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A system for visual information retrieval in images, radiology reports and the medical literature.

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PURPOSE/AIM

The enormous amount of visual data in PACS and the medical literature grows exponentially, also with the appearance of new imaging methods. Most current information search tools in radiology do not fully exploit new technologies and often allow only patient-based access. In this study, the medical image search prototype of the KHRESMOI project is presented. The application aims to assist radiologists when an unknown pathology is met during clinical work and in searches related to teaching and research.

CONTENT ORGANIZATION

The system allows searching for visual information by combining content-based image retrieval (CBIR) and text retrieval using also semantics technology. It includes, among others, searching by marking ROIs in 3D images, relevance feedback and links between 3D results and 2D images published in medical articles. They are demonstrated on a set of radiology reports with 5TB of PACS images and articles of the biomedical literature with over 1.5 million images. Recent user tests reported that radiologists quickly adapted to the new tools and showed intention in using them in practice.

SUMMARY

The prototype of a novel medical image search system is demonstrated. The goal was to integrate state-of-the-art information retrieval techniques into a medical application to be used by radiologists to improve their visual information search possibilities.