# Tech Review

## Key Information

### Title

The Camera Placement Problem - An art gallery problem variation

### Citation

(Stahl, 2008)

## Summary

This source is more of a prototype rather than actual research paper. It investigates other similar problems such as Floodlight problem or the Art Gallery problem. The source tries three algorithms in total:

* 3-Colours algorithm – Colouring vertices of a shape using only 3 colours without adjacency.
* Rectangular Algorithm (Simple) – Divides entire shape into rectangles then attempts to get the most optimal camera placement within that rectangle.
* Rectangular Algorithm (Greedy) – Same as before, but in this case, the algorithm considers all positions within the rectangle rather than just few pre-set ones. As such, it has improved accuracy but also much higher computational complexity.

## Critical Evaluation

The paper does a detailed analysis of requirements needed for a real-world camera system. As such, it is a helpful source when considering all these requirements. The paper also investigates alternative problems, giving insights into how other approaches can be used to solve the Camera Placement Problem.

Unfortunately, the paper has several issues in relation to the implementation of the algorithm. The program appears to be more akin to a prototype rather than a fully finished product. The algorithm itself also seems poorly thought out as there is a lot of redundancies when evaluating each camera position (Rectangles are not blocking meaning a given position can be evaluated up to 4 times depending on room and rectangle size). The paper states that the goal was to implement as many features as possible rather than considering the time complexity of individual algorithms.

The author himself acknowledges these issues, listing possible improvements at the bottom of the paper.

## Conclusion

In conclusion, this source offers useful insights into constraints that come into play when designing a real-world camera system. Unfortunately, rest of paper should not be used due to several glaring issues which occurred during both design and implementation process.

# Bibliography

Stahl, M. P. a. J., 2008. *The Camera Placement Problem - An art gallery problem variation.* s.l., s.n.