Camera-based Simple Calculator

Team :- 8

the segmentation of the equation

1) First the blur the image the sigma value of 2 using Gaussian blurring function
2) The convert the image from rgb to gray the thresh the image with value of 150
3) Dilate the image with structure element of cross 50 times
4) Then we have 2 rules
    4.1) find the greatest object that doesn't touch the border of the image .
    4.2) if all the objects touch the border then take the second greatest object.
5) after that you will have the equation segmented from the image the find all connected components from that image each one of the will be a symbol from the image.

6) then take each symbol and find the border image of it

The find the connected components of this image

If cc.numobjects == 3 this object is number 8

If cc.numobjects == 2 this object is number 0,4,6,9

If cc.numobjects == 1 this object is number 1,2,3,5,7,(,+,-,.,),^,x

7) let’s classify 0,4,6,9 -> 0 the have the longest major access in all of them then 6 the major access in the second half of the image them 9 have the major access in the first have of the image and four have shortest major access of the image .

8) + the only two lines perpendicular for each other’s and – has a width more than the height for 2 times along.

9) x the two lines with slope equation

10) . 1 2 3 5 7 ( ) ^ using the Fourier descriptors

11) the fixed the result of Fourier from (,) and 2 , 5

12) evaluate the equation.