

PhD Titles By Faculty Members

Name of the Faculty: **Dr. Dineshkumar N. Satange**
Department: **Computer Science**
Area/Field of Research: **Image Processing, Pattern Recognition, Biometric Technologies**
Title of the PhD: **“Some Enhancement in Biometric Recognition of Face and Facial Expression”**

About the PhD project and its significance:

The thesis has considered face and facial expressions as basic research objects. This study is aimed to give the basic review on the biometric techniques and discussion to facial expression recognition in still images. The focus of this study was to develop an effective and accurate feature extraction technique, which extract the features of face image with high discriminatory power. An automatic system for the recognition of facial expressions is discussed on a representation of the expression, learned from a training set of preselected meaningful features. The study has captured biometric data which in view, can be used by the biometric system for real-time comparison against biometric samples. A survey of contemporary techniques for face and facial expression recognition is presented which increases the understanding for developing new methodologies. Individual dataset being created by the researcher has made experimentations easy. Ample experimentations using LBP, DWT, Gabor, and Gabor-Zernike appearance for ORL, Yale, IFD, NC-Face databases and using KNN, LDA, SVM and ESD classifier is the actual core of the thesis work. The thesis used seven expression recognition including angry, disgust, Fear, happy, neutral, sad and surprise. The MATLAB software platform was beautifully used for experimental analysis. Meaningful tables and graphs added proper explanation to the theoretical contents. The presented research work has improved the face recognition accuracy by using the LBP, DWT and Gabor base face recognition. Small sized images have eliminated the stress of dimensionality. Increased recognition accuracy is observed at many places. The overall research has gain is appealing. This underlined work has achieved significant improved accuracy of face and facial expression recognitions with using less number of features than contemporary studies.

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