Down syndrome face recognition: a review

ABSTRACT

One of the most pertinent applications of image analysis is face recognition and one of the most common genetic disorders is Down syndrome (DS), which is caused by chromosome abnormalities in humans. It is currently a challenge in computer vision in the domain of DS face recognition to build an automated system that equals the human ability to recognize face as one of the symmetrical structures in the body. Consequently, the use of machine learning methods has facilitated the recognition of facial dysmorphic features associated with DS. This paper aims to present a concise review of DS face recognition using the currently published literature by following the generic face recognition pipeline (face detection, feature extraction, and classification) and to identify critical knowledge gaps and directions for future research. The technologies underlying facial analysis presented in recent studies have helped expert clinicians in general genetic disorders and DS prediction.

Keyword: Face recognition; Down syndrome; Computer vision; Face dysmorphology