Contents

[**Introduction** 1](#_Toc381369807)

[How to run? 1](#_Toc381369808)

[1. Background Subtraction 2](#_Toc381369809)

[a) Codebooks construction from N frames 2](#_Toc381369810)

[b) Refined codebooks by employing the maximum negative run length 5](#_Toc381369811)

[c) Foreground detection to get the foreground pixels 6](#_Toc381369812)

[searchCodeBook matlab code 7](#_Toc381369813)

[2. Morphological Operations 9](#_Toc381369814)

[a) Matlab Code for Morphological Operation 9](#_Toc381369815)

[b) First Dilation and then erosion 9](#_Toc381369816)

[c) Result Frames 9](#_Toc381369817)

[3. Connected Components Labeling 12](#_Toc381369818)

**Introduction**

1. Bgsubtraction.m = main .m file implementing the “Background Modeling and subtraction by codebook costruction” by Kyungnam Kim, Thanarat H. Chalidabhongse, David Harwood, Larry Davis.
2. codebook\_video1\_1.mat = it is code book generated for all the frames present in the video1\_1 folder.

## How to run?

>> bgsubtraction(<Path of test sequence>',0.5,1.3,20,22,0,1)

Parameter 1 = path of the folder containing i) training image if generating codewords ii) test images if obtaining the foreground using algorithm.

Parameter 2: alpha value

Parameter 3: beta value

Parameter 4: epsilon1

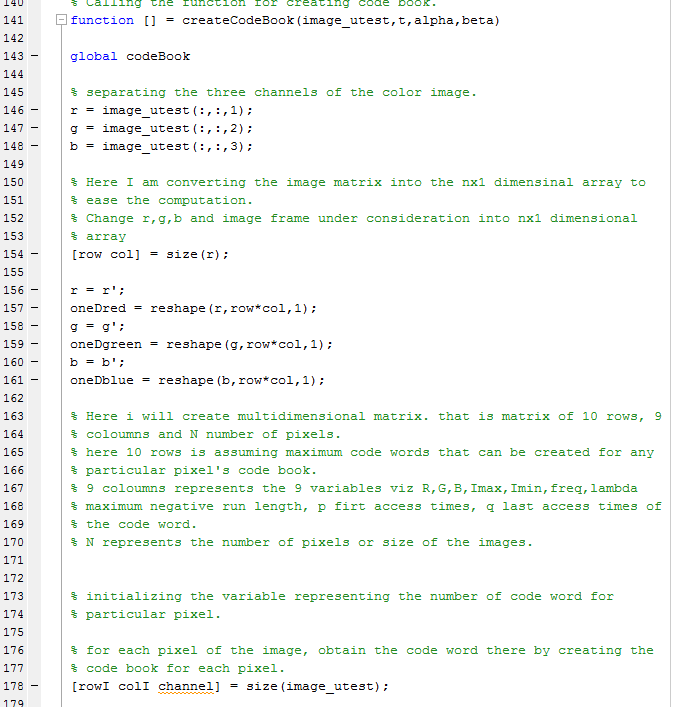
Parameter 5: epsilon2

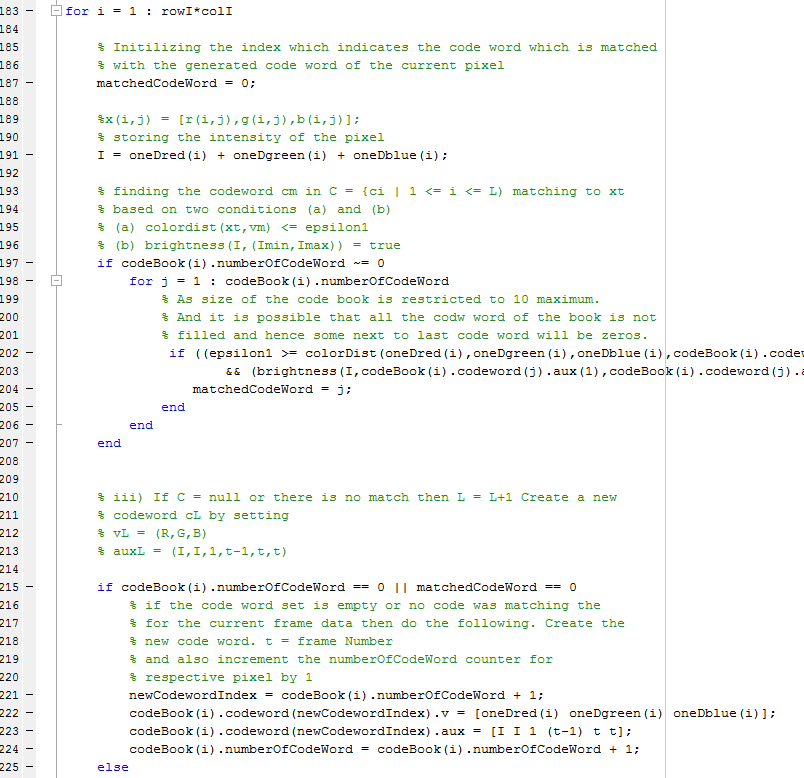
Parameter 6: 1 if generating code book else 0

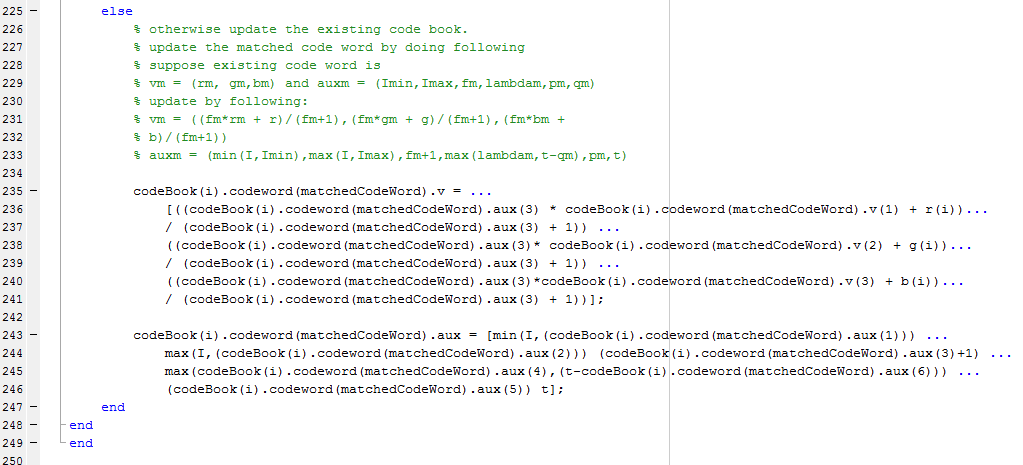
Parameter 7: 1 if detecting the foreground else 0

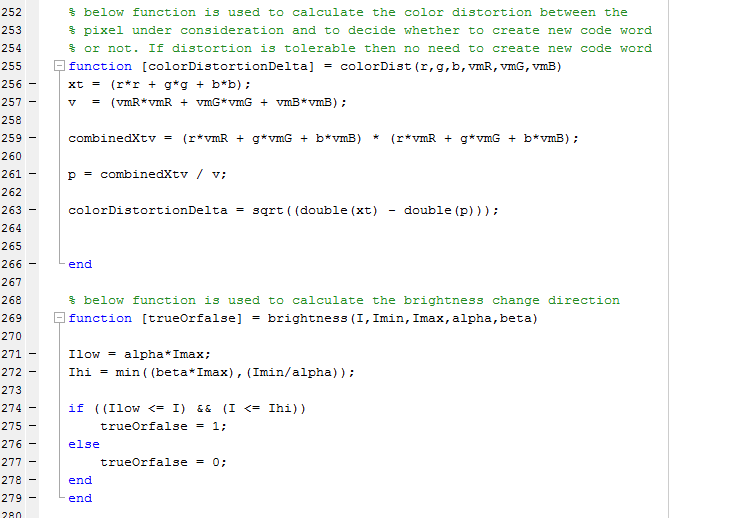
1. Background Subtraction
2. Codebooks construction from N frames

Matlab Code:



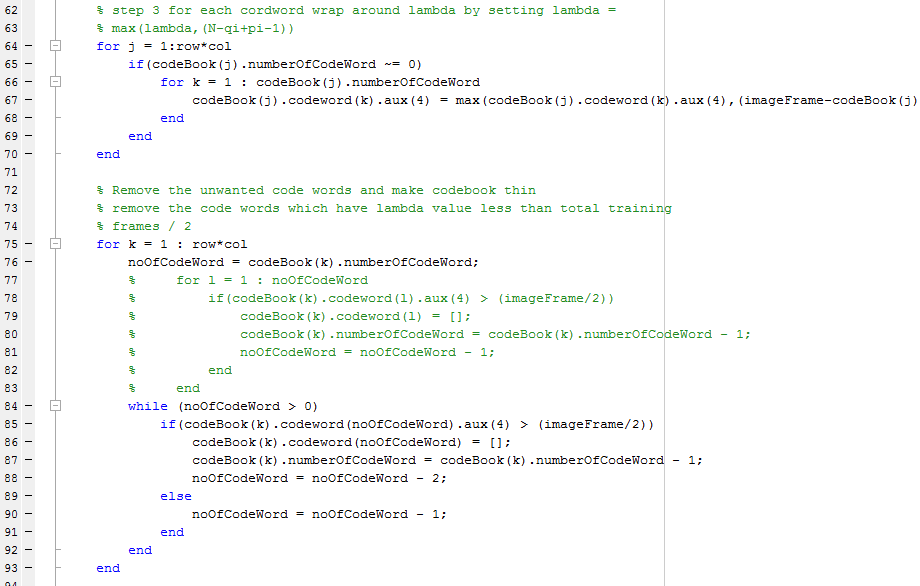






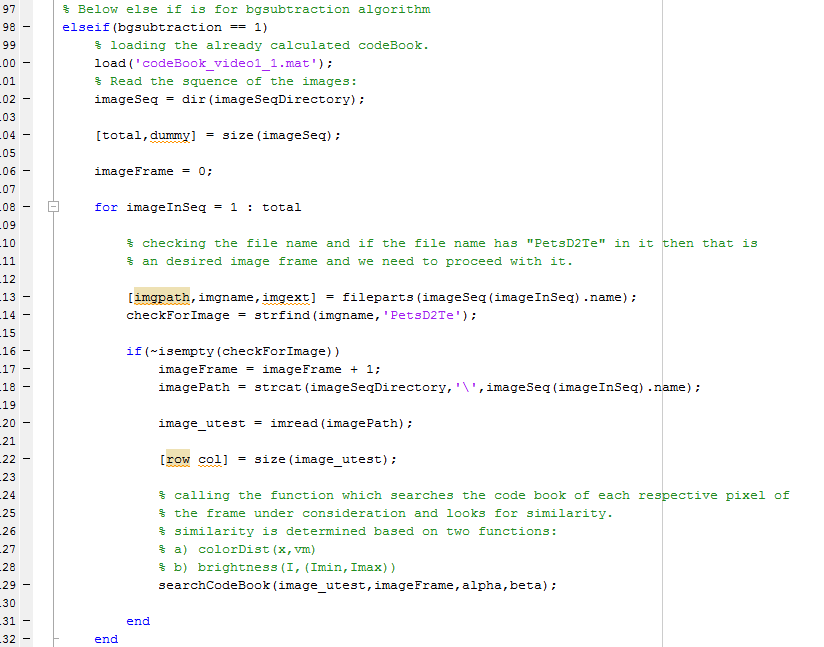
1. Refined codebooks by employing the maximum negative run length

Matlab Code:

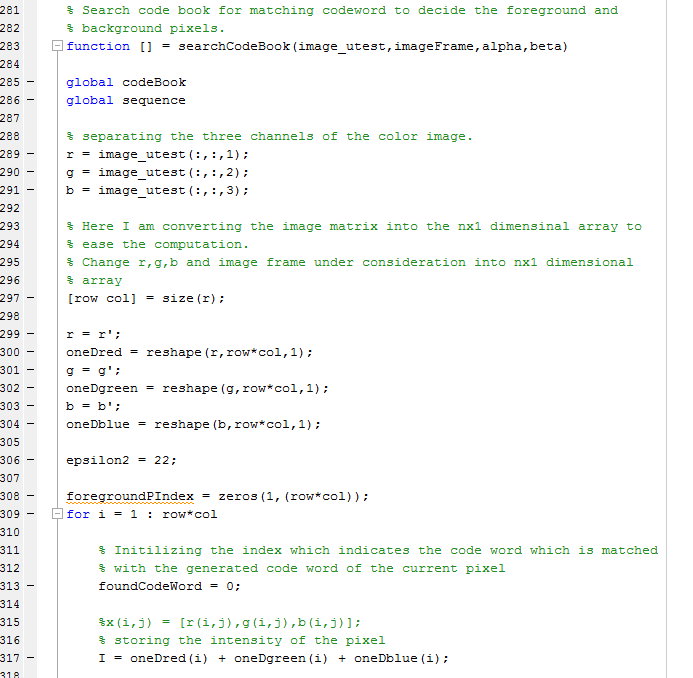


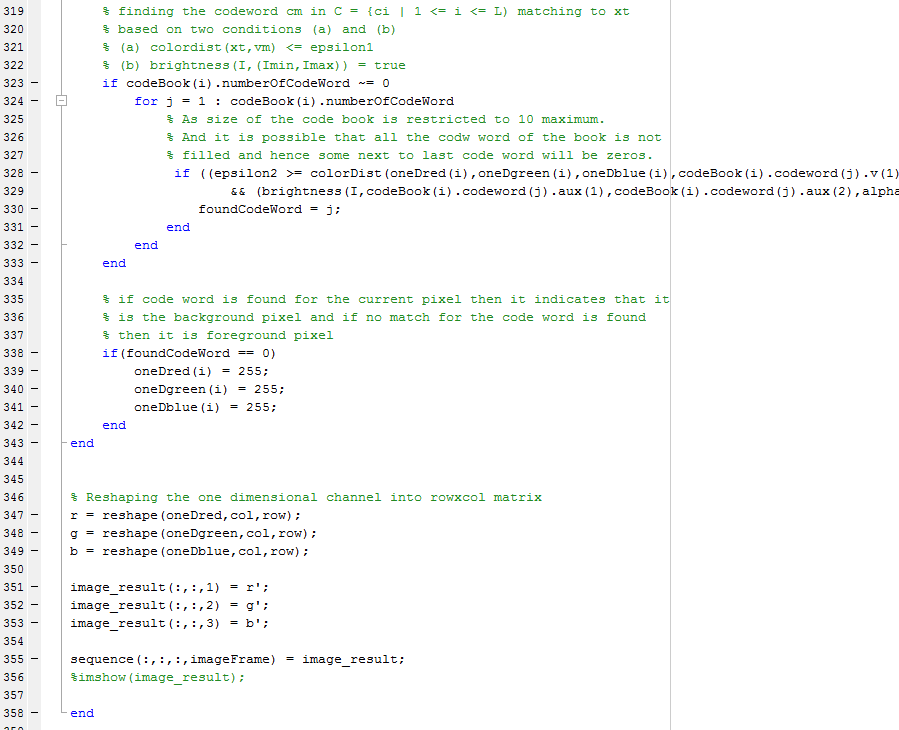
1. Foreground detection to get the foreground pixels

Matlab Code:

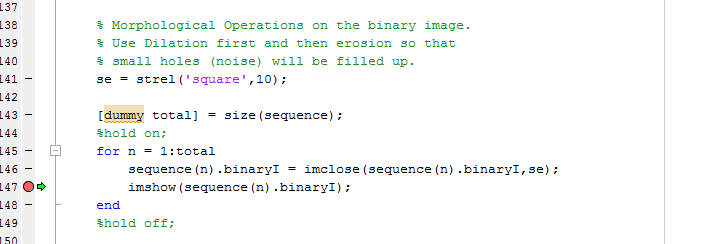


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1. Morphological Operations
2. Matlab Code for Morphological Operation



1. First Dilation and then erosion

I am using dilation first then followed by erosion so as to fill up the small holes in the image.

1. Result Frames

Frame 1:



Frame 2:



Frame 3:



Frame 4:



Frame 5:



1. Connected Components Labeling

I used the following connected component algorithm:

Matlab Code:

