# Tech Review

## Key Information

### Title

Approximate Techniques in Solving Optimal Camera Placement Problems

### Citation

(Jian Zhao, 2013)

## Summary

This paper focuses on gathering all algorithms which can be used to solve optimal camera placement problem and comparing them in a variety of situations. It also develops a framework for evaluating a performance of individual algorithms to determine ones which are a good choice for most situation.

Algorithms covered are:

* Greedy Search
* Greedy Heuristic Search
* Random Sampler
* Metropolis Sampling
* Gibbs Sampling
* Simulated Annealing

## Critical Evaluation

A main benefit of this paper is research and categorisation of a variety of algorithms which can be used in solving the optimal camera placement problem. As such, this paper would be a useful source of information when considering which algorithms should be implemented as part of the testing stage.

The evaluation results, whilst useful, do not cover several cases, with tests being ran only for 2, 4, 6 and 8 cameras. Due to that, these results should not be used without running tests to confirm them as the result might be flawed due to the small variance in constraints.

The paper also fails to analyse more complex environments, giving only one case where cameras are not attached to the side of a polygon but rather are attached to an object inside the polygon.

This brings me to a final criticism: The paper assumes usage of rectangular polygons for rooms that would work for simpler structures such as houses but will not be possible to implement for more complex shapes such as ones commonly encountered in an art gallery.

## Conclusion

In conclusion, whilst the paper is helpful in determining and designing camera placement problem algorithms, its claim to be applicable to a wide array of situations can be considered as false due to lack of variance and wrong assumptions. Achieved results, despite being oriented toward real life problems, might not hold when investigated in more varied environment, consisting of more realistic constraints.

# Bibliography

Jian Zhao, R. Y. S.-c. S. C. a. D. H., 2013. Approximate Techniques in Solving Optimal Camera. *International Journal of Distributed Sensor Networks,* Volume 2013, pp. 1-15.