

Call for Papers

INTERNATIONAL JOURNAL OF PATTERN RECOGNITION AND ARTIFICIAL INTELLIGENCE

Special Issue on

Facial Image Processing and Analysis

International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI) is seeking original and unpublished manuscripts for a Special Issue on *Facial Image Processing and Analysis*, scheduled for publication in 1st Quarter 2009.

Face recognition systems are progressively becoming popular as means of extracting biometric information. Face recognition has a critical role in biometric systems and is attractive for numerous applications including visual surveillance and security. Because of the general public acceptance of face images on various documents, face recognition has a great potential to become the next generation biometric technology of choice. Face images are also the only biometric information available in some legacy databases and international terrorist watch-lists and can be acquired even without subjects' cooperation.

Though there has been a great deal of progress in face detection and recognition in the last few years, many problems remain unsolved. Research on face detection must confront with many challenging problems, especially when dealing with outdoor illumination, pose variation with large rotation angles, low image quality, low resolution, occlusion, and background changes in complex real-life scenes. The design of face recognition algorithms that are effective over a wide range of viewpoints, complex outdoor lighting, occlusions, facial expressions, and aging of subjects, is still a major area of research. Before one claims that the facial image processing / analysis system is reliable, rigorous testing and verification on real-world datasets must be performed, including databases for face analysis and tracking in digital video. 3D head model assisted recognition is another research area where new solutions are urgently needed to enhance robustness of today's recognition systems and enable real-time, face-oriented processing and analysis of visual data. Thus, vigorous research is needed to solve such outstanding challenging problems and propose advanced solutions and systems for emerging applications of facial image processing and analysis.

This special issue is particularly interested in recent progress in face detection and recognition that explores emerging themes such as digital video, 3D, near infrared, occlusion and disguise, long-term aging, and/or the lack of sufficient training data. Submitted articles must not have been previously published and must not be currently submitted for publication elsewhere. Topics of interest include, but are not limited to, the following:

New sensors or data sources:

- 3D-based face recognition
- Near infrared imaging for face recognition
- Video-based face recognition

Preprocessing:

- Image preprocessing for face detection / recognition
- Color-based facial image processing and analysis
- De-blurring and super-resolution for robust face detection / recognition

Face and feature detection:

- Face detection for best-shot selection
- Facial feature detection and extraction
- 3D head modeling and face tracking

Methods:

- Subspace / kernel methods for face recognition
- Non-linear methods for face modeling
- Bionic face representation
- Ensemble learning for face classification

Key problems:

- Outdoor illumination
- Large pose variations
- Mid-term and long-term aging

- Occlusion and disguise
- Low quality and low resolution
- Generalization problem due to lack of enough training examples

Dataset and evaluation:

- Challenging datasets
- Video-based datasets
- Statistical performance evaluation

Applications and other topics:

- Facial gesture recognition
- Real-time processing solutions and systems
- Face-based surveillance, biometrics, and multimedia applications
- Face recognition in compressed domain

Submission procedure:

Manuscript should conform to the standard guidelines of the *International Journal of Pattern Recognition and Artificial Intelligence*. Instructions for formatting papers can be found in the Guidelines for Contributors at <http://www.worldscinet.com/ijprai/mkt/guidelines.shtml>. Prospective authors should submit an electronic copy of their complete manuscript via Editorial Manager web-based submission system by December 1, 2007. "Facial Image Processing and Analysis" special issue should be indicated in the corresponding cover letter. All submitted papers will be reviewed by at least three independent reviewers.

Important dates:

Manuscript submission deadline:	December 1, 2007
First notification:	March 15, 2008
Revised manuscript submission:	June 30, 2008
Notification of final decision:	September 15, 2008
Final manuscript due:	November 1, 2008
Publication of the special issue:	1st Quarter 2009

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