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**KUET** | **Khulna University of Engineering & Technology**

**Find Age of tree by image processing**

**Prepared for**

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CSE 6243

Advanced Digital Image Processing

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**Technology:**

Python , Open CV , Used Anaconda Spyder Code editor for write code.

**Implementation:**

Algorithm Steps:

**Step 1:**

Take an image and resize the image .

default\_file = 'input.jpg'

filename = argv[0] if len(argv) > 0 else default\_file

# Loads an image

src = cv.imread(cv.samples.findFile(filename), cv.IMREAD\_COLOR)

# Check if image is loaded fine

if src is None:

print ('Error opening image!')

print ('Usage: hough\_circle.py [image\_name -- default ' + default\_file + '] \n')

return -1

**Step 2:**

Now Did the Hough circles transform to find the circles.

gray = cv.cvtColor(src, cv.COLOR\_BGR2GRAY)

gray = cv.medianBlur(gray, 5)

rows = gray.shape[0]

circles = cv.HoughCircles(gray, cv.HOUGH\_GRADIENT, 1, rows / 8,

param1=60, param2=25,

minRadius=1, maxRadius=100)

**Step 3:**

Now Count the total number of circles and print the circles number that is the actual age of the tree.

if circles is not None:

circles = np.uint16(np.around(circles))

count=0

for i in circles[0, :]:

center = (i[0], i[1])

# circle center

cv.circle(src, center, 1, (0, 100, 100), 3)

# circle outline

radius = i[2]

cv.circle(src, center, radius, (255, 0, 255), 3)

count=count+1;

print('The age of the tree:' +repr(count)+ ' years')

# cv.imshow("detected circles", src)

cv.waitKey(0) minRadius=1, maxRadius=100)

**Input:**



**Output:**

**The age of the tree : 12 years**