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| --- | --- |
|  | 1024 x 1024 image has resolution of  a.1048576  b.1148576  c.1248576  d.1348576  Answer: (a).1048576 |
|  | L = 23 would have  a.2 levels  b.4 levels  c.6 levels  d.8 levels  Answer: (d).8 levels |
|  | The fovea itself is a circular indentation in the retina of about  a.1.8mm  b.1.5mm  c.1.6mm  d.1.7mm  Answer: (b).1.5mm |
|  | Type of zooms are  a.8  b.6  c.4  d.2  Answer: (d).2 |
|  | No of bits to store image is denoted by the formula  a.b = NxK  b.b = MxN  c.b = MxNxK  d.b = MxK  Answer: (c).b = MxNxK |
|  | Value of speed of light constant c  a.2.998x10^8  b.3.998x10^8  c.4.998x10^8  d.5.998x10^8  Answer: (a).2.998x10^8 |
|  | Black and white images have only  a.2 levels  b.3 levels  c.4 levels  d.5 levels  Answer: (a).2 levels |
|  | Black and white pixels of image are represented in matrix as  a.1 and 2  b.0 and 1  c.0 and 2  d.0 and -1  Answer: (b).0 and 1 |
|  | Image linear interpolation is given by the formula  a.v(x,y) = ax+by+cxy+d  b.v(x,y) = ax+by+cxy  c.v(x,y) = ax+by+d  d.v(x,y) = by+cxy+d  Answer: (a).v(x,y) = ax+by+cxy+d |
|  | Value of plank's constant h is  a.9.55x10-34  b.8.55x10-34  c.7.55x10-34  d.6.55x10-34  Answer: (d).6.55x10-34 |
|  | Assume that an image f(x, y) is sampled so that the result has M rows and N columns. If the values of the coordinates at the origin are (x, y) = (0, 0), then the notation (0, 1) is used to signify :  a.Second sample along first row  b.First sample along second row  c.First sample along first row  d.Second sample along second row  Answer: (a).Second sample along first row |
|  | Let Z be the set of real integers and R the set of real numbers. The sampling process may be viewed as partitioning the x-y plane into a grid, with the central coordinates of each grid being from the Cartesian product Z2, that is a set of all ordered pairs (zi, zj), with zi and zj being integers from Z. Then, f(x, y) is said a digital image if:  a.(x, y) are integers from Z2 and f is a function that assigns a gray-level value (from Z) to each distinct pair of coordinates (x, y)  b.(x, y) are integers from R2 and f is a function that assigns a gray-level value (from R) to each distinct pair of coordinates (x, y)  c.(x, y) are integers from R2 and f is a function that assigns a gray-level value (from Z) to each distinct pair of coordinates (x, y)  d.(x, y) are integers from Z2 and f is a function that assigns a gray-level value (from R) to each distinct pair of coordinates (x, y)  Answer: (d).(x, y) are integers from Z2 and f is a function that assigns a gray-level value (from R) to each distinct pair of coordinates (x, y) |
|  | Let Z be the set of real integers and R the set of real numbers. The sampling process may be viewed as partitioning the x-y plane into a grid, with the central coordinates of each grid being from the Cartesian product Z2, that is a set of all ordered pairs (zi, zj), with zi and zj being integers from Z. Then, f(x, y) is a digital image if (x, y) are integers from Z2 and f is a function that assigns a gray-level value (that is, a real number from the set R) to each distinct coordinate pair (x, y). What happens to the digital image if the gray levels also are integers?  a.The Digital image then becomes a 2-D function whose coordinates and amplitude values are integers  b.The Digital image then becomes a 1-D function whose coordinates and amplitude values are integers  c.The gray level can never be integer  d.None of the mentioned  Answer: (a).The Digital image then becomes a 2-D function whose coordinates and amplitude values are integers |
|  | The digitization process i.e. the digital image has M rows and N columns, requires decisions about values for M, N, and for the number, L, of gray levels allowed for each pixel. The value M and N have to be:  a.M and N have to be positive integer  b.M and N have to be negative integer  c.M have to be negative and N have to be positive integer  d.M have to be positive and N have to be negative integer  Answer: (a).M and N have to be positive integer |
|  | The digitization process i.e. the digital image has M rows and N columns, requires decisions about values for M, N, and for the number, L, of max gray levels. There are no requirements on M and N, other than that M and N have to be positive integer. However, the number of gray levels typically is  a.An integer power of 2 i.e. L = 2k  b.A Real power of 2 i.e. L = 2k  c.Two times the integer value i.e. L = 2k  d.None of the mentioned  Answer: (a).An integer power of 2 i.e. L = 2k |
|  | The digitization process i.e. the digital image has M rows and N columns, requires decisions about values for M, N, and for the number, L, of max gray levels is an integer power of 2 i.e. L = 2k, allowed for each pixel. If we assume that the discrete levels are equally spaced and that they are integers then they are in the interval \_\_\_\_\_\_\_\_\_\_ and Sometimes the range of values spanned by the gray scale is called the \_\_\_\_\_\_\_\_ of an image.  a.[0, L – 1] and static range respectively  b.[0, L / 2] and dynamic range respectively  c.[0, L / 2] and static range respectively  d.[0, L – 1] and dynamic range respectively  Answer: (d).[0, L – 1] and dynamic range respectively |
|  | In the given Image, r is the distance between the centroid and object boundary, 'theta' is the angle with respect to reference axis and A=10. Find the distance of boundary pixel from the centroid at angle 3Π /2 by using Signature concept.  a.10  b.1.41  c.14.1  d.28.28  Answer: (d).10 |
|  | After digitization process a digital image with M rows and N columns have to be positive and for the number, L, max gray levels i.e. an integer power of 2 for each pixel. Then, the number b, of bits required to store a digitized image is:  a.b=M\*N\*k  b.b=M\*N\*L  c.b=M\*L\*k  d.b=L\*N\*k  Answer: (a).b=M\*N\*k |
|  | In digital image of M rows and N columns and L discrete gray levels, calculate the bits required to store a digitized image for M=N=32 and L=16.  a.16384  b.4096  c.8192  d.512  Answer: (b).4096 |
|  | In the given Image, r is the distance between the centroid  and object boundary,  'theta' is the angle with respect to reference axis and A=20. Find the distance of boundary pixel from the centroid at angle  3Π/4   by using Signature concept.  a.20  b.1.41  c.14.1  d.28.28  Answer: (d).28.28 |
|  | Consider two regions A and B composed of foreground pixels. The \_\_\_\_\_\_\_\_ of these two sets is the set of elements belonging to set A or set B or both.  a.OR  b.AND  c.NOT  d.XOR  Answer: (a).OR |
|  | If every element of a set A is also an element of a set B, then A is said to be a \_\_\_\_\_\_\_\_\_ of set B.  a.Disjoint set  b.Union  c.Subset  d.Complement set  Answer: (c).Subset |
|  | In Robot Navigation which Machine Learning Algorithm is used ……….  a. Supervised Learning  b. Unsupervised Learning  c. Semi-supervised Learning  d. Reinforcement learning  Answer: (d). Reinforcement learning |
|  | A gradient image’s smallest possible value is:  a. 0  b. e  c. -e  d. 1  Answer: (a) 0 |
|  | To find the Classifier Performance, Consider True Positive Value TP= 9, True Negative TN=8 ,False Positive=  1, False Negative= 2,   Calculate the Accuracy ?  a. 90%  b. 80%  c. 84%  d. 85%  Answer: (d) 85% |
|  | What equation do we use for the calculation of the B value according to the HSI components?  a. B=S(1-I)  b. B=I(1-S)  c. B=I(1+S)  d. B=S(1+I)  Answer: (b) B=I(1-S) |
|  | Two random variables can be uncorrelated when their covariance is:  a. 0  b. 1  c. -1  d. None of the above  Answer: (a) 0 |
|  | What would be the standard deviation value for a given constant area?  a. 1  b. -1  c. 0  d. None of the above  Answer: (c) 0 |
|  | Wavelength of thermal infrared ranges from  a.10.4-12.5  b.10.4-13.5  c.11.4-12.5  d.10.3-12.5  Answer: (a).10.4-12.5 |
|  | Consider the sample Dataset  in the given table. Calculate Weight W1 of the Regression Coefficients. Refer the given table.  C:\Users\admin\Desktop\34573_ImageRegression-011.jpg  a.7  b.3.5  c.3  d.-3.5  Answer: (b).3.5 |
|  | Electromagnetic visible spectrum ranges from  a.400-700nm  b.600-900nm  c.400-700pm  d.600-900pm  Answer: (a).400-700nm |
|  | Mean Values of data x and y are 4 and 15 respectively. Weight W1 of the regression coefficient is 7. Calculate Weight W0 of the Regression Coefficient?  a.43  b.-7  c.-13  d.-53  Answer: (c).-13 |
|  | Wavelength of near infrared ranges from  a.0.76-1.90  b.0.76-0.90  c.0.36-0.90  d.0.76-0.10  Answer: (b).0.76-0.90 |
|  | To find the Classifier Performance, Consider True Positive Value TP=  5 , True Negative TN=  8,   False Positive=  2, False Negative= 3, Calculate the Error Rate ?  a.21%  b.20%  c.27%  d.62%  Answer: (c).27% |
|  | Wavelength of visible green ranges from  a.0.52-0.70  b.0.52-0.62  c.0.53-0.60  d.0.52-0.60  Answer: (d).0.52-0.60 |
|  | Find the nearest neighbor of the following  35 in the list {1 3 15 20  30  40  45 50} in 1D  a. 20,40 & 45  b. 30, 40 &45  c. 32, 40 & 45  d. 15, 40 & 45  Answer: (b). 30, 40 &45 |
|  | Find the nearest neighbor of the following (1,3) in the list {(1,1),(3,3),(5,5)} in 2D  a. {(1,1), (3,3)}  b. {(1,1), (5,5)}  c. {(5,5), (3,3)}  d. {(3,3), (5,5)}  Answer: (a). {(1,1), (3,3)} |
|  | A typical size comparable in quality to monochromatic TV image is of size.  a.256 X 256  b.512 X 512  c.1920 X 1080  d.1080 X 1080  Answer: (b).512 X 512 |
|  | Which of the following is NOT supervised learning?  a. PCA  b. Decision Tree  c. Linear Regression  d. Naive Bayesian  Answer: (a). PCA |
|  | The number of grey values are integer powers of:  a.4  b.2  c.8  d.1  Answer: (b).2 |
|  | Consider the following two objects O1(6,6) and O2(2,3) with two attributes x1 and x2, Find the Euclidian Distance?  a.16  b.4  c.5  d.25  Answer: (c).5 |
|  | How many number of steps are involved in image processing?  a.10  b.9  c.11  d.12  Answer: (a).10 |
|  | Consider the template and image array shown in below. Perform the template matching and show the result. **Template=[1, 1, 1; 1, 1, 1; 1, 1, 1]** **Image Array=[1, 0, 1, 1, 1 ; 0, 1, 1, 1, 1 ; 1, 0, 1, 1, 1 ; 1, 1, 1, 0, 1 ; 1, 1, 1, 1, 1]**  a. [6, 7, 9 ; 7, 7, 8; 8, 7, 6]  b. [6, 7, 9 ; 7, 7, 8; 8, 7, 8]  c. [6, 7, 8 ; 7, 7, 8 ; 8, 7, 8]  d. [6, 7, 9 ; 7, 6, 8; 8, 7, 8]  Answer: (b). [6, 7, 9 ; 7, 7, 8; 8, 7, 8] |
|  | What is the correct sequence of steps in image processing?  a.Image acquisition->Image enhancement->Image restoration->Color image processing->Compression->Wavelets and multi resolution processing->Morphological processing->Segmentation->Representation & description->Object recognition  b.Image acquisition->Image enhancement->Image restoration->Color image processing->Wavelets and multi resolution processing->Compression->Morphological processing->Segmentation->Representation & description->Object recognition  c.Image acquisition->Image enhancement->Color image processing->Image restoration->Wavelets and multi resolution processing->Compression->Morphological processing->Segmentation->Representation & description->Object recognition  d.Image acquisition->Image enhancement->Image restoration->Color image processing->Wavelets and multi resolution processing->Compression->Morphological processing->Representation & description->Segmentation->Object recognition  Answer: (b).Image acquisition->Image enhancement->Image restoration->Color image processing->Wavelets and multi resolution processing->Compression->Morphological processing->Segmentation->Representation & description->Object recognition |
|  | The Singular values of the matrix [2,2 ; 2,2] are …......  a. (1,0)  b. (2,0)  c. (3,0)  d. (2,2)  Answer: (b). (2,0) |
|  | Consider the following shape and write the corresponding 8-directional codes using Chain Code technique.  a. 0   7   6   4    3     2  b. 6   7   0   2    3     4    c. 6  7   0   2    3     2  d. 0   7   6   4    3     4  Answer: (b). 6   7   0   2    3     4 |
|  | This of the following is true for Eigen faces (PCA)..........  a. Can be used to effectively detect deformable objects.  b. Invariant to affine transforms.  c. Can be used for lossy image compression.  d. Is invariant to shadows.  Answer: (c). Can be used for lossy image compression. |
|  | Find the one Nearest Neighbour of the following  (1,3) in the list {(1,1),(3,3),(5,5), (2,4)} in 2D  a. (1,1)  b. (5,5)  c. (2,4)  d. (3,3)  Answer: (c). (2,4) |
|  | Consider the following shape and write the corresponding 8-directional codes using Chain Code technique.    a. 7   0    2    4    2    4  b. 7   0    2    5    6    2  c. 7   0    2    5    24  d. 7   0    2    5    6    4  Answer: (d). 7   0    2    5    6    4 |
|  | Consider the following shape and write the corresponding 8-directional codes. Perform Circular Normalization. Use Differential chain code.  a. 6  0   2   4   2    4   6    4  b. 6  0   2   4   2    2   6    4  c. 2   2   2   2  6   2   2   6  d. 2   2   2   2    6   2   2   4  Answer: (c). 2   2   2   2  6   2   2   6 |
|  | The trial and error process of grouping of objects is called as …………………  a. Classification  b. Regression  c. Clustering  d. Categorization  Answer: (c). Clustering |
|  | Let us consider a classification problem that involves classification of an image pixel using a single feature colour into two classes-forest and non-forest. Let the prior probability of the forest class be 0.6, the feature i of colour green belonging to the forest image in the training set be 0.2, and the probability of the green pixel feature belonging to the forest in the overall population be 0.4. What is the probability that an image is a forest image given that the image contains the green colour feature?  a. 0.4  b. 0.5  c. 0.3  d. 0.6  Answer: (c). 0.3 |
|  | Consider the template and image array shown in below. Perform the template matching and show the result. **Template=[1, 0, 1; 1, 1, 1; 1, 0, 1]** **Image Array=[1, 0, 1, 1, 1 ; 0, 1, 1, 1, 1 ; 1, 0, 1, 1, 1 ; 1, 1, 1, 0, 1 ; 1, 1, 1, 1, 1]**  a. [8, 5, 7 ; 5, 5, 6 ; 8, 6, 6]  b. [8, 5, 7 ; 5, 5, 7 ; 8, 6, 7]  c. [8, 6, 7 ; 5, 5, 7 ; 8, 6, 7]  d. [8, 5, 7 ; 5, 5, 7 ; 8, 6, 6]  Answer: (d). [8, 5, 7 ; 5, 5, 7 ; 8, 6, 6] |
|  | The  points, Coordinates and  classes are given in the Figure. Classify the point (1,1) using Nearest Neighbour Technique with K=1. Refer the given Figure    a. Class 1  b. Class 2  c. Class 3  d. Class 4  Answer: (c). Class 3 |
|  | Which of the following tasks can be best solved using clustering.  a. Predicting the amount of rainfall based on various cues  b. Detecting fraudulent credit card transactions  c. Training a robot to solve a maze  d. Market basket Analysis  Answer: (b). Detecting fraudulent credit card transactions |
|  | The  points, Coordinates and  classes are given in the Figure. Classify the point (1,1) using Nearest Neighbour Technique with K=1. Refer the given Figure.    a. Class 1  b. Class 2  c. Class 3  d. Class 4  Answer: (d). Class 4 |
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|  | Consider the following shape and write the corresponding 8-directional codes. Perform Circular Normalization.  Use Differential chain code.  a. 2    2    2    2     6    2    2    6  b. 2   6   2   2   2   2    6    2  c. 2    2    2    2     6    2     2    4  d. 2    6    2    2     2    2     64  Answer: (b). 2   6   2   2   2   2    6    2 |
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