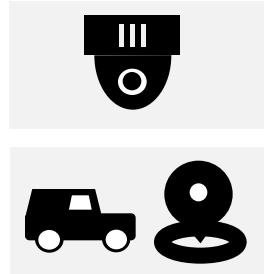


# State Detection and Position Reset based Particle Filter Tracking for Large-size and Long-term Full Occlusion

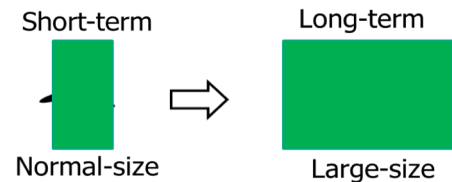
曹銳捷 池永研究室 修士課程修了

## Background

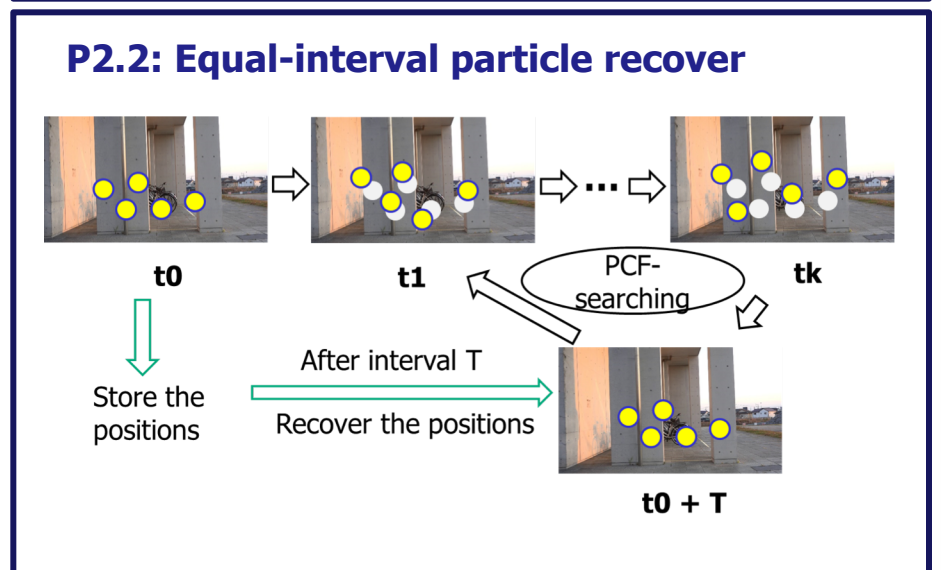
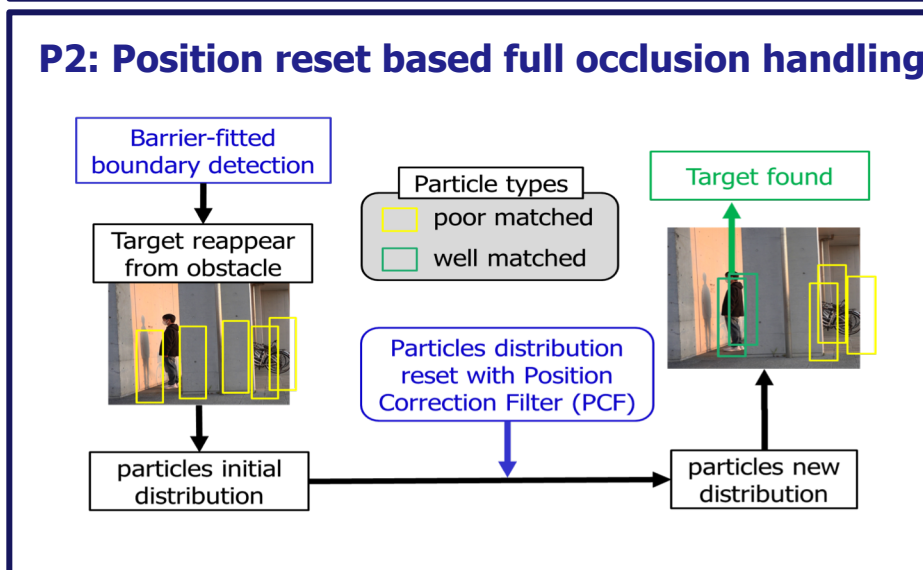
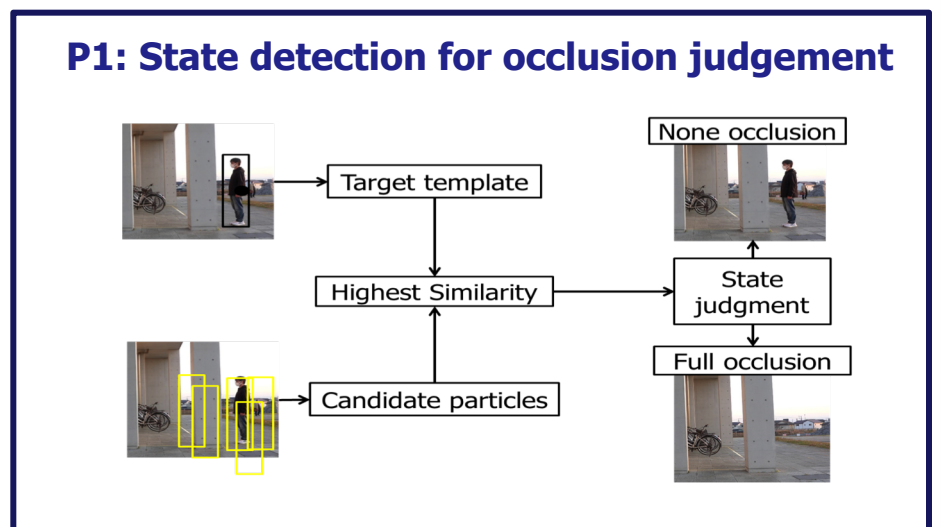
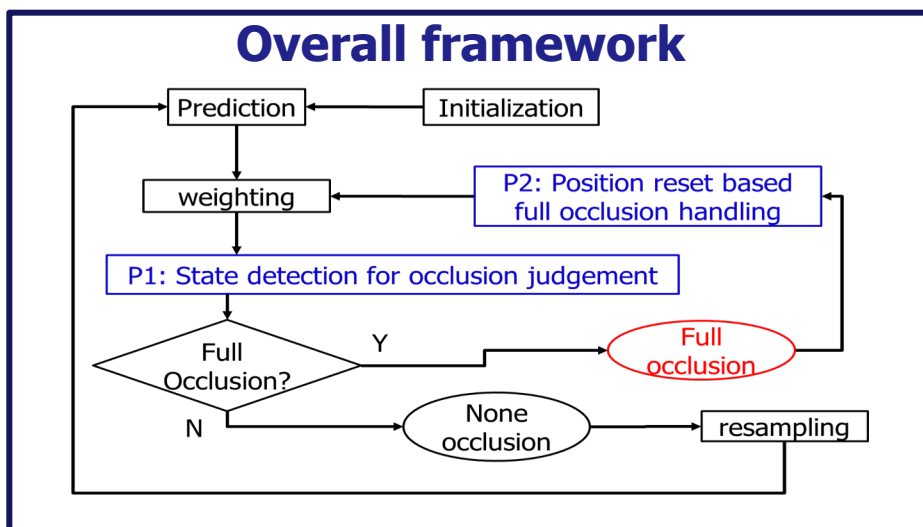
- Application
  - Video Surveillance
  - Vehicle navigation
  - ...



- Target
  - Tracking in full occlusion with large-size barrier and long-term occlusion scenes
- Challenges
  - Trajectory break off
  - Long-term disappearing
  - Motion change
  - ...



## Proposed method



## Experiments Result

Item	Times	CW 2021		Sun's work		Proposed	
SS,ST	42	29/42	69.04%	40/42	95.23%	40/42	95.23%
SS,LT	43	17/43	58.13%	40/43	93.02%	41/43	95.34%
LS,ST	46	8/46	17.39%	22/46	47.82%	43/46	93.47%
LS,LT	49	5/49	12.24%	22/49	44.90%	42/49	85.71%
<b>Total</b>	180	69/180	38.33%	124/180	68.89%	166/180	<b>92.22%</b>

## Conclusion

- Definitions and datasets are prepared as follows

Item	Occlusion times(counts)		
Large size(LS) 350 - 600pixels	95	Long term(LT) > 3s	92
Small size(SS) <280pixels	85	Short term(ST) < 3s	88

- With our proposed method, success rate reaches more than 92%

