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IEEE Transactions on Multimedia
Special Issue on Learning Semantics from Multimedia Web Resources

Summary

Rapid advances in technology for capturing, processing, distributing, storing, and presenting visual data has resulted in a proliferation of multimedia in the World Wide Web. This is reflected in the success of many social websites, such as Flickr, Youtube, and Facebook, which dramatically increased the volume of community-shared media, including images and videos. These websites allow users not only to create and share media but also to rate and annotate them. Thus significant amounts of meta-data associated with the media, such as user-provided tags, comments, geo-tags, capture time, and EXIF information, are available in the Web. What are needed are methods to organize and understand these data.

Although the multimedia research community has widely recognized the importance of learning effective models for organizing and understanding, it has failed to make rapid progress due to the insufficiency of labeled data, which typically comes from users in an interactive labor-intensive manual process. In order to reduce this manual effort, many semi-supervised learning or active learning approaches have been proposed. Nevertheless, there is still a need to manually annotate a large set of images or videos to bootstrap and steer the training. The rich meta-data associated with the media in the Web offer a way out. If we can learn the models for semantic concepts effectively from user-shared media by using their associated meta-data as training labels, or if we can infer the semantic concepts of the media directly from the data in the Internet, the manual effort in multimedia annotation can be reduced. Consequently, semantic-based multimedia retrieval can greatly benefit from community contributions.

There is, however, a problem in using the associated meta-data as training labels: they are often very noisy. Thus how to remove the noise in the training labels or how to handle the noise in the learning process are important research topics.

Besides modeling media (e.g. images or video), the Web is an incredible resource for modeling users, through the aggregation of users' traces on social media sites (e.g. the images they upload, the tags they use, the people whose content they comment on). So in addition to modeling media only, modeling people's behaviors or events is also important.

Recently, more and more research effort has been dedicated to the aforementioned challenges and opportunities. Particularly within the last year, many papers on this topic have been published in ACM MM, SIGIR, WWW and CVPR. Therefore, we propose a special issue named *Learning Semantics from Multimedia Web Resources*. The goals of this special issue will be threefold: (1) introduce novel research in learning from resources in the Internet; (2) survey on the progress of this area in the past years; (3) discuss new applications based on the newly learned models.

Scope:

Topics of interest include (but are not limited to):

- Novel learning methods that learn multimedia semantics from the web media using the meta-text as training labels.
- Regularization strategies to handle the noise in the meta-text for the learning process.
- Inferring semantics of multimedia data directly from the media in the Web.
- Web media-based knowledge mining, such as building a lexicon/ontology from tags, extracting the relations among the semantic concepts, and learning the similarity metrics.
- Web media analysis and organization, including grouping, classification, indexing, and navigation.
- Web media tagging, including new tagging interfaces, tag recommendation, tag classification, tag correction, and automatic tagging.
- Training set construction from the multimedia resources in the web.
- Multimedia benchmark dataset creation from the web media, such as semi-automatic label correction with active learning.
- Social media user and community modeling to improve semantic relevance of tags.

Important Dates:

Paper submission due:	16-June-2011
First-round acceptance notification:	18-Sep-2011
Revision Due:	16-Oct-2011
Second-round review completed:	1-Dec-2011
Final manuscript due:	26-Jan-2012
Due to Production date:	March 2012
Publication date:	June 2012

Submission Procedure:

Submissions should follow the guidelines set out by IEEE Transaction on Multimedia (http://www.ieee.org/organizations/society/tmm/author_info.html). Prospective authors should submit high quality, original manuscripts that have not appeared, nor are under consideration, in any other journals. Manuscripts should be submitted electronically through the online IEEE manuscript submission system at (<http://tmmieee.manuscriptcentral.com/>).

Organization:

All papers will be reviewed by at least three independent reviewers. Invited papers will be solicited first through white papers to ensure the quality and relevance to the special issue. The accepted invited papers will be reviewed by the guest editors and expect to account for about one fourth of the papers in the special issue.

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