Conventional and Novel Methods for Facial-Image Identification

ABSTRACT: This article reviews conventional and novel methods for facial-image identification from forensic aspects. Among the conventional approaches, three methods, i.e., morphological comparison of facial features, anthropometric indices comparison, and face-to-face superimposition, are generally used. The methods most commonly used in caseworks are in the order of morphological comparison, anthropometric indices comparison, and face-to-face superimposition. A novel method based on the superimposition of 2D/3D facial images is introduced and its advantages and disadvantages are described. Assessments of the reliability of facial-image identification, including expert opinions, are discussed. A new retrieval system using a 3D facial-image database is proposed for the screening of suspects' facial images.