Session 8

HAAR Cascade

- These are a collection of many filters HAAR features like Edge, Line, or 4 rectangle feature.

- Each feature has some dark or some light regions.

- Since HAAR features are weak, they are combined to make strong features to differentiate between positive and negative images.

- $V[i,j] = \sum_m \sum_n I[m-i, n-j]H[i,j]$, this equation is used to calculate the pixel value but is a bit tedious to work upon so we use the concept below.

Integral Image Concept

- Integral image is a method to quickly calculate the sum of pixel values within a rectangular region of an image.

- Each element of the integral image at (x, y) stores the sum of all pixels above and to the left of (x, y).

- Using other pixel value sums, we can calculate the desired ones.