Year	2021
Journal	electronics
Title	Advances in Meta-Heuristic Optimization Algorithms in Big Data Text Clustering. Electronics
Authors	L Abualigah, AH Gandomi, MA Elaziz, HA Hamad, M Omari, M Alshinwan, AM Khasawneh
Abstract	The paper proposes and investigates a new segmentation technique for Arabic handwritten scripts. The essential objective of the technique is clarifying character boundaries and distinctions of each character. The technique contains three pre-processing steps. First, fill close and open holes (missing circle). Second, remove punctuation to clarify the area of ligature points and avoid characters overlapping. Finally, crop the word image to remove excess white area. The goal of filling close and open holes is to increase the pixels density of character and clarify the ligature points of word. The technique calculates the distance histogram of the background color, the goal of the histogram is to discover points of local minima to precisely determine the segmentation points.