

## Soft biometrics: gender recognition from unconstrained face images using local feature descriptor

### ABSTRACT

Gender recognition from unconstrained face images is a challenging task due to the high degree of misalignment, pose, expression, and illumination variation. In previous works, the recognition of gender from unconstrained face images is approached by utilizing image alignment, exploiting multiple samples per individual to improve the learning ability of the classifier, or learning gender based on prior knowledge about pose and demographic distributions of the dataset. However, image alignment increases the complexity and time of computation, while the use of multiple samples or having prior knowledge about data distribution is unrealistic in practical applications. This paper presents an approach for gender recognition from unconstrained face images. Our technique exploits the robustness of local feature descriptor to photometric variations to extract the shape description of the 2D face image using a single sample image per individual. The results obtained from experiments on Labeled Faces in the Wild (LFW) dataset describe the effectiveness of the proposed method. The essence of this study is to investigate the most suitable functions and parameter settings for recognizing gender from unconstrained face images.

**Keyword:** Gender recognition; Unconstrained face images; Soft biometric traits; Local feature descriptor; Shape feature extraction