

Face Detection using Gabor-Feature Extraction and Neural Networks
Version : 4.1

1- Extract All files in Work folder under Matlab

2- In order to run the program you must have Image Processing and Neural Networks Toolboxes

3- Type main in the command window

For the first time , The program automaticaly create

A) Feed-Forward Network (net.mat about 3.5MB)

B) Image Database (imgdb.mat about 11MB)

C) Gabor Filters (gabor.mat about .5MB)

4- Click on "Train Network" from the menu

5- Click on "Image Scanning" from the menu

6- Select a file for example 'im1.jpg'

**The program can only detect faces about [27 18] pixels in the photo
, if detect any**

Best Wishes

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# REFERENCES :

## Papers :

- [01] Gabor Wavelets Transform and Extended Nearest Feature Space Classifier for Face Recognition - J. Zhu , M.I Vai and P.U. Mak - **Macau Macau Uni.**
- [02] Gabor Wavelet Based Pose Estimayion For Face Recognition - B. Gökberk, L. Akarun, E. Alpaydm - **Bagazici Uni.**
- [03] A Gabor Feature Classifier for Face Recognition - C. Liu H. Wechsler
- [04] Gabor Feature Based Classification Using the Enhanced Fisher Linear Discriminant Model for Face Recognition - C. Liu H. Wechsler
- [05] Gabor-Based Kernel PCA with Fractional Power Polynomial Models for Face Recognition C. Liu
- [06] Gabor Wavelet Associative Memory for Face Recognition - H. Zhang, B. Zhang, W. Huang and Qi Tian
- [07] Neural Network-Based Face Detection – H.A. Rowley, S. Baluja, and T. Kanade
- [08] Rotation Invariant Neural Network-Based Face Detection - H.A. Rowley, S. Baluja, and T. Kanade
- [09] A Novel Gabor-LDA Based Face Recognition Method , Uni. Sceince and Technology of China
- [10] Independent Component Analysis of Gabor Features for Face Recognition - C. Liu
- [11] Invariant Face Recognition by Gabor Wavelets and Neural Network Matching -D. Paramadihanto , Haiyuan Wu , Masahiko Yachida - **Osaka Uni.**
- [12] Invariant Neural-Network based Face Detection with Orthogonal Fourier-Mellin Moments - **Laval Uni.**
- [13] A New Class of Convolutional Neural Networks and their Application to Face Detection - F.H.C Tivive and A. Bouzerdoun
- [14] Face Detection Based on Skin Color Using Neural Networks , **American University of Cairo**
- [15] Human Face Recognition Based on Singular valued Decomposition and Neural Network , **International Islamic University of Malaysia**

## Books :

- [16] Image Processsing Toolbox for using with Matlab , Release 14
- [17] Neural Networks Toolbox for using with Matlab , Release 14
- [18] Digital Image Processing 2<sup>nd</sup> Edition , Rafael C. Golzalez , **Prentice Hall**
- [19] Neural Networks Int Edition , Simon Haykin , **Prentice Hall**
- [20] 2D Object Detection and Recognition , Yali Amit , **MIT Press**

## Images in Tran Set and Samples Belong to :

- [01] Rowley-Baluja-Kanade Face Detector , Author: Scott Sanner
- [02] Face Recognition By Atle Nes