Image Retrieval in Medicine: Motivations, Methods, and Results of the ImageCLEF medical image retrieval task

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Images have always been an important aspect of medical care and research. Images are increasingly available in digital formats in patient record systems, on-line references, and other sources. Despite their proliferation, we know little about how images are used or searched for by medical professionals. Whereas text (e.g., document, article, Web page, etc.) retrieval has been widely studied and is well understood, our knowledge of image retrieval is considerably less advanced. In this panel, we will describe the ImageCLEF medical image retrieval challenge evaluation that aims to rectify that deficit by developing realistic test collections to assess the efficacy of image retrieval systems and algorithms.

William Hersh will lead off the panel with a general discussion of evaluation of search systems, both text-based and image-based.

Henning Müller will next describe the state of the art in medical image retrieval and the organization of the ImageCLEF medical task.

Paul Clough will describe the state of the art for image retrieval in other (non-medical) domains, what research results in those domains show, and how they might inform medical image retrieval.

Jayashree Kalpathy-Cramer will present some recent research on image modality detection and query categorization that improve results from image retrieval experiments.

References:

ImageCLEF medical image retrieval task Web site: http://ir.ohsu.edu/image/

Hersh WR, Muller H, Jensen JR, Yang J, Gorman PN, Ruch P. Advancing biomedical image retrieval: development and analysis of a test collection. J Am Med Inform Assoc. 2006 Sep-Oct;13(5):488-96.

Keywords

Evaluation, Image retrieval, Test collection