Whale Optimisation Freeman Chain Code (WO-FCC) Extraction Algorithm for Handwritten Character Recognition

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ABSTRACT
In order to improve the classification accuracy in the field of handwriting character recognition (HCR), the number of derivative algorithms has improved and the interest in feature extraction has increased. In this paper, we propose a metaheuristic method for feature extraction algorithm with Whale Optimisation Algorithm (WOA) based HCR. WOA is a swarm-based techniques that mimic the social behavior of groups of animals, which mimics the social behavior of humpback whales. Freeman chaincode (FCC) is utilised as a data representations of handwritten text images. Nevertheless, the representations of FCC depends on the length of the path and the branching of the character's nodes. To solve this problem, we propose a metaheuristic approach through WOA to find the shortest path length and minimum computational time for handwriting recognition. Finally, the results were compared with the existing proposed Flower Pollination Algorithm (FPA) at the time of FCC extraction. The results show that WOA is a bit better at getting shorter path lengths than FPA in terms of path lengths. In terms of calculation time, WOA calculates faster calculation time by feature extraction than FPA.

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