



Projects and Thesis in Image Retrieval, Selection, Summarization

Nowadays, taking pictures has become effortless and possible nearly everywhere thanks to the wide diffusion of digital photography. This makes us easily ending up with hundreds of photos, for example, when returning from a holiday trip. Photos are also taken of more mundane motives, such as food or everyday life, further increasing the number of pictures to deal with. A considerable amount of research is being conducted to summarize and make large personal collection enjoyable [1, 2, 3, 4]. Moreover, web search engines (Google, Bing, etc.) as well as photo management software (Google Photos, Apple iPhotos, Microsoft Photo App, Dropbox Carousel, etc.) are continuously improving their search and annotation capabilities for images.

Within this context, we offer projects and thesis on the following topics:

- Exoticism of images and its exploitation for image retrieval and album summarization
- Recipient-aware album summarization and photo selection
- Privacy-aware retrieval: identification and handling of sensitive images
- Eventfulness of images and its exploitation for image retrieval and summarization
- Enriching news articles with descriptive and contextualizing images
- Joint concept detection: mining relationships and co-occurrences among concepts in images

Requirements

- Experience with programming languages (Java)
- Basic knowledge of Machine Learning
- Experience with Machine Learning tools (e.g. Weka) is a plus

Contacts

If you are interested or have questions, please contact: Andrea Ceroni (email: ceroni@l3s.de).

References

- [1] P. Sinha, S. Mehrotra, and R. Jain. Summarization of personal photologs using multidimensional content and context. In Proceedings of ICMR '11, 2011.
- [2] T. Walber, A. Scherp, and S. Staab. Smart photo selection: Interpret gaze as personal interest. In Proceedings of CHI '14, 2014.
- [3] B.-S. Seah, S. S. Bhowmick, and A. Sun. Prism: Concept-preserving social image search results summarization. In Proceedings of SIGIR '14, 2014.
- [4] A. Ceroni, V. Solachidis, C. Niederée, O. Papadopoulou, N. Kanhabua, and V. Mezaris, "To keep or not to keep: An expectation-oriented photo selection method for personal photo collections," in Proceedings of ICMR '15, 2015.