Performance Efficiency of Quantization using HSV Colour Space and Vector Cosine Angle Distance in CBIR with Different Image Sizes

Abstract

Content Based Image Retrieval (CBIR) is an active research field in the past decades. Against the traditional system where the images are retrieved based on the key word search, CBIR systems retrieve the images based on the visual content. Even though some of the modern systems like relevance feedback system which improves the performance of CBIR systems exists, the importance of retrieving the images based on the low level features like Colour, Texture and Shape still determine the development of CBIR systems and cannot be undermined. Colour Histograms, Histogram Distance Measurements, Colour Spaces and Quantization play an important role in retrieving images based on similarities. In this paper, a novel method is presented for determining the efficiency of different quantization methods using HSV Colour space and measuring the Vector Cosine Angle distance of the images with different sizes of images like 256 X 256, 128 X 128, 64 X 64, 32 X 32, 16 X 16 and 8 X 8 pixels for efficient image retrieval and comparing the time utilized for retrieval in each sizes and measuring the Overall efficiency.
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Index Terms

Computer Science  Image Processing

Keywords

Content Based Image Retrieval (CBIR)  HSV Colour space  Vector Cosine Angle distance  quantization