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IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY
Special Issue on Deep Learning for Visual Surveillance

Visual surveillance has been long researched in the computer vision community. Focus on this topic derives from not only the theoretical challenge of the related technical problems, but also the practical effectiveness in real world applications. Particularly, with the popularity of large scale visual surveillance and intelligent traffic monitoring systems, videos captured by the static and dynamic cameras are required to be automatically analyzed. Recently, with the surge of deep learning, research on the visual surveillance under the paradigm of data driven learning reaches a new height.

Although there has been significant progress in this exciting field during the past years, many problems still remain unsolved. For instance, how to gather training samples for data intensive deep learning methods? How to adapt generic deep learning prototypes to specific deployments? How to compromise between online training computational load and classification accuracy?

In order to pursue first-class research outputs along this direction, this special issue aimed at inviting the original submissions on recent advances in deep learning based visual surveillance research and foster an increased attention to this field. It will provide the image/video community with a forum to present new academic research and industrial development in deep learning applications. The special issue will emphasize the incorporation of state-of-the-art deep learning methods such as Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Deep Bayesian Networks (DBN), deep Restricted Boltzmann Machines (RBN), Long Short-Term Memory (LSTM), autoencoders, and their graphical model, sparse coding, and kernel machine based variants.

Topics include, but are not limited to:

- Deep feature learning for surveillance video
- Deep learning to detect faces and objects of interests in surveillance settings
- Deep learning based face and object recognition
- Object tracking and motion analysis in surveillance settings based on deep learning techniques
- Scene analysis and understanding in the context of deep learning paradigm
- Video summarization and synopsis based on learned prior knowledge using deep learning
- Surveillance information retrieval using deep learning based features and architectures
- Action, activity, and abnormal activity detection and recognition using deep methods
- Deep learning based human interaction and crowd/group dynamics
- Surveillance event analysis with deep learning techniques
- Deep learning strategies for the fusion of multi-modal/multi-camera surveillance videos
- Domain adaptation using deep learning
- Hardware and network architectures for deep learning in visual surveillance applications,
- Performance evaluation and benchmark datasets for deep learning based visual surveillance

Important Dates

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Revised Paper Submission:	June 15, 2017
Revised Paper Decision:	July 30, 2017
Publication Date:	January 2018

Manuscript Submissions and Reviewing Process

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