

Image Region Labeling by Gaze Information during Search and Tagging Activities

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Abstract

Tagged image regions are a valuable meta information which can support users various activities such as in image search. In our previous work [1, 2], we have shown that it is possible to annotate image regions by means of gaze information in a controlled experiment with an accuracy of about 70%. Tagging of regions on the fly, i. e., while the user is annotating images or is searching for images is subject to this experiment. It consists of three parts: tagging oral, tagging written, and search. The experiment application is inspired by standard tagging and search pages as found online and used by millions of users. In the search, the user is asked to find a photo satisfying a given task (e. g., search for a red car). The tagging is either done by speaking the tag into a microphone or by typing it. The goal is to link the given tags respectively search queries to image regions obtained from automatic image segmentation.

24 subjects have participated in the experiment. The images used in our experiment are taken from data sets offering ground truth region annotations. Therefore, we are able to evaluate our approach by comparing the gaze-based annotations to this ground truth data. First analysis results will be presented at the conference.

References

- [1] Walber, T., Scherp, A., Staab, S. Identifying Objects in Images from Analyzing the Users' Gaze Movements for Provided Tags. *Advances in Multimedia Modeling*, (2012).
- [2] Walber, T, Scherp, A., Staab, S. Can you see it? Two Novel Eye-Tracking-Based Measures for Assigning Tags to Image Regions. In: *Proc. of MMM-2013 - 19th Int. Conference on Multimedia Modeling*,(2013).