Contour and Texture based Approaches for Dental Radiographic and Photographic images in Forensic identification

Abstract

The identity of decomposed and severely burnt corpse is a challenging task in forensic odontology. In such situation, dental records have been used as a prime tool for forensic identification. The main goal of this work is to identify a person by comparing contour shape extraction and texture feature extraction approach for both radiographic and photographic dental images. In this research, contourlet transform is used as a contour shape extraction; Local Binary Pattern, Center Symmetric- local binary pattern and Local Ternary Pattern are used as texture features. Different matching algorithms are proposed. In order to salvage better matching performance, Cumulative Matching Curve (CMC) is used for both radiographic and photographic images. Hit-rate indicates that better matching is observed for radiographic images than photographic images.