CALL FOR PAPERS

Pattern Recognition Letters

Special Issue on

Novel Pattern Recognition-Based Methods for Reidentification in Biometric Context

The object reidentification problem is to authenticate an object across multiple disjoint fields of view. Towards that end, once the object has been detected and initialized at one location, one seeks to match it with a feasible set of candidates detected at other locations and over time. Standard pattern recognition methods can be exploited, including Bayesian analysis, in order to cope with the dynamic nature of the problem. In the context of biometrics, advanced video (data stream) surveillance applications (including sensor networks) for airport and subway surveillance require the ability to reidentify an individual. Face- and gait- based recognition are especially promising biometrics for reindentification, since they can operate at a distance and do not require a detailed and/or high resolution image of the subject and/or its biometric traits. Two core aspects this special issue will address are: (1) *registration* to establish correspondences between parts of a pair of images; and (2) invariant template representations suitable to compare the corresponding parts. The invariance requirement comes from the inherent variability in the data capture process with respect to both sensors and subjects, e.g., PIE (pose, illumination, and expression).

The methods proposed are expected to take advantage among others of (a) recognition and tracking are complementary to each other; (b) temporal reasoning and spatial layout of the different cameras can be used for pruning the set of candidate matches; and (c) the brightness transfer function between different cameras can be used to track individuals over multiple non-overlapping cameras. Further help to handle image variability comes from on-line evidence accumulation characteristic of closed –loop control, e.g., explore and exploit using sequential importance sampling (SIS). Learning and adaptation using both labeled and unlabeled data using statistical learning, in general, and semi-supervised learning provide further help with reidentification. One particular earning strategy of interest is co-training, where only a small amount of labeled data is required to learn and the use of unlabeled data improves performance over time.

The solution to the reidentification problem would make a significant contribution to wide range of biometric applications. Reidentification (reverification) of user's identity is of paramount importance for high security applications, when single and static verification might not ensure that unauthorized users do not gain control of a communication channel (e.g. a mobile connection) during a critical service. The methods proposed should be as unobtrusive as possible and require minimal interaction from the user. Reidentification has also the potential to foster dynamic multibiometric environments. Currently, multibiometric systems usually implement static architectures, which do not change over time. On the other hand, the progressive addition of new modules would contribute to better recognition performance. The addition of a new module to a fully operational system would usually require its preliminary setup and training. This involves a full enrolling and labelling phase. A robust surveillance strategy that has access to and exploits reidentification could mostly operate in an unsupervised fashion and without explicit annotation System – like methods are especially encouraged.

We invite original contributions that provide novel solutions to challenging problems. Submitted papers can address theoretical or practical aspects of progress and directions in biometrics research.

Topics of interest include, but are not limited to:

- Face reidentification in video surveillance and sensor networks
- Gait-based reidentification
- Latent ant live fingerprint reidentification
- On-line learning from data streams for biometric reidentification
- Automatic annotation / labeling of biometric templates
- Biometric identity management
- Co-training and reidentification
- Metrics, protocols, and performance evaluation
- Multibiometrics, data fusion, and reidentification
- Reidentification for high security applications
- Reidentification in dynamical systems

SUBMISSION OF MANUSCRIPTS

Authors are encouraged to submit their papers electronically by using online manuscript submission at: http://ees.elsevier.com/patrec/

To ensure that all manuscripts are correctly identified for inclusion into the special issue, it is important that authors select the acronym "BIOCON" 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 very competitive selection process. The length of your manuscript should not exceed 7000 words, plus the necessary figures and tables.

SUBMISSION PERIOD

The Elsevier Editorial System (http://ees.elsevier.com/patrec/) will be set in due time to allow authors to upload their contributions to the special issue in the period **June 15, 2011 - July 15, 2011**.

IMPORTANT DATES

Manuscript submission deadline:	~~June 15, 2011~~ ***** July 15, 2011 extended deadline *****
First notification:	September 15, 2011 *
Revised manuscript submission:	November 15, 2011 *
Notification of final decision:	November 30, 2011 *
Publication of the special issue:	2012 *

* tentative dates

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