Printed Pages: 3

NCS-073

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2295036

Roll No.

B. TECH.

Regular Theory Examination (Odd Sem - VII), 2016-17

COMPUTER VISION

Time : 3 Hours *Max. Marks : 100*

SECTION - A

1. Answer all parts of the following. Write answer of each in short. (10×2=20)

a) Explain briefly monocular imaging system.

b) What do you mean by camera calibration?

c) Explain briefly the feature extraction.

d) What is the need of edge detection?

e) Explain the objective of motion estimation.

f) Define the regularization theory.

g) What is the need of image segmentation, explain the benefits of it.

h) Define the multiresolution analysis.

i) What do you mean by Hough transform?

j) Explain the use of principal component analysis.

SECTION - B

2. Attempt any five questions from this section. (5×10=50)

a) Give all the steps involved in the image formation model and explain each step briefly.

b) Differentiate Orthographic and perspective projection with the help of suitable example.

c) (i) Explain opening and closing with example.

(ii) Explain the boundary descriptors.

d) Explain border tracking algorithms with suitable example.

e) Write short notes on the following

(i) Fourier and Wavelet descriptors

(ii) Shape representation and segmentation

f) Explain the back tracing algorithms with suitable example.

g) Explain Hough transform with suitable example. Mention all the merits and demerits.

h) Explain the different object recognition models with suitable example.

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SECTION - C

Note : Attempt any two questions from this section. **(2×15=30)**

3. Explain the knowledge based vision? Explain different forms of Knowledge representation used in computer vision.

4. What are the objectives of Principal Components Analysis (PCA)? How many principal components should be retained?

5. How the features are extracted from the image, discuss the best algorithms of feature extraction. Differentiate the feature extraction with feature selection.

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