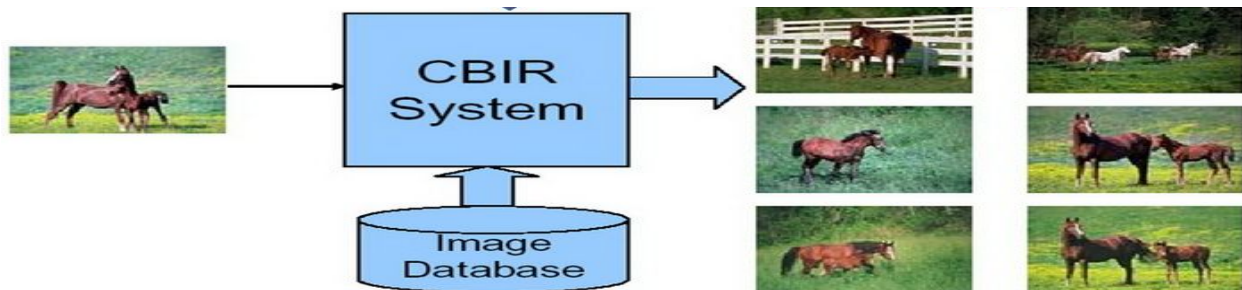


CONTENT-BASED IMAGE RETRIEVAL



A image is worth a thousand words.

In the current era of digital communication , the use of digital images has increased for expressing,sharing and interpreting information. While working with digital images,quite often it is necessary to search for a specific image for a particular situation based on the visual contents of the image. This task is easy if you are dealing with tens of images but it gets more difficult when the number goes from tens to hundreds to thousands, and the same content-based searching task becomes extremely complex when the number of images is in the millions.

There are two [image retrieval] frameworks: text-based and content-based. In text-based, the images are manually annotated by text descriptors, which are then used by a database management system to perform image retrieval. There are two disadvantages with this approach. The first is that a considerable level of human labour is required for manual annotation. The second is the annotation inaccuracy due to the subjectivity of human perception. To overcome the above disadvantages in text-based retrieval system, content-based image retrieval (CBIR) was introduced. **In CBIR, images are indexed by their visual content, such as color, texture, shapes.**

A very simple image retrieval system can be implemented by a special type of Neural Network, called an **autoencoder**. The way it proceeds is in an unsupervised way, i.e without looking at the image labels. Indeed, images are retrieved only by using their visual contents (textures, shapes,...).