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FRIDAY 7

1) Sampling & Quantization
In the sampling & quantization for digital processing to become suitable, an image function $f(x, y)$ must be digitized both spatially & in amplitude. A frame grabber & digitizer is used to sample & quantize the analogue video signal. In order to convert continuous data into digital form, there are 2 steps in which it is done.

→ Sampling.

→ Quantization.

SUNDAY 9

→ Sampling rate determines the spatial resolution of the digitized image, while the quantization level determines the number of grey levels in the digitized image. A magnitude of the sampled image is expressed as a digital value in image processing. This transition b/w continuous values of the image function & its digital equivalent is called Quantization. The no. of quantization levels should be high enough so that human perception of fine shading details in the image.

MONDAY 10

2) Image Pre-processing. In the pre-processing it involves operations on images at the lowest level of abstraction where both input & output images are intensity images. Like iconic images are of the same kind as the original data captured by the sensor with an intensity image usually represented by matrix of image function values. The aim of pre-processing is an improvement of the image data that suppresses unwanted distortions or enhances some image features important for further processing, although geometric transformation of images are classified among pre-processing methods. Image enhancement is the most appealing pre-processing technique.

TUESDAY 11

FRIDAY 14

③ Image analysis & Understanding
The field of digital image processing has been continuous & significant expansion in recent years. The usefulness of this technology can be seen in the day to day life. The advanced & wide availability of image processing hardware has further enhanced the usefulness of image processing. The image processing is used in the map field

such as → Agriculture, Autonomous vehicles, biometrics, facial recognition, (nowadays in every smartphone), Medical field, Remote Sensing is the acquisition of information about an object without making any physical contact with the object. So the traffic control also includes the use of CCTV & other means of monitoring traffic by local & state roadways authorities.

WEDNESDAY 19

Biometrics & Importance

Biometric is common to have physical & behavioural characteristics to authenticate a person.

There are several sectors which adapt biometric authentication based on person for secure transaction, airport entry etc. The kind of biometric varies from face, signature, palm prints, ear, to speech & many more.

THURSDAY 20

Types of Biometrics

- > DNA Matching. It is the identification of an individual using the analysis of segments from DNA.
- > Face Recognition.
- > Finger Geometry Recognition.
- > Hand Geometry Recognition.
- > Voice Identification.
- > Signature Recognition.
- > 3D face.

54) Image Representation
Image Representation is critical for successful detection and recognition of objects in a scene. This presents different contour representation schemes such as chain code, crack code & mid-crack code. After an image has been segmented into object & background regions, one intends to represent & describe them in characteristic features for computer processing during pattern recognition.

quantitative codes for efficient storage during image compression. The feature extraction techniques are devised to extract features of an image. This technique extracts high-level features needed in order to perform classification of objects under observation.