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Assignment Discussion Lesson 10

Question

1) What is sampling?

2) How to transform a 2D continuous signal into a discrete signal?

3) How to move geometrical objects?

4) What is linear interpolation?

5) Among 4 interpolation methods, in your opinion which one is the best? Why?

Answers

1). Sampling is the process of choosing and storing particular pixel values in order to transform a continuous image to discrete image.

2). To transform a 2D continuous signal into a discrete signal:

- Technological solution: digital camera and scanner for paper documents.

- Theoretical solution: Sampling theory

3). To move geometrical objects

- Firstly, we use translation move an object a fixed distance to a different position. It is one of the simplest transformations.

- Secondly, we use rotation rotates the object at particular angle θ (theta) from its origin.

- Finally, use scaling to changes the size of an object.

4). Linear interpolation is the technique commonly used for image resizing. By interpolating new pixel values, so the image can be scaled up or down while maintaining a smoother transition between the original pixels of image.

5). I think the third interpolation is the best method to implement Because it is new generation compared to the other methods and it provides high quality such as

- noise reduction.
- be able to covert blur to realistic.
- Provide smooth and more accurate result.
- Good for image with high frequency details.