IIPR Quiz: Image Segmentation and Object Detection

Date: 20/05/2021
Time: 3.30-4.00 PM
Total questions: 20
Total marks: 20

1. Similarity-based segmentation is (CO4)
(1 Point)

- [ ] Gradient based edge detection
- [ ] Hough Transform
- [x] Region growing
- [x] Region splitting
- [x] Region merging

2. ret, thresh1 = cv2.threshold(img, 120, 255, cv2.THRESH_BINARY) Output of the following statement is (CO4)
(1 Point)

- (•) 120, thresh1
- ( ) 255, thresh1
- ( ) 0, thresh1
- ( ) 125, thresh1

3. One of the following not good for noisy image processing (CO4)
(1 Point)

- First order derivative
- Second order derivative
- third order derivative
- fourth order deivative

4. Image classification is one of the steps of object detection (CO5)
(1 Point)

- True
- False

5. If the image is noisy, what kind of filter should we apply before edge detection (CO4)
(1 Point)

- low pass filter
- high pass filter
- gradient filter
- None of the above

6. The RCNN is better than CNN with respect to (CO5)
(1 Point)

- Computational cost
- Computational Time
- Memory required
- None of the above

7. We want to use Hough Transform to identify the presence of different types of conics (e.g. parabolas, hyperbolas, ellipses) in an edge image. Consider a parabola given by equation y = ax^2+bx+c. The Hough space for identifying parabolas is (CO5)
(1 Point)

- One dimensional
- Two dimensional
- Three Dimensional
- Four Dimensional

8. Check given statement is true or false
The Canny edge detector is a linear filter because it uses the Gaussian filter to blur the image and then uses the linear filter to compute the gradient.
(CO4)
(1 Point)

- True
- False

9. Which of the following option is preferred if we are detecting the line as a contour (CO4)
(1 Point)

- CHAIN_APPROX_NONE
- CHAIN_APPROX_SIMPLE
- RETR_EXTERNAL
- RETR_TREE

10. Second-order derivative produces
(CO4)
(1 Point)

- Thick Edges
- Thin Edges
- Long Edges
- Small Edges

11. Which is meant by assuming any two neighboring that are both edge pixels with consistent orientation?
(CO4)
(1 Point)

- Canny edge detection
- Smoothing
- Segmentation
- None of the mentioned

12. Edge Detection for image segmentation is : (CO4)
(1 Point)

- Discontinuity based
- Similarity Based
- None
- Cannot be used for image segmentation

13. For finding vertical lines we use mask of values (CO4)
(1 Point)

- [-1 -1 -1; 2 2 2; -1 -1 -1]
- [2 -1 -1; -1 2 -1; -1 -1 2]
- [-1 2 -1; -1 2 -1; -1 2 -1]
- [-1 -1 2; -1 2 -1;2 -1 -1]

14. The accuracy of image segmentation can be improved by the type of (CO4)
(1 Point)

- Rotation
- Translation
- Division
- Scaling

15. Which of the option should we select to retrieves all of the contours without establishing any hierarchical relationships,
(CO5)
(1 Point)

- RETR_EXTERNAL
- RETR_LIST
- RETR_CCOMP
- RETR_TREE

16. For diagonal edge detection we used
(CO4)
(1 Point)

- 1D Mask
- 2D Mask
- 3D Mask
- 4D Mask

17. In second-order derivative approximation, the second-order derivative is zero on ..... (CO4)
(1 Point)

- ( ) Edge
- ( ) Step
- ( ) Onset
- (•) Ramp

18. Image Blurring is done before (CO4)
(1 Point)

- [x] Edge Detection
- [ ] Thresholding
- [x] Contour Detection
- [ ] Line Detection
- [ ] Circle Detection

19. The region selection algorithm is used for (CO4)
(1 Point)

- [ ] Object Extraction and classification
- [x] Object Detection
- [x] Segmentation
- [ ] Boundary Detection

20. YOLO has the single convolutional neural network (CO5)
(1 Point)

- (•) True
- ( ) False