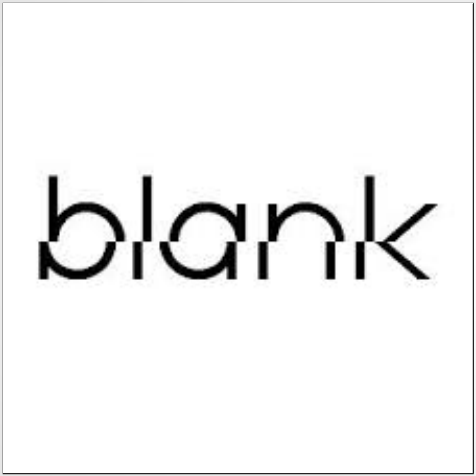
Computer Vision
Fall 2021
Problem Set #2

First Name Last Name
Email Address

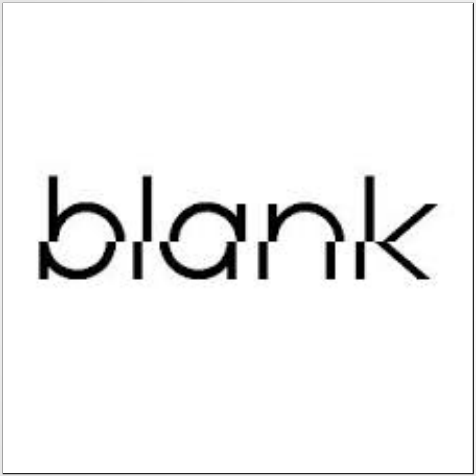
1a)Traffic Light Detection



ps2-1-a-1

Coordinates and State:
(-1, -1), color: black

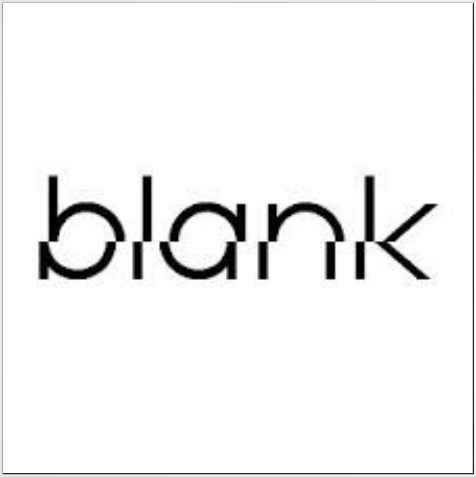
1b)Traffic Sign Detection - Construction



ps2-1-b-1

Coordinates:
(-1, -1), color: black

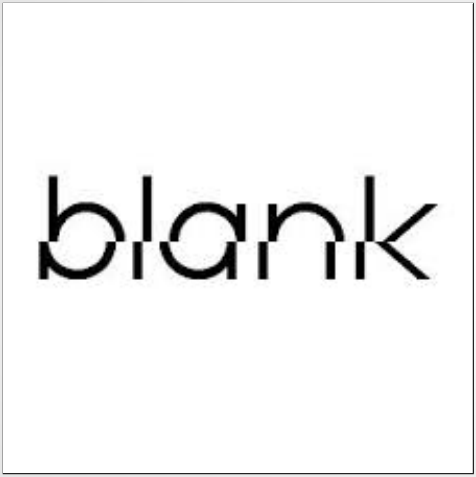
2a)Template Matching - TL



ps2-2-a-1

Coordinates:
(-1, -1)

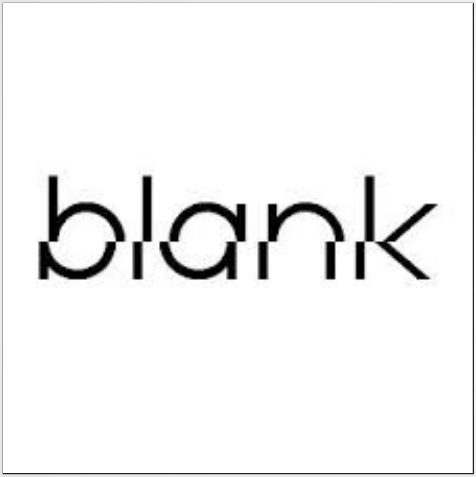
2b)Template Matching - Construction



ps2-2-b-1

Coordinates:
(-1, -1)

2c)Template Matching - Finding Waldo



ps2-2-c-1

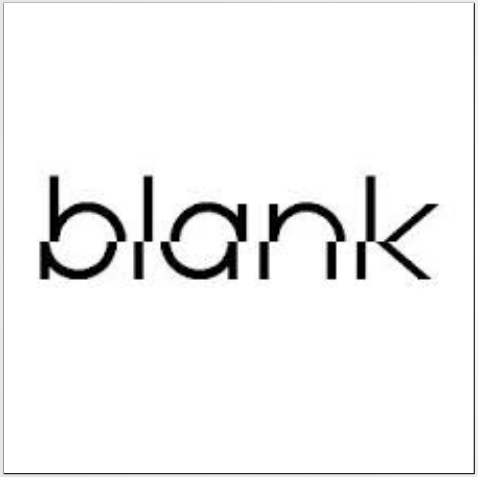
Coordinates:
(-1, -1)

2d)Discussion

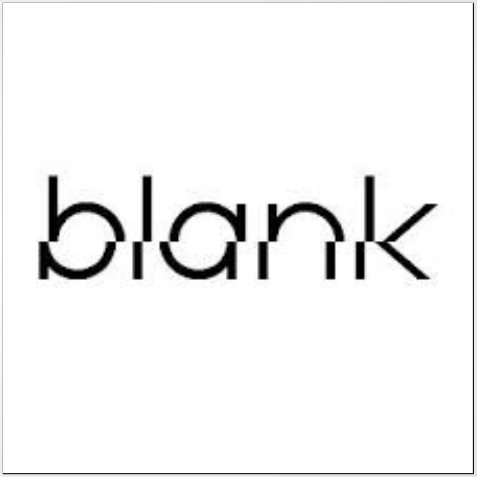
What are the disadvantages of using Hough based methods in finding Waldo? Can template matching be generalised to all images? Explain Why/Why not. Which method consistently performed the best, why?

Answer here.

4a1) Compression - Threshold 0.1

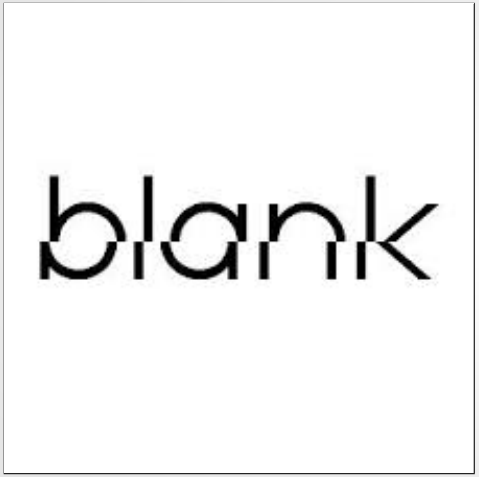


ps2-4-a-1 resulting image

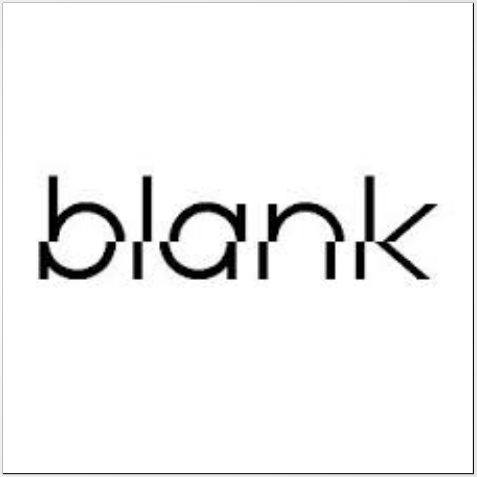


ps2-4-a-1 frequency domain

4a2) Compression - Threshold 0.05

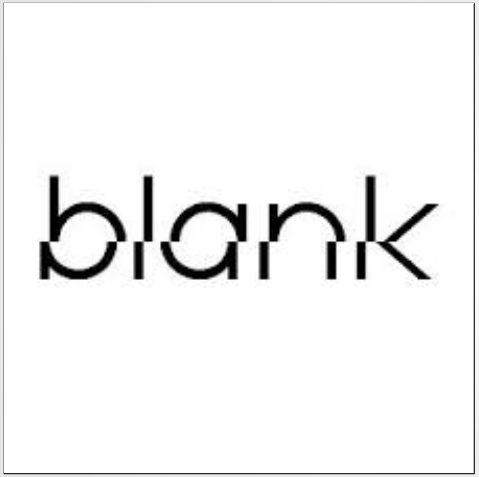


ps2-4-a-2 resulting image

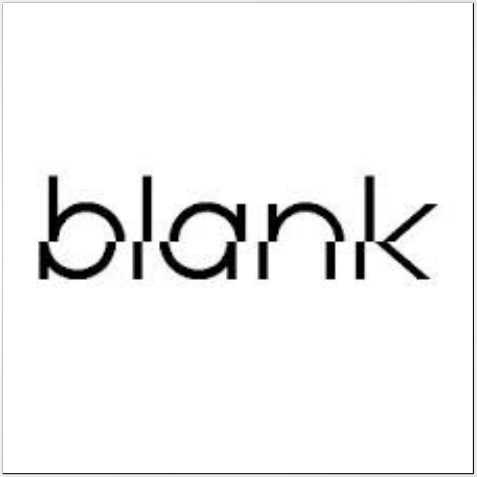


ps2-4-a-2 frequency domain

4a3) Compression - Threshold 0.001

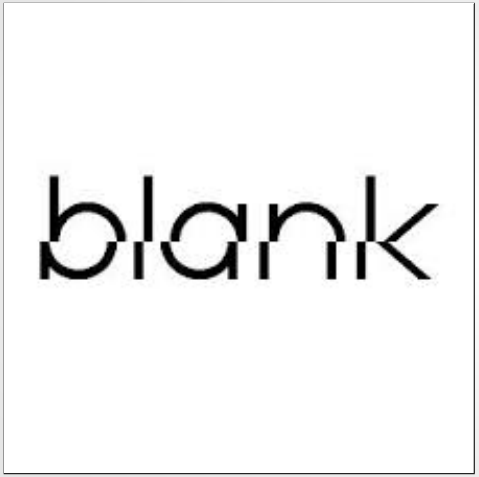


ps2-4-a-3 resulting image

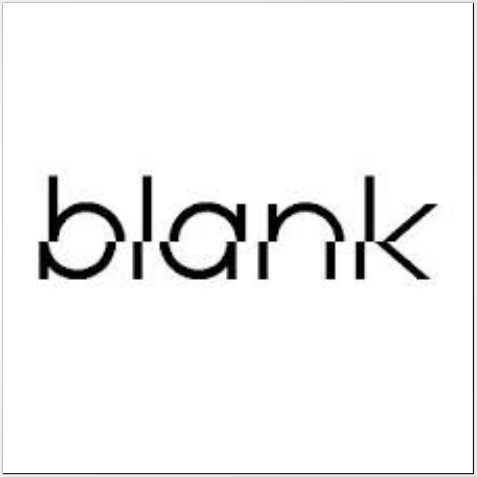


ps2-4-a-3 frequency domain

5a1) Filtering - Radius 100

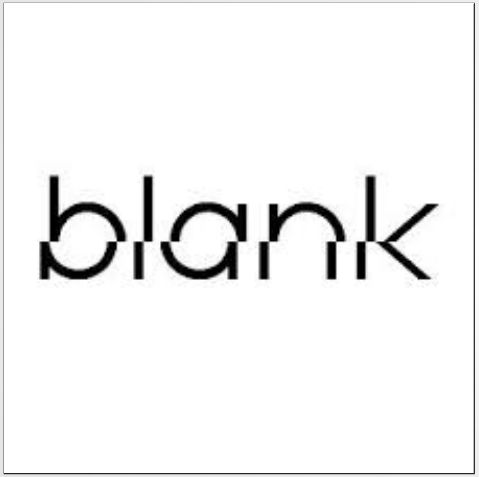


ps2-5-a-1 resulting image

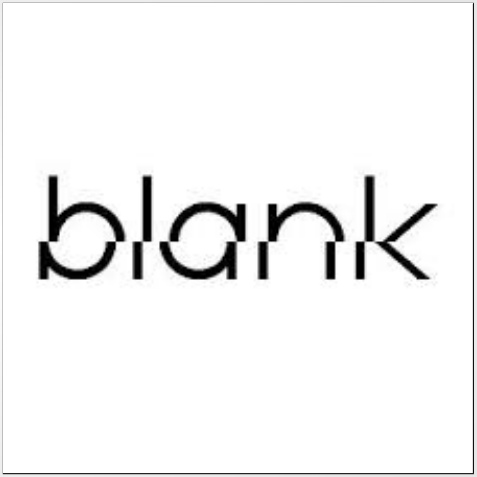


ps2-5-a-1 frequency domain

5a2) Filtering - Radius 50

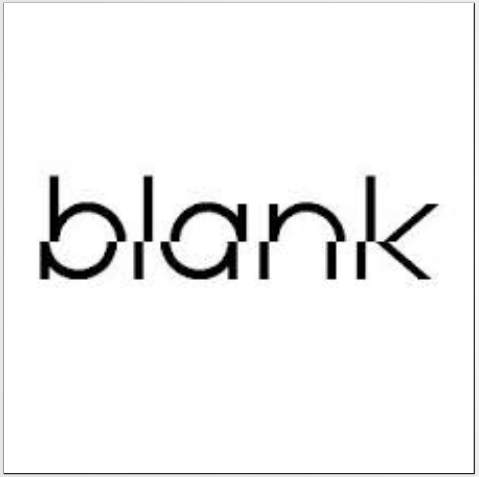


ps2-5-a-2 resulting image

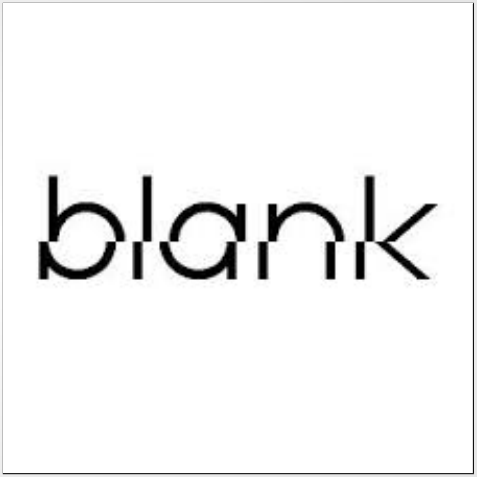


ps2-5-a-2 frequency domain

5a3) Filtering - Radius 10



ps2-5-a-3 resulting image



ps2-5-a-3 frequency domain

5b) Discussion

What are the differences between compression and filtering? How does this change the resulting image?

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5c) Discussion

Given an image corrupted with salt and pepper pepper noise, what filtering method can effectively reduce/remove this noise? Also explain your choice of filtering method.

Answer here.