Texture

Summarization:

Objectives:What is texture and how can we regconize textures and synthesis it.

1. What is texture

   Texture is a feature used to partition images into regions of interest and to classify those regions.

Method of detection:

A. Structure Approach

A texture is a set of texture elements or texels occurring in some regular or repeated pattern. Due to the complexity of the image, extracting texels in real images may be difficult or impossible.

B. Statistical Approach

This type of method Characterize texture using statistical measures computed from grayscale intensities (or colors) alone. It is Less intuitive, but applicable to all images and computationally efficient and can be used for both classification of a given input texture and segmentation of an image into different textured regions. Some Simple Statistical Texture Measures are:

- Edge Density and Direction: We use an edge detector as the first step in texture analysis.

The number of edge pixels in a fixed-size region tells us how busy that region is. The directions of the edges also help characterize the texture

- Texture Energy Features: use texture filters applied to the image to create filtered images from which texture features are computed.

- Autocorrelation: Autocorrelation function computes the dot product (energy) of original image with shifted image for different shifts. It can detect repetitive patterns of texels and captures fineness/coarseness of the texture.

Texture Synthesis: