

Combining Images and Text for imageCLEF 2004

Toward a Single Multimodal Proposal for Content-Based Cross Language Image Retrieval

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PURPOSE: given a set of medical images from a case, find similar cases which contain both case notes and images

QUERIES: 26 example images from the document collection

COLLECTIONS: ~9,000 anonymised medical images from 2000 cases (Müller and al. 2004)

METHODS:

- Content-based retrieval systems
 MedGIFT: <http://www.sim.hcuge.ch/medgift/> - VIPER/GIFT <http://www.gnu.org/software/gift/>
- Using Images as Multimodal interlingua / Multilinguality at Document-level
- Translation methods and Multilingual Terminology (Ruch 2004)
- Combining Heterogeneous Modalities (mixture models) / Multimodal Query Expansion and Feed-back
- Ad hoc/Corrupted Collection IR: easyIR, <http://lithwww.epfl.ch/~ruch/softs/softs.html> (Ruch and al. 2004)

SAMPLE:

<Case>



<Images> <im1> </im1> <im2> </im2> <im3> </im3> </Images>

→Diapo 2 : images axiales en pondération T1 avant et après injection de contraste IV : l'intensité de signal du contenu du kyste est plus intense que *lieau* et moins intense que la graisse. Ce signal correspond à du mucus. *Liépaississement* pariétal sur le bord droit du kyste est irrégulier et évoque une végétation, typique de cancer ovarien. La végétation devient surtout bien visible après injection de produit de contraste car elle montre un rehaussement de signal. Il ne *siagit* donc pas *diun* caillot *intrakistique*, mais d'une anomalie solide. Cystadénocarcinome mucineux...

→No consensus whether one technique is better than the others in differentiating benign from *malignants* masses.

<References>Einarsdottir H. MR imaging of lipoma and liposarcoma Acta Radiol 1999, 40 ; 64-68...</References>

</Case>

SAMPLE RESULTS: 100% Precision at 1 vs ... Recall Levels

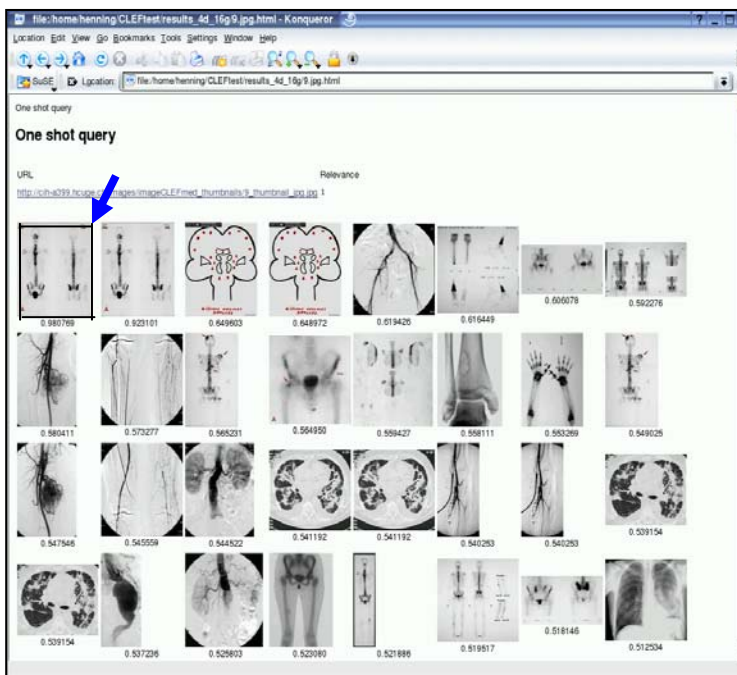
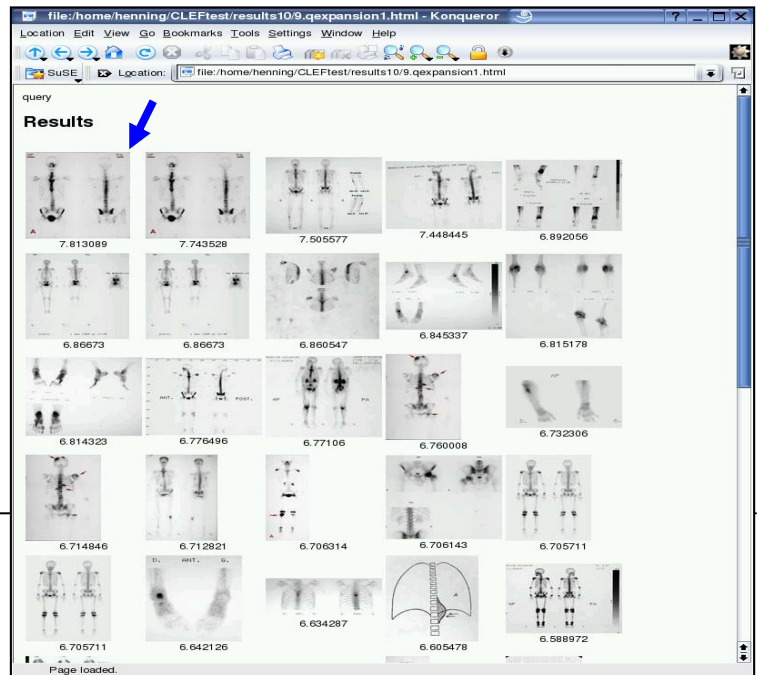


Image Only



+ Case-based Feedback: Minimal Text Commitment (80/20)

References

H Müller, A Rosset A Geissbühler and F Terrier, A reference data set for the evaluation of medical image retrieval systems, *Computerized Medical Imaging Graphics*, 2004.

P Ruch. *Query Translation by Text categorization*. COLING 2004.

P Ruch, C Chichester, G Cohen, G Coray, F Ehrler, H Ghorbel, H Müller, V Pallotta. Report on the *TREC* Experiment: Genomic Track. 2004.

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<http://ir.shef.ac.uk/imageclef2004/index.html> and <http://www.clef-campaign.org>