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Abstract

Efficient and successful joining of torn pieces to reformation the original image is an important and challenging issue in many disciplines, especially in forensics, archaeology, art restoration, investigation sciences and defence, Automation of the process by means of appropriate techniques can speedup problem solving substantially. A proposal for a fast, efficient, and useful technique for the reformation of hand-torn pieces from their images, the human implementation of this task is very difficult, as it requires great amount of time, skill and effort. Thus, the automation of such a work is very important and can lead to faster, more efficient, and to a significantly reduction in human involvement. The proposed method is based on the information extracted from the outlines and from the colour contents of the pieces, edge detection and the resulting feature extraction process. The whole process is done without relying on any beforehand knowledge which may guide the process to the final output image which necessitates the use of AI techniques for the best possible image reformation. Results obtain for reformat success percentage were from (87.5%) relative to the input pieces of particular images where the number of image pieces are 14out of 17.

Keywords: Reformation System, artificial intelligence (GA), correlation algorithm,