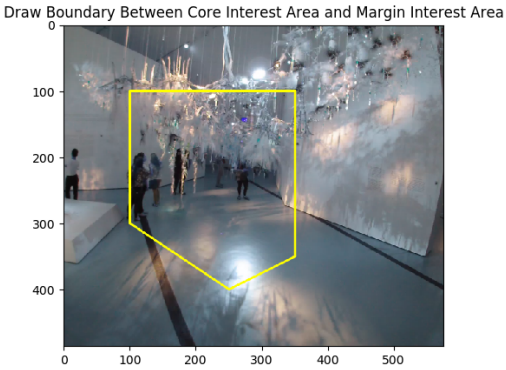
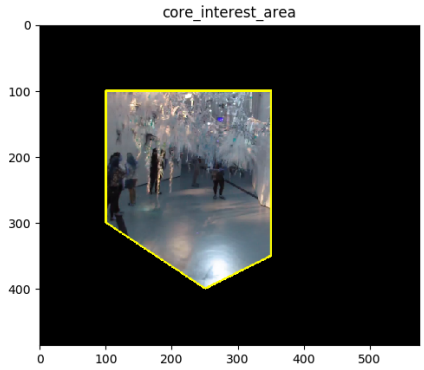
Interest Area Division

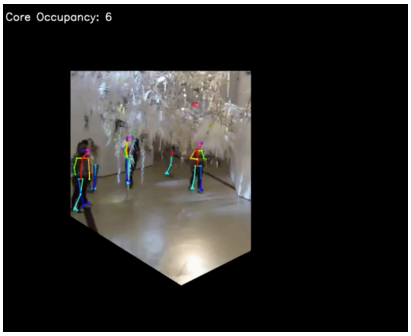
1. Whole Interest Area
2. Core Interest Area
3. Margin Interest Area

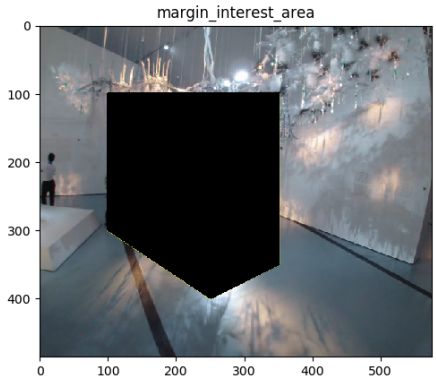


Whole Interest Area: A relatively wider area around Canopy.

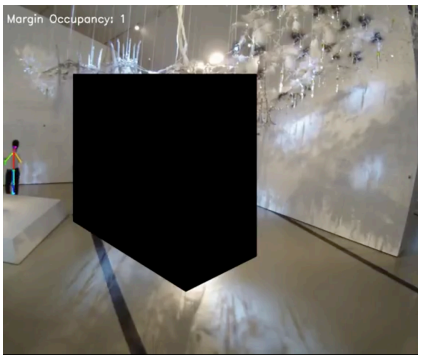


Core Interest Area: The small area which is just underneath the Canopy.





Margin Interest Area: The area within Whole Interest Area but outside the Core Interest Area.



Truth Value Table

Assumption:

- There is a time-delay for visitors to move from one area to another area, and this time must be greater than the time-gap between two frames i.e. the time-delay must be greater than 33millisecond.
- At the same time step: z = x+y
- Estimate of # of visitors in each area is independent from each other.

Change type of estimated # of visitors between two consecutive time steps:

- Hold: 0
- Increase: 1
- Decrease: 2

Truth value:

- 1 means possible
- 0 means impossible

# of visitors in core area: x	# of visitors in margin: y	# of visitors in whole interest area: z	Truth value	Explanation
0	**0**	**0**	**1**	**No people transform between space.**
0	0	1	0	Impossible
0	0	2	0	Impossible
0	1	0	0	Impossible
0	**1**	**1**	**1**	**New people come in**
0	1	2	0	Impossible
0	2	0	0	Impossible
0	2	1	0	Impossible
0	**2**	**2**	**1**	**People get out**
1	0	0	0	Impossible
1	**0**	**1**	**1**	**New people come in and the same number of people move from margin to core area.**
1	0	2	0	Impossible
1	1	0	0	Impossible
1	**1**	**1**	**1**	**People move from margin to core area and more new people come into the margin area.**
1	1	2	0	Impossible
1	**2**	**0**	**1**	**People move from margin into core interest area.**
1	**2**	**1**	**1**	**New people come in and more people move from margin into core interest area.**
1	**2**	**2**	**1**	**People move from margin into core interest area and more people get out of whole interest area.**
2	0	0	0	Impossible
2	0	1	0	Impossible
2	**0**	**2**	**1**	**People get out of core area into margin, and the same # of people get out of whole interest area.**
2	**1**	**0**	**1**	**People get out of core area into margin, and no people get out of whole interest area.**
2	**1**	**1**	**1**	**People get out of core area into margin, and new people come in.**

2	**1**	**2**	**1**	**People get out of core area into margin, and less than this # of people get out of whole interest area.**
2	2	0	0	Impossible
2	2	1	0	Impossible
2	**2**	**2**	**1**	**People get out of core area into margin, and more people get out of whole interest area.**

- 27 combinations
- only 13 of 27 combinations are possible
- only 4 of the 13 possible cases in where new visitors come in.
- only 6 of the 13 possible cases in where visitors leave from the whole interest area.
- Only 3 of the 13 possible cases in where the # of visitors remain unchanged.

If we have this Truth Table, and we can estimate the change of the # of visitors in each area of two consecutive time steps, we can infer which scenario is happening.