MultipleChoiceQuestion

1 Name the filters. c19cd52c-37fd-4e8f-91dc-e63729c6744a

Shovel False None

Sovel False None

Sobel True None

Prewit False None

Prewitt False None

Previt False None

Roberts False None

Robert False None

Row-bert False None

MultipleChoiceQuestion

2 Name the filters. ef034d9f-b231-477c-a174-79f2a37ec320

Shovel False None

Sovel False None

Sobel False None

Prewit False None

Prewitt True None

Previt False None

Roberts False None

Robert False None

Row-bert False None

MultipleChoiceQuestion

3 Name the filters. ad2ae678-11d1-4abe-8b81-3176e8be821e

Shovel False None

Sovel False None

Sobel False None

Prewit False None

Prewitt False None

Previt False None

Roberts True None

Robert False None

Row-bert False None

MultipleChoiceQuestion

4 Which components of the gradient do these correlational filter masks compute? 0be131ab-d8ac-4857-aee1-daf22d5c337f

magnitude and direction of the gradient False None

gradient in 45 and 135 degrees False None

vertical and horizontal gradient False None

magnitude and orientation of the gradient False None

horizontal and vertical gradient True None

gradient in 45 and -45 degrees False None

MultipleChoiceQuestion

5 How many steps does the Canny edge detector have? None

0 False None

1 False None

2 False None

3 False None

4 False None

5 False None

6 True None

7 False None

8 False None

9 False None

10 False None

MultipleChoiceQuestion

6 The last (6th) step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation False None

Double thresholding False None

Noise removal False None

Non-maxima suppression False None

Hysteresits True None

MultipleChoiceQuestion

7 The second to last (5th) step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation False None

Double thresholding True None

Noise removal False None

Non-maxima suppression False None

Hysteresits False None

MultipleChoiceQuestion

8 The fourth step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation False None

Double thresholding False None

Noise removal False None

Non-maxima suppression True None

Hysteresits False None

MultipleChoiceQuestion

9 The third step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation True None

Double thresholding False None

Noise removal False None

Non-maxima suppression False None

Hysteresits False None

MultipleChoiceQuestion

10 The second step in Canny edge detection is... None

Gradient computation in perpendicular directions True None

Gradient computation in terms of magnitude and orientation False None

Double thresholding False None

Noise removal False None

Non-maxima suppression False None

Hysteresits False None

MultipleChoiceQuestion

11 The first step in Canny edge detection is... None

Gradient computation in perpendicular directions False None

Gradient computation in terms of magnitude and orientation False None

Double thresholding False None

Noise removal True None

Non-maxima suppression False None

Hysteresits False None

MultipleChoiceQuestion

12 What noise removal technique should we use when applying Canny edge detection? (first step) None

Median filter False None

Mean filter False None

Correlation using a box filter False None

Gaussian filtering True None

Non-maxima suppression False None

MultipleChoiceQuestion

13 Based on the previous question, what filter or filters could we use in the first step? e58c5bd8-d0d7-4f33-95e4-fa587f9172ac

a True None

b True None

c False None

d True None

e False None

f False None

MultipleChoiceQuestion

14 Apply the Gaussian filter in the figure to the highlighted pixel. [RESULTS IN NEXT QUESTION] 04c2f1fa-5276-4e0c-afcf-84d6ad3528a8

0 False None

1 False None

2 False None

3 False None

4 False None

5 True None

6 False None

7 False None

8 False None

9 False None

10 False None

MultipleChoiceQuestion

15 [RESULT] 6cb38c61-a567-41ea-8079-906433eb41d1

5 True None

0 False None

MultipleChoiceQuestion

16 Apply the Gaussian filter in the figure to the highlighted pixel. [RESULTS IN NEXT QUESTION] d52938cf-acba-4b98-af77-c225f30b6928

1.135 False None

1.615 False None

2.325 False None

2.625 True None

3.325 False None

3.652 False None

MultipleChoiceQuestion

17 [RESULT] 52c48d3c-004f-440f-a958-e04d2d0b0aae

2.625 True None

0 False None

ClickMapQuestion

18 Assume that you have computed the gradients of an image and used them to calculate the gradient orientation and its magnitude. The results are shown in the image. Perform the non-maxima suppression of the Canny edge detector for the horizontal direction and select the elements that would be sent to zero in the image. [RESULTS IN NEXT QUESTION] 5c537ac6-a403-4846-8b88-1636c878004b

ClickMapQuestion

19 Assume that you have computed the gradients of an image and used them to calculate the gradient orientation and its magnitude. The results are shown in the image. Perform the non-maxima suppression of the Canny edge detector for the horizontal direction and select the elements that would be sent to zero in the image. [RESULTS IN NEXT QUESTION] 4d80124b-85f0-4879-b169-39462d45f157

ClickMapQuestion

20 RESULTS c30e1b5f-b68b-4e77-aca6-199302369ade

ClickMapQuestion

21 On paper, perform double thresholding with thresold values of 20 and 34. Provide your answers on Vevox for the high threshold only. 762212e4-021b-4d4b-aa63-7164b9a2a049

ClickMapQuestion

22 RESULTS 4300b6b6-30ac-414f-873e-e8b869402b9f

ClickMapQuestion

23 Perform ONE hysteresis step. da6e2337-5336-4a90-80ca-5b666e4cee89

ClickMapQuestion

24 RESULTS 935228b4-51ea-42d0-b02e-b62712fe1d44

ClickMapQuestion

25 Perform a SECOND hysteresis step. 57e13160-8fe7-475f-8e0c-cdd99ce2cef4

ClickMapQuestion

26 RESULTS 737bee84-8dfb-4faf-980e-6a8d141bd188

MultipleChoiceQuestion

27 Do we need to run a third hysteresis step? e5cee662-3939-45ed-b4f5-e397b242f225

no False None

it depends True None

yes True None

ClickMapQuestion

28 RESULTS 1cf6875b-75f6-4a6d-b4db-868c17bfe10d

-1	0	+1
-2	0	+2
-1	0	+1

Gx

+1	+2	+1
0	0	0
-1	-2	-1

Gy