International Journal of Innovative Computing, Information and Control
Volume **7**, Number **12**, December **2011**

 ISSN 1349-4198
pp. 7021–7032

EFFICIENT GENDER CLASSIFICATION USING OPTIMIZATION OF HYBRID CLASSIFIERS USING GENETIC ALGORITHM

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Received May 2010; revised September 2010

Abstract. *Classification is an important area of research which presents an immense potential in the form of its applicability and usefulness. Gender classification is one such application of classification which has gained a great deal of attention recently. However, the techniques presented so far in literature dealing with gender classification present a significant room for improvement. The paper presents an efficient feature based gender classification technique. In this technique, a face detection mechanism has been used, which excludes unwanted area from the image. This significantly reduces image size, thus enabling to classify more efficiently. Classifier ensemble has been proven to be an effective technique which considerably enhances the performance of classifiers. The proposed technique uses Genetic algorithm based optimized ensemble classification which provides a more accurate classification as compare to the state-of-the-art techniques in terms of various quantitative measures. The proposed method is tested on the standard facial images database and results have been compiled. The experimental results on this database have been compared with results achieved by using existing methods. The comparison indicates that the proposed technique gives superior performance to the other competitive methods based on well known quantitative measures.*

Keywords: Gender classification, Feature extraction, Genetic algorithms, Ensemble classification

1. **Introduction.** Gender classification is a challenging pattern recognition problem. Generally, gender classification is described as a process of determining the gender of a subject from several facial images. The analysis of such facial images has been an interesting area of study in the domain of computer vision. This analysis activity has been successfully used in many applications like biometric and robotic-human interaction. One