



CALL FOR PAPERS

Pattern Recognition Letters

Special Issue on Extracting Semantics from Multi-Spectrum Video

Aim and Scopes:

Recent advances in imaging, networking, data processing and storage technology have resulted in an explosion in the use of multi-spectrum image/video in a variety of fields, including video surveillance, urban monitoring, cultural heritage area protection and many others. The integration of videos from multiple channels can provide complementary information and therefore increase the accuracy of the overall decision making process. A typical example is the usage of a hybrid vision system for video surveillance application, which usually consists of omnidirectional, perspective and infrared cameras. Such a system takes advantage of a large view scope from omnidirectional cameras, richer textural information from perspective cameras and better image quality in the dark environment from infrared cameras. However, the benefit of multi-spectrum video fusion always comes with a certain cost and complexity in the analysis process due to the fact that the involved modalities have different characteristics. One of the challenges of such systems is that they need to strike a balance between two opposing requirements. On the one hand, the more pronounced the independence between the different modalities, the more complementary the information that can be gleaned from each of them. On the other hand, there need to be a sufficient amount of correlation in order to be able to link features in one modality to that in the others. To effectively utilize multi-spectrum images/videos in a system, considerable research has been developed to solve various problems in this field during the last decade. Unfortunately, most existing techniques are still heuristic-based, which have not yet been *smart* and *efficient* enough. For example, a widely used approach is to assign an empirical weight for each individual modality, and the final decision is made based on summing up the decision from each modality. It lacks theories to answer several fundamental questions: 1) what are the best modality in certain situations? 2) How can we measure the dependency among the videos from different channels? And, 3) how can we optimally fuse information from multiple modalities?

This special issue aims at capturing the latest advances of the research community working on multi-spectrum video analysis. We are soliciting original contributions and encouraging the work for (1) novel fundamental techniques, and (2) showcasing robust systems to treat emerging applications. Topics of interest include, but are not limited to:

- Multi-spectrum video acquiring
- Multi-spectrum video synchronization
- Image registration and transformation
- Feature extraction and description
- Multi-spectrum video visualization
- Multi-view video processing
- Sampling and interpolation
- Data fusion
- Decision for semantic interpretation

- Classification and pattern recognition
- Smart camera network
- Multi-spectrum video streaming
- Emerging application

Important Dates:

Submission of full papers	1. December, 2011
Notification to authors	1. April, 2012
Publication data	December, 2012 (tentative)

Submission of Manuscripts

Prospective authors should visit http://www.elsevier.org/wps/find/journaldescription.cws_home/505619/authorinstructions for information on paper submission. Authors must submit their papers electronically by using online manuscript submission at: <http://ees.elsevier.com/patrec>.

To ensure that all manuscripts are correctly included into the special issue, it is important that authors select the acronym "ESMSV" of this special issue when they reach the "Article Type" step in the submission process.

All papers will be rigorously refereed and will undergo a standard review process of PRL. The length of your manuscript should not exceed 7500 words, including maximal 10 figures/tables.

Submission Period

The Elsevier Editorial System will be set to allow authors to upload their manuscripts to ESMSV in the period 15. Oct, 2011 – 1. Dec, 2011.

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