

Abstract: An Image Retrieval System Using a New Graph Matching Approach

Sangcheol Park¹, Wanhyun Cho^{2,*}, Sunworl Kim³, and Soonyoung Park⁴

¹*Samsung Medison, Teheran-ro 108-gil, Gangnam-gu, Seoul 135-851 South Korea*

²*Department of Statistics, Chonnam National University, Gwangju 500-757
South Korea*

³*Radiation Health Research Institute, Korea Hydro & Nuclear Power Co., Ltd.,
Seoul, South Korea*

⁴*Dept. Electronic Engineering, Mokpo National University, Chonnam, South Korea
whcho@chonnam.ac.kr

Abstract

The pairwise graph matching scores between two images play a very important role in image retrieval systems. Accurate and efficient image matching is thus a key component in content-based image retrieval (CBIR) systems that use a graph matching algorithm. In this paper, we propose an image retrieval system using a new graph matching algorithm based on Bayes theorem and Dirichlet distribution. First, we explain this algorithm in detail. Then we represent an image as the graph using an MSER region detector to be used as vertexes and the SIFT descriptor to assign attributes to the edges of the graph. Then the correspondence between the two graphs is acquired using the proposed graph matching approach. Finally, the correlation coefficient criterion between the corresponding descriptor sets is calculated to be considered as the similarity measure of two images. The experimental results show that the proposed system effectively searches for relevant images with various projective distortions.

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