# Tech Review

## Key Information

### Title

Optimal Camera Pose and Placement Configuration for Maximum Field-of-View Video Stitching

### Citation

(Watras, et al., 2018)

## Summary

In contrast to other sources investigating Optimal Camera Placement Problem, this article researches the most optimised way of placing camera to view an artwork, a mosaic to be more specific.

The algorithms used are different to ones normally implemented as the focus on the largest area compared to edge length. As such the solution was more symmetrical and regular than typical camera placements created using sampling or greedy algorithms.

Algorithms evaluated:

* Naïve – maximum coverage area given a single anchor point and no tilt change.
* Symetric – maximum coverage area given a single anchor point whilst retaining tilt and rotation symmetry.
* Greedy – maximum coverage area given a single anchor point.

## Critical Evaluation

The paper uses a novel approach to the problem, attempting to create the largest continuous area. Whilst the presented use case for this source is to get the best image of an artwork whilst using the smallest number of cameras, this approach could be used in more common problems, such as city surveillance.

Blind spots are not as important in tracking an individual across cameras if there is a high confidence in the algorithm which determines next viable camera. Having continuous camera clusters, with gaps between them turns the tracking algorithm into graph algorithm, decreasing computational complexity.

The main drawback of this study is that the camera placement only allows a single point to anchor cameras which is highly unrealistic in all situations other than observing static object.

## Conclusion

In conclusion, this paper should be investigated and considered when designing city-scale surveillance systems as its native tendency to create symmetry would simplify a lot of tracking problems.

The source only conducts 3 tests in total therefore more testing is required to draw any definite conclusions.

# Bibliography

Watras, A. et al., 2018. Optimal Camera Pose and Placement Configuration for Maximum Field-of-View Video Stitching. *Sensors,* 18(2284).