

# Image Annotation Based On Learning Genetic Algorithm

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**Abstract** With the increasing images of today's world, recovery of images is challenging for normal users. Most research in this field has arisen in last two decades. Until 1995, recovery of text-based images and after that recovery of content images was proposed. But recent research shows that there is a semantic distance between content image retrieval and semantic concepts understandable by humans. As a result, research in this area moved to establish a link between low-level features and high-level concepts. One way to create this connection is automatic image annotation that by using machine learning approach has tried to extract high-level concepts. In this thesis, by using the nature of genetic algorithm-based tree that in the space issue looks for the best crowd; looking for a classification tree with a higher detection rate. According to parallelism and segmentation of issue space to available leaves, this method tried to optimize the trees with the lowest and highest precision in identifying the node. It works by increasing the amount of cross-class and decreasing the amount of inner-class lead to separation of our classes and also tries the pushing crowd's genetic tree to the fewer nodes till the created tree get small. So, existence of tree based on genetic algorithm, in addition to increasing the efficiency and accuracy in recovery of concepts, can be effective in accelerating annotations speed. The effectiveness of the proposed method was tested on Corel-1K database. The results of testing revealed the superiority of proposed model than other methods of annotation.

**Keywords :** Keywords: image content retrieval, automatic image annotation, genetic algorithms

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