MINING USER NAVIGATION PATTERNS FOR EFFICIENT RELEVANCE FEEDBACK FOR CBIR

MR. SHINDE SURESH GOROBA
M.E. Scholar, Department of Computer Science & Engineering, Bharat Ratna Indira Gandhi College of Engineering, Solapur

PROF. C. M. JADHAV
Assistant Professor, Department of Computer Science & Engineering, Bharat Ratna Indira Gandhi College of Engineering, Solapur

ABSTRACT:

In today’s modernized world, content based image retrieval (CBIR) is considered as a bastion in image retrieval system. For making CBIR most suitable and productive technique, relevance feedback technique is used in conjunction with CBIR for producing more specific results which are obtained by taking feedback from user. However, existing relevance feedback-based CBIR methods usually request a number of iterative feedbacks for production of best search results, particularly in huge database. But this seems of no use in real world applications. In this paper, we propose a novel method, NRPF (Navigation pattern based relevance feedback method) is used for enhancing effectiveness and efficiency in CBIR while coping large scale image data. In terms of efficiency, the iterations of feedback will get reduced drastically reduced substantially by using the navigation patterns discovered from the user query log. Effectiveness of our proposed search algorithm NPRF Search makes use of the discovered navigation patterns and it also produces query refinement strategies in other three kinds, Query Point Movement (QPM), Query Expansion (QEX) and Query Reweighting (QR), to converge the search space toward user’s intention effectively. For this purpose NPRF systems are used to increasing quality of retrieved image. The experimental results show that the proposed approach NPRF is very effective in terms of precision and coverage. With short term relevance feedback, the navigation system algorithm will help in assisting the users in obtaining the best results. Moreover, the new search algorithm NPRF Search can bring out more accurate results than other well-known approaches.

KEYWORDS: Content-based image retrieval, relevance feedback, query point movement, query expansion, navigation pattern mining etc.

INTRODUCTION:

Multimedia contents are growing explosively and the need for multimedia retrieval is occurring more and more frequently in our daily life. Understanding the image has become difficult but that has raised the interest in this domain. Extracting valuable knowledge from a large-scale multimedia repository, so-called multimedia mining, has been studied by few researchers. Typically, in the development of an image requisition system, semantic image retrieval relies heavily on the related captions, class categories, file-names, and other manual descriptions, annotated keywords. Unfortunately, this kind of textual-based image retrieval suffers from two problems: high-priced manual annotation and inappropriate automated annotation.

PROPOSED SYSTEM:

The proposed algorithm NPRF Search performs the navigational-pattern-based search to match the user’s intention by merging three query refinement strategies. As a result, additional problems such as visual diversity and exploration convergence are solved. For navigation-pattern-based search, the hierarchical BFS based KNN is employed to narrow the gap between visual features and human concepts effectively. In addition, the involved methods for special data partition and pattern pruning also speed up the image exploration. The experimental results reveal that the proposed approach NPRF is very effective in terms of precision and coverage. With short term relevance feedback, the navigation system algorithm will help in assisting the users in obtaining the best results. Moreover, the new search algorithm NPRF Search can bring out more accurate results than other well-known approaches.

WORKING OF THE NRPF METHOD:

INITIAL QUERY PROCESSING PHASE:

Without considering the feature weight, this phase extracts the visual features from the original
query image to find the similar images. Afterward, the good examples (also called positive examples in this paper) picked up by the user are further analyzed at the first feedback (also called iteration 0 in this paper).

**IMAGE SEARCH PHASE:**

Behind the search phase, our intent is to extend the one search point to multiple search points by integrating the navigation patterns and the proposed search algorithm NPRF Search. Thus, the varied inclusion of the user’s interest can be successfully implied. In this phase, a new query point at each feedback is generated by the preceding positive examples. Then, the k-nearest images to the new query point can be found by expanding the weighted query. The search procedure does not stop unless the user is satisfied with the retrieval results.

**KNOWLEDGE DISCOVERY PHASE:**

Learning from users’ behaviors in image retrieval can be reviewed as one type of knowledge discovery. Consequently, this phase primarily concerns the construction of a navigation model by discovering the implicit navigation patterns from users’ browsing behaviors. This navigation model can provide image search with a good support to predict optimal image browsing paths.

**DATA STORAGE PHASE:**

The databases in this phase can be regarded as the knowledge marts of a knowledge warehouse, which store integrated, time-variant, and nonvolatile collection of useful data including images, navigation patterns, log files, and image features. The knowledge warehouse is very helpful to improve the quality of image retrieval.

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

- System: Pentium IV 2.4 GHz.
- Hard Disk: 40 GB.
- Monitor: 15 VGA Color.
- Mouse: Logitech.
- Ram: 512 MB.

**SOFTWARE REQUIREMENTS:**

- Operating System: Windows xp, Linux
- Language: Java1.4 or more
- Technology: Swing, AWT

**CONCLUSION:**

The major difference between our proposed approach and other contemporary approaches is that we approximate an optimal solution to resolve the problems existing in current RF such as redundant browsing and exploration convergence. To this end, the approximated solution takes advantage of exploited knowledge (navigation patterns) to assist the proposed search strategy in efficiently hunting the desired images.

**REFERENCES:**

7) Y. Ishikawa, R. Subramanya, and C. Faloutsos, “Mind Reader: Querying Databases through Multiple


