

# ISDA'10



IEEE



10th International Conference on Intelligent  
Systems Design and Applications

November 29 - December 1, 2010  
Cairo, Egypt

## Call for Participation

# Face Detection Competition

In conjunction with  
The 10<sup>th</sup> International Conference on Intelligent Systems  
Design and Applications, ISDA'10  
November 29 – December 1, 2010, Cairo, Egypt  
Conference web page: <http://cig.iit.unipi.it/isda2010/>

**Introduction:** Automatic analysis of human facial images has seen growing interest within the research community due to its vast area of applications in Human-Computer interactions and security industry. This analysis includes, face recognition, facial expression understanding, etc.... The common step amongst *all* facial analysis applications is 'Face Detection'. The objective of face detection is to locate the face coordinates in the input image or video frame. For example we cannot do face recognition on an incoming image without knowing where the face is in the first place. Of course, the more accurate the face detection step is the more accurate the face recognition will be.

The objective of this competition is to allow researchers and practitioners from academia and industries to compare their performance in face detection on new unpublished datasets. We believe researchers can benefit from this competition by identifying strong and weak areas in their algorithms relative to others. Additionally, we have the intent to publish the results in an extended article. This publication will include anonymous results from participants.

We invite all researchers and developers in the field of face detection to register and participate in the ISDA 2010 face detection competition.

## Participation

Participants of both academia and industry are invited to enter the competition. Organizers of this event will not participate in the competition. Participants can choose to be anonymous in publications. Participants can register by sending an email to the competition co-chair Dr. Mohamed Moustafa (moustafa@ieee.org).

## Executables Submission

Participants are required to submit a software command-line tool that reads an image file and outputs the eyes positions of the detected faces in the input image. The tool must be made available as a Linux or Windows-win32 command line application (.o / .exe file).

The interface of the face detection tool (called FaceDetect) consists of 2 parameters, separated by spaces.

- The path and filename of the input image
- The path and filename of the output file

For instance:

```
FaceDetect \data\images\123456.jpg \result\report.txt
```

The tool writes a result line in the output file that should have the following format:

*left, top, right, bottom, xl, yl, xr, yr*

where left, top, right, bottom are the coordinates of the found face rectangle, and xl, yl, xr, yr are the coordinates of the left and right eyes respectively.

For instance:

10, 20, 110, 130, 35, 45, 85, 47

means Face rectangle left=10, top=20, right=110, bottom=130. Left eye xl=35, yl=45, and right eye xr=85, yr=47.

When the output file already exists, the tool should append the result line to the bottom of the already existing result lines.

Participants must deliver the verification tool and all software needed to run it in a single ZIP file. This ZIP file must also contain a readme.txt file with all relevant information of installing and running the tool. In addition we ask for a short description of the fundamental approach (2000 words extended abstracts) and references to further publications if available.

The executable will not be used for purposes other than the ISDA 2010 competition. Performances will be published in the ISDA proceedings and in an extended journal publication. After the competition, all executables will be destroyed.

## Performance Evaluation

We will use the distribution function of the relative error described in details in the following paper: Jesorsky et al., "Robust Face Detection Using the Hausdorff Distance", Third International Conference on Audio- and Video-based Biometric Person Authentication, Springer, Lecture Notes in Computer Science, LNCS-2091, pp. 90–95, Halmstad, Sweden, 6–8 June 2001  
<http://www.facedetection.com/downloads/AVBPA01BioID.pdf>

Additionally, we will measure also the false detects and false rejects. False detects are the non-faces areas where the algorithm reports as a face. False rejects are the true faces that the algorithm fails to find.

## Important Dates

Registration by e-mail opens on: April 15<sup>th</sup>, 2010.

Deadline for submitting the tool executable: August 15<sup>th</sup>, 2010.

ISDA 2010: presentation of performance in a special session.

## Organizing committee

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