

Abstract

The goal of forensic dentistry is to identify individuals based on their dental characteristics. In this paper we present a new matching technique for identifying missing, and wanted individuals from their dental X-ray records. Given a dental record, usually a postmortem (PM) radiograph, the proposed technique searches a database of ante mortem (AM) radiographs and retrieves the best matches from the database. The technique is based on matching teeth contours using Hierarchical Chamfer distance. The proposed technique has two main stages: feature extraction, and teeth matching. During retrieval, according to a matching distance between the AM and PM teeth, AM radiographs that are most similar to a given PM image, are found and presented to the user. The experimental results on a database of 162 AM images show that the technique is robust for identifying individuals based on their dental records.