.
- 26th make random motions with two hands.
- 27th continue the action 26.
- 28th close the door, with some random motion.
- 29th open the cabinet.
- 30th pick up an object (remote controller) from the cabinet, put it down on the desk, pick up another object (pencil) from the desk, put it in the cabinet, then close the door.
- 31st open the cabinet door, with the door half pushed, pick up an object (pencil) from the cabinet.
- 32nd pick up an object (remote controller) from the desk, put it in the cabinet, then close the door.
- 33rd open the cabinet door, wait, then close the door.
- 34th open the cabinet door, make random motions, then close the door.
- 35th pick up some objects.
- 36th open the door, pick up an object, with the door half opened.
- 37th close the half opened door.
- 38th open the cabinet door.
- 39th pick up an object, move it within the cabinet, pick up another object, move it, then close the door.
- 40th open the cabinet door, wait, then close the door.
- 41st pick up an object from the top of the cabinet.
- 42nd close the cabinet.
- 43rd open the cabinet.
- 44th put down a disk.
- 45th close the half closed door.
- 46th open the door, wait, then close the door.
- 47th open the cabinet door, pick up an object, then put it back, then close the cabinet door.
- 48th open, then close the cabinet door.
- 49th pick up an object from the floor and put it on the desk.
- 50rd pick up an object from the floor and put it on the desk.
- 51rd pick up an object from the floor and put it on the desk.
- 52nd pick up an object from the desk and put it on the floor.
- 53rd pick up an object from the floor and put it on the desk.
- 54th , 55th , 56th , 57th erase the white board.

55th erase the white board.

56th erase the white board.

57th erase the white board.

58th pour water into a cup.

59th pour water into a cup.

60th pouring water into a cup.