



ImageCLEF 2005



Caption and/or Content-Based Cross Language Image Retrieval

First Announcement and Call for Participation

Ad hoc bilingual retrieval task

Goal: given a multilingual statement describing a user need, find as many relevant images as possible from an image collection. At its simplest this is a bilingual query translation task from the source to target language aimed at encouraging participation from newcomers to CLIR and CLEF.

Image analysis: not required, but can augment text-based retrieval methods

Queries: 25 textual descriptions in a range of languages including Dutch, Italian, Spanish, French, German, Chinese (plus example image(s)) to represent a range of CL and image search requests. We plan to expand the query languages to Japanese, Danish, Swedish, Finnish Russian and Arabic.

Collection: ~30,000 historic photographs with British English semi-structured captions. We are also planning to translate the captions into a range of languages using Machine Translation.



Challenges: short multilingual queries, short caption texts (~50 words), semi-structured captions in British English, images and captions of varying quality and content.

Aims: to compare methods of query translation, query expansion, use of text and content-based methods separately or combined, retrieval models, indexing methods.

Interactive task

Goal: to investigate how native speakers of languages other than English interact with a CL image retrieval system in two scenarios: (1) an ad hoc retrieval task, and (2) a known item search.

Image analysis: not required, but can augment text-based retrieval methods

Collection: as used in the ad hoc retrieval task.

Aims: to explore areas such as: browsing support, automatic and interactive query expansion, relevance feedback, query formulation using both image and text, presentation of search results (e.g. image only or image and caption, clustering images, categorising results), and failure support.

Organisers

Paul Clough, Mark Sanderson

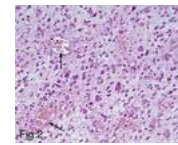
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Medical retrieval task

Goal: given example medical image(s) from a case, find similar images and cases. This task simulates a medical practitioner needing to find cases similar to the one already being worked on which can be important for case-based reasoning or evidence-based medicine.

Image analysis: required for an initial retrieval.

Queries: 25 example images from the casimage document collection.



Collection: ~9,000 anonymised medical images covering more than 2000 cases from the University Hospitals Geneva (<http://www.casimage.com>) will be combined with other radiology teaching files accessible on the Internet. Case notes in French and English, in varying quality, are encoded in XML. If possible, other languages will be added.

Challenges: combining text and content-based methods after an initial visual search, domain-specific medical terminology, notes of varying quality in mixed target languages, high cost involved in returning wrong images.

Aims: to compare methods of content-based retrieval systems, to investigate how case notes can be exploited after an initial visual search, to compare translation methods, retrieval model, indexing methods and query expansion.



Automatic image annotation

Goal: given a categorized set of training data, investigate how well systems can classify unknown images automatically. The code currently exists in German and English but translations are planned. Thus, it can be used for automatic image annotation in several languages.

Image analysis: Required for retrieval

Collection: IRMA database of the Aachen University of Technology containing 10,000 classified images (<http://www.irma-project.org>)

Aims: to find out how well current techniques can identify images based on anatomic region and viewing direction. This can be used for multilingual image annotations as well as for DICOM header corrections.

Organisers

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ImageCLEF 2005



Why cross language image retrieval?

Retrieval from an image collection offers distinct characteristics from one in which the document to be retrieved is natural language text. For example, the way in which a query is formulated, the methods used for retrieval (e.g. based on low-level features derived from an image, or based on associated textual information such as a caption), the types of query, how relevance is assessed, the involvement of the user during the search process, and fundamental cognitive differences between the interpretation of visual versus textual media. Within CLEF, the problem is further complicated by user queries being expressed in a language different to that of the document collection or by multilingual collections. This requires crossing the language barrier by translating the collection, the queries, or both into the same language. As multimedia collections grow and more organisations become responsible for managing large image repositories, this track of ImageCLEF aims to address some of these problems.

Our aims

We envisage that ImageCLEF will appeal to both commercial and academic research communities including: CLIR, image retrieval, machine learning, and user interaction. The main aims of the ImageCLEF campaign are:

- (1) to promote and initiate international research for cross language image retrieval,
- (2) to further our understanding of the relationships between multilingual texts and images for IR,
- (3) to explore various ways of using machine learning techniques to optimize visual and multilingual retrieval,
- (4) to create useful resources for CL image retrieval to scientific communities in the whole.

Achievements so far

ImageCLEF began as a pilot experiment in 2003 with only the bilingual ad hoc task. We built a test collection using a collection of historic photographs from St Andrews University Library (<http://www-library.st-andrews.ac.uk/>) and 50 example queries. Four participants entered ImageCLEF exhibiting a range of text-based retrieval and query enhancement methods including thesaurus-based query expansion and transliteration.

In 2004, medical and interactive retrieval tasks were added to ImageCLEF. The strong participation of a total of 18 research and commercial groups shows the need for an evaluation event in multilingual cross-media indexing and retrieval. A large variety of techniques from query expansion, manual relevance feedback, language detection and combinations of visual and textual attributes for retrieval were used. Results show that in visual as well as textual retrieval tasks, the best performances were obtained when combining visual and textual cues for the retrieval.

ImageCLEF 2005

At ImageCLEF 2005 we will be running ad hoc bilingual retrieval as an entry level task for newcomers to CLIR and CLEF, a medical retrieval task, an interactive CL image retrieval task and a new automatic image annotation task. Participants can enter as many tasks as they want and are free to use any methods they want, although we would like to encourage interest from participants combining both CL and image-based techniques as well as machine learning techniques based on last year's ground truth data. Please note that **image analysis is not required for all tasks** and that a default visual image retrieval system will be made available for participants.

Registration

You can register for ImageCLEF 2005 by contacting Carol Peters (carol.peters@isti.cnr.it), the main coordinator for CLEF. For more specific information about any aspect of ImageCLEF or the tasks, please contact Paul Clough (p.d.clough@sheffield.ac.uk) or Henning Müller (henning.mueller@sim.hcuge.ch).

The ImageCLEF 2004 website

(<http://ir.shef.ac.uk/imageclef2005/index.html>)

will be the main source of information about the tasks and through which the data, guidelines, resources and further information will be published. We also have an ImageCLEF mailing list (imageclef@sheffield.ac.uk) through which we update participants with track information. Contact Paul Clough to be added to this list. More information about CLEF can be found at: <http://www.clef-campaign.org>

Schedule for CLEF 2005

Registration opens	15 January 2005
Data release	from February 2005
Topics release	from 15 March 2005
Runs submitted	15 May 2005
Release of results	from 15 July 2005
Workshop papers deadline	15 August 2005
Workshop	21-23 September 2005