

ABSTRACT

Automating the postmortem identification of deceased individuals based on dental characteristics is receiving increased attention especially with the large number of victims encountered in mass disasters. An automated dental identification system compares the teeth present in multiple digitized dental records in order to assess their similarity. The primary step in such a system is the estimation of the contour of each tooth in order to permit efficient feature extraction. Extracting the contour of the teeth is a very challenging task and has received inadequate attention in the literature. In this paper, the task of teeth contour extraction is accomplished using active contour without edges. This technique is based on the intensity of the overall region of the tooth image and, therefore, does not necessitate the presence of a sharp boundary between teeth. Further, this technique can extract the region contour in the presence of additive noise and in the absence of well-defined image gradients. Experimental results indicate the benefits of the proposed approach.