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| Title | AutoRet: A self-supervised spatial recurrent network for content-based image retrieval | | |
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| Abstract |  |
| Image retrieval techniques are becoming famous due to the vast availability of multimedia data. The present image retrieval system performs excellently on labeled data. However, often, data labeling becomes costly and sometimes impossible. Therefore, self-supervised and unsupervised learning strategies are currently becoming illustrious. Most of the self/unsupervised strategies are sensitive to the number of classes and can not mix labeled data on availability. In this paper, we introduce AutoRet, a deep convolutional neural network (DCNN) based self-supervised image retrieval system. The system is trained on pairwise constraints. Therefore, it can work in self-supervision and can also be trained on a partially labeled dataset. The overall strategy includes a DCNN that extracts embeddings from multiple patches of images. Further, the embeddings are fused for quality information used for the image retrieval process. The method is benchmarked with three different datasets. From the overall benchmark, it is evident that the proposed method works better in a self-supervised manner. In addition, the evaluation exhibits the proposed method’s performance to be highly convincing while a small portion of labeled data are mixed on availability.  Keywords: deep learning; image retrieval; self-learning; convolutional neural network | |