

Intelligent Satin Bowerbird Optimizer Based Compression Technique for Remote Sensing Images

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Abstract: Due to latest advancements in the field of remote sensing, it becomes easier to acquire high quality images by the use of various satellites along with the sensing components. But the massive quantity of data poses a challenging issue to store and effectively transmit the remote sensing images. Therefore, image compression techniques can be utilized to process remote sensing images. In this aspect, vector quantization (VQ) can be employed for image compression and the widely applied VQ approach is Linde–Buzo–Gray (LBG) which creates a local optimum codebook for image construction. The process of constructing the codebook can be treated as the optimization issue and the metaheuristic algorithms can be utilized for resolving it. With this motivation, this article presents an intelligent satin bowerbird optimizer based compression technique (ISBO-CT) for remote sensing images. The goal of the ISBO-CT technique is to proficiently compress the remote sensing images by the effective design of codebook. Besides, the ISBO-CT technique makes use of satin bowerbird optimizer (SBO) with LBG approach is employed. The design of SBO algorithm for remote sensing image compression depicts the novelty of the work. To showcase the enhanced efficiency of ISBO-CT approach, an extensive range of simulations were applied and the outcomes reported the optimum performance of ISBO-CT technique related to the recent state of art image compression approaches.

Keywords: Remote sensing images; image compression; vector quantization; sand bowerbird optimizer; metaheuristics; space savings



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