

Call for Papers IET Computer Vision

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Special Issue: Unsupervised feature learning for vision

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Hand-designed features such as LBP, SIFT and HOG have gained great success during the past years in various vision tasks such as object recognition, target tracking and action recognition. However, these only capture low-level textural or edge information and it has proven difficult to design features that effectively capture mid-level cues (e.g. edge intersections) or high-level representation (e.g. object parts). Recently, developments in machine learning, known as "Deep Learning", have shown how hierarchies of features can be learned in an unsupervised manner directly from data.

The learned features are capable of extracting mid-level or high-level information. More importantly, these features are learned from the data, which are more effective for the specific task at hand. Some preliminary experimental results in various tasks have validated their powerful ability, which attracts increasing interest in the computer vision community. Very recently, a huge number of efforts have been devoted to develop novel and more effective unsupervised feature learning methods.

The primary purpose of this special issue is to organize a collection of recently developed unsupervised feature learning models for various vision tasks. The special issue is intended to be an international forum for researchers to report the recent developments in this field in an original research paper style.

The topics include, but are not limited to:

- Energy-based models and their fast optimization solutions
- Form and motion factorization from video data
- Invariance feature learning
- Semantic feature learning
- Deep learning model on large-scale data
- Visualization of the learned features
- Multi-modal feature learning
- Real-time vision applications

All submissions are subject to the journal's peer-review procedures. The authors should follow the journal's Author Guide at <http://digital-library.theiet.org/journals/author-guide> when preparing papers for submission to the Special Issue.

Important dates:

Submission deadline:
28 Aug 2014

Publication date:
Jun 2015

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