

Héritier, M., Gagnon, L. and Foucher, S. "Places Clustering in Videos via Latent Aspects Modeling of SIFT Matches" *IEEE Trans. on Circuits and Systems for Video Technology*, 19 (6) June 2009 : 832-841.

**Abstract**

An improved unsupervised classification method to extract and link places features and cluster recurrent physical locations (key-places) within a movie is presented. Our approach finds links between key-frames of a common key-place based on the use of a probabilistic latent space model over the possible local matches between the key-frames image set. This allows the extraction of significant groups of local matching descriptors that may represent characteristic elements of a key-place. An exhaustive evaluation of our approach was conducted on in-house and public image datasets, as well as on full-length movies. Results revealed that our method is very efficient for near-duplicate object/background detection with weak overlap. Performance measurements on full-length movies indicate a recognition rate of about 75% on the key-places clustering with a false alarm of approximately 2%.

**Index Terms**

Scene categorization, scene matching, near-duplicate detection, video indexing, video description