

A simple detector for crowd counting using OpenCV and Python

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1 Background Removal

Procedure

- 1 Import images as black and white.
- 2 Apply Adaptive Histogram equalization to the images.
- 3 Subtract the background to the images using the image with the background.
- 4 Apply an erosion algorithm to obtain small highlighted areas.
- 5 Apply a thresholding algorithm to binarize the image.
- 6 Apply a dilation operation into the binarized images to expand the whites.
- 7 Use a contour algorithm to extract the different regions containing persons.
- 8 Obtain the bounding boxes from these regions.
- 9 Count them and compare the number of detections to the real quantity.

Background Removal



We need to do something with the mood of the images.



Background Image



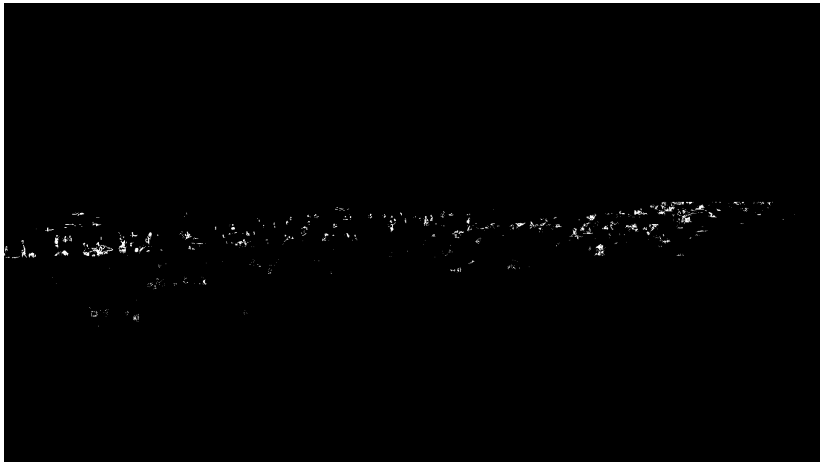
Gaussian Blur



Substraction



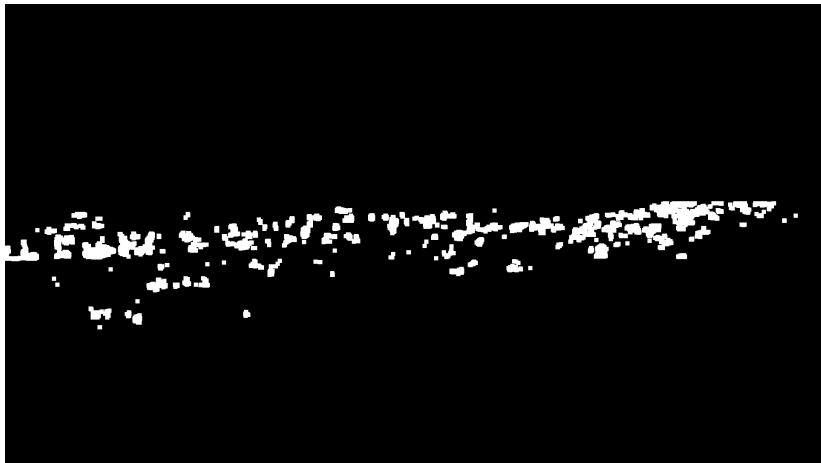
Binarization



Masking



Dilation



Find contours



Matching



Conclusions

It is not good... but at least does something