

Supplementary Data

1. Potential activities in the second layer of 2LDPMM

Subject 1	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
WatchTV	0	0	0	7	0	0	0	21	41	0	0	0	0	0	0	0
ReadNewspaper	2	0	0	3	0	0	0	0	66	0	3	0	0	0	0	0
Exercise	3	115	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Meal	0	0	101	76	26	12	9	1	0	0	0	0	0	0	0	0
PlayPad	0	0	0	40	0	0	0	87	4	0	3	0	0	0	3	0
ReadBook	2	0	0	8	0	0	0	0	100	0	4	0	0	0	0	0
Sweep	0	0	0	0	0	0	0	0	0	56	10	0	0	0	0	0
Sleep	0	0	0	0	0	0	0	0	0	0	0	286	13	0	0	0
WashDishes	0	0	0	0	0	0	4	0	0	0	0	0	0	164	4	0
GoOut	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	56
Other	1	0	0	2	0	0	2	1	0	0	5	0	3	0	1	0

Subject 2	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
WatchTV	140	136	0	0	0	3	3	0	0	0	0	0	0	0
ReadNewspaper	0	1	24	0	0	0	30	0	0	0	0	0	0	0
Exercise	0	0	0	49	64	7	0	0	0	0	0	0	0	0
Meal	0	0	0	0	0	0	42	0	0	0	0	0	0	0
PlayPad	0	0	0	0	0	0	0	339	15	0	0	25	0	0
ReadBook	0	0	10	0	0	0	22	0	0	0	0	0	0	0
Sweep	0	0	0	0	0	0	0	0	0	155	27	0	0	0
Sleep	0	0	0	0	0	0	0	0	0	0	0	58	346	0
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	0	40
Other	0	0	0	0	0	2	3	0	2	0	1	1	0	2

Subject 3	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
WatchTV	92	27	20	3	0	0	0	0	0	0	0	0	0	0	0	0
ReadNewspaper	40	0	0	20	10	0	0	10	10	11	0	0	0	0	0	0
Exercise	0	0	0	1	0	116	0	0	0	0	0	0	0	0	0	0
Meal	0	0	0	13	8	0	109	63	0	0	0	0	0	0	0	0
PlayPad	3	0	0	0	0	0	48	54	0	0	0	0	0	0	0	0
ReadBook	46	0	0	13	8	0	10	24	18	0	0	0	0	0	0	0
Sweep	0	0	0	0	2	0	0	0	0	0	131	17	0	3	0	0
Sleep	0	0	0	0	0	0	0	0	0	0	0	0	121	8	0	0
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	0
GoOut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Other	0	0	0	3	2	0	0	2	1	0	0	0	0	3	0	3

Subject 4	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13
WatchTV	21	0	0	0	0	23	0	0	30	0	0	0	0
ReadNewspaper	28	0	0	2	32	10	0	0	0	2	0	0	0
Exercise	0	44	16	11	0	0	0	0	0	0	0	0	0
Meal	37	0	0	0	54	1	0	0	0	0	0	0	0
PlayPad	0	0	0	0	168	42	0	0	0	0	0	0	0
ReadBook	109	0	0	4	116	20	0	0	0	1	0	0	0
Sweep	0	0	0	0	0	77	0	0	0	0	6	0	0
Sleep	0	0	0	0	0	16	85	57	61	10	0	0	0
PlayComputer	16	0	0	0	50	50	0	0	0	0	0	0	3
WashDishes	0	0	0	0	0	0	0	0	0	0	62	0	0
GoOut	1	0	0	0	0	0	0	0	0	0	46	3	0
Other	10	0	3	0	14	12	0	0	11	1	11	0	0

Subject 5	C1	C2	C3	C4	C5	C6	C7	C8
WatchTV	76	0	0	38	8	0	0	0
ReadNewspaper	8	0	0	60	6	0	0	0
Exercise	0	43	0	0	0	0	0	0
Meal	0	0	71	2	0	0	0	0
PlayPad	0	0	40	133	2	0	0	0
ReadBook	0	0	0	193	7	0	0	0
Sweep	0	0	0	0	171	0	0	0
Sleep	31	0	0	17	3	77	0	0
PlayComputer	0	0	0	111	0	0	0	0
WashDishes	0	0	0	0	1	0	54	0
GoOut	0	0	0	0	0	0	0	44
Other	0	2	2	8	24	0	2	0

Subject 6	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13
WatchTV	41	0	0	0	0	16	0	0	0	0	0	0	0
ReadNewspaper	0	0	24	0	0	28	9	0	0	10	0	0	0
Exercise	0	54	0	0	0	1	3	0	0	0	0	0	0
Meal	0	0	60	0	0	0	0	0	0	0	0	0	0
PlayPad	0	0	0	134	7	16	0	0	3	0	0	0	0
ReadBook	0	0	38	13	2	62	20	0	0	2	0	0	0
Sweep	0	0	2	0	0	0	0	200	4	0	1	0	0
Sleep	0	0	0	0	0	3	0	0	0	106	29	0	0
PlayComputer	0	0	0	42	0	25	0	0	0	49	1	0	0
WashDishes	0	0	0	0	0	0	0	1	0	0	0	51	0
GoOut	0	0	0	0	0	0	0	2	0	0	0	0	54
Other	2	0	2	0	0	7	3	5	0	4	3	0	0

2. Prediction of NHAC-Layer2

Subject 1	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
WatchTV	42	22	0	0	0	0	0	0	0	5	0	0	0	0
ReadNewspaper	0	0	74	0	0	0	0	0	0	0	0	0	0	0
Exercise	0	0	0	119	0	0	0	0	0	0	0	0	0	0
Meal	0	0	0	0	107	90	26	0	0	0	0	0	2	0
PlayPad	0	0	3	0	0	0	0	88	46	0	0	0	0	0
ReadBook	0	0	0	0	0	0	0	0	2	112	0	0	0	0
Sweep	0	0	0	0	0	0	0	0	0	0	64	0	0	2
Sleep	0	0	0	0	0	0	0	0	0	0	0	297	0	2
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	172	0
GoOut	0	0	0	0	0	0	0	0	0	0	0	0	0	59
Other	0	0	0	2	0	0	0	2	3	0	1	1	2	4

Subject 2	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
WatchTV	143	136	3	0	0	0	0	0	0	0	0	0	0	0
ReadNewspaper	0	0	53	0	0	0	0	0	0	0	0	0	0	2
Exercise	0	0	0	71	49	0	0	0	0	0	0	0	0	0
Meal	0	0	0	0	0	42	0	0	0	0	0	0	0	0
PlayPad	0	0	0	0	3	0	349	26	0	0	1	0	0	0
ReadBook	0	0	0	0	0	0	0	0	32	0	0	0	0	0
Sweep	0	0	0	0	0	0	0	0	0	155	27	0	0	0
Sleep	0	0	0	0	0	0	2	0	0	0	346	56	0	0
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	0	40
Other	1	0	2	1	2	1	0	1	0	0	1	0	2	0

Subject 3	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17
WatchTV	95	27	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ReadNewspaper	0	0	0	93	0	6	2	0	0	0	0	0	0	0	0	0	0
Exercise	0	0	0	0	117	0	0	0	0	0	0	0	0	0	0	0	0
Meal	0	0	0	0	3	117	73	0	0	0	0	0	0	0	0	0	0
PlayPad	1	0	0	0	0	0	0	56	48	0	0	0	0	0	0	0	0
ReadBook	0	0	0	0	0	0	0	14	0	37	35	30	0	0	0	3	0
Sweep	0	0	0	0	0	0	0	0	0	0	0	0	136	17	0	0	0
Sleep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	129	0	0
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	0
GoOut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Other	0	0	0	0	2	0	0	2	0	2	0	1	2	0	1	1	3

Subject 4	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21
WatchTV	30	22	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
ReadNewspaper	0	0	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exercise	0	0	0	0	63	0	0	0	0	1	0	2	0	0	0	0	0	5	0	0	0
Meal	0	0	0	0	0	56	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PlayPad	0	0	0	0	0	0	0	165	40	0	3	2	0	0	0	0	0	0	0	0	0
ReadBook	0	0	0	0	0	0	0	0	0	143	80	27	0	0	0	0	0	0	0	0	0
Sweep	0	0	0	0	0	0	0	0	0	0	0	78	0	0	0	0	0	5	0	0	0
Sleep	0	0	0	0	0	0	1	0	0	0	0	0	85	70	57	16	0	0	0	0	0
PlayComputer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	50	19	48	0	0	0
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	0
GoOut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
Other	0	3	1	0	0	0	1	0	1	6	4	3	0	6	0	0	10	3	12	10	2

Subject 5	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17
WatchTV	76	43	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ReadNewspaper	0	0	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0
Exercise	0	0	0	0	43	0	0	0	0	0	0	0	0	0	0	0	0
Meal	0	0	0	0	0	73	0	0	0	0	0	0	0	0	0	0	0
PlayPad	0	0	0	0	0	0	135	40	0	0	0	0	0	0	0	0	0
ReadBook	0	0	0	0	0	0	0	0	179	21	0	0	0	0	0	0	0
Sweep	0	0	0	0	0	0	0	0	0	153	18	0	0	0	0	0	0
Sleep	0	0	0	0	0	0	0	0	1	0	79	31	17	0	0	0	0
PlayComputer	0	0	0	0	0	0	0	0	0	0	0	0	4	107	0	0	0
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	0	0
GoOut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0
Other	0	0	1	0	2	0	1	2	2	8	12	0	0	0	5	4	1

Subject 6	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20
WatchTV	41	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ReadNewspaper	0	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exercise	0	0	0	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Meal	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PlayPad	0	0	2	0	0	142	16	0	0	0	0	0	0	0	0	0	0	0	0	0
ReadBook	0	0	0	0	0	3	0	42	41	29	21	0	0	1	0	0	0	0	0	0
Sweep	0	0	0	0	0	0	0	0	2	0	0	191	14	0	0	0	0	0	0	0
Sleep	0	0	0	0	0	0	0	0	0	0	0	0	0	109	29	0	0	0	0	0
PlayComputer	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	47	43	25	0	0
WashDishes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	0	0
GoOut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
Other	2	1	0	1	1	2	2	1	1	0	2	3	0	0	0	3	2	5	0	0