

ABSTRACT

Among various fields in the multimedia age, Engineers and scientists are focusing their research in image processing. The image obtained from the result need to be processed in a successful fashion by reducing the noise in the image and to make it legible. Especially in forensic, astrophysics, space sciences, transportation, biometric and medical imaging application, image process plays a vital role in many aspects like exchanging their information, retrieval and the context. One of the major challenges for the researchers is to reduce the noise present in the image and to reconstruct it by eliminating the extra noise present in the image which is known as image denoising

Besides many noise removal techniques, particle Swarm Optimization techniques, Bacterial Foraging algorithm and Memetic algorithm techniques are discussed and expropriate in this work very detailed. In this present investigation the proposed approach has been divided into two phases. First phase is by using the proposed optimization techniques to identify the noise that is present in the images are studied in the first stage. And the second phase is the next stage that deals with the suitable elimination techniques for the removal of the noise in the image.

In this approach, the best results are called as the particles, which are flying through by means of the space in the problem followed by the current optimum particles. In this stage the each of the individual particles that are kept in the track of its coordinates space in relative problematic space approach which are connected with the best optimum solution which are known as the fitness function and it has been attained for the better result and it is called as the best values. And also the another "best" n value that is followed by the PSO optimizer and the obtained result shows the best value, that are attained so far by any particles that are available in the neighbors of the each particle. And also this position is called lbest. When a particle takes all the population as its

topological neighbors, the best value is known as the global best value and it is represented as the gbest values.

In the Bacterial Foraging Optimization Algorithm the submission of cluster seeking approach of a swarm of E-coli Bacteria in multi-optimal purpose optimization is the crucial clue of the novel algorithm. Bacteria examine for nutrients in a manner to maximize energy obtained per unit time. Individual bacteria also interconnects with others by directing signals. A bacterium takes seeking results after seeing two previous features. The development, in which a bacterium travels by attracting light steps while examining for nutrients, is titled chemotaxis and main clue of Bacterial Foraging Optimization Algorithm is copying chemotactic undertaking of virtual bacteria in the problematic examine space. The Bacterial Foraging Optimization creation comprises of three main tools specifically chemotaxis, reproduction and rejection dispersal.

In Evolutionary algorithms techniques are captured by the natural selection concept and also the required solution are given the specified problem through by means of the codified structures which is called as the chromosomes. It is based on a memetic algorithm extended by a search technique to further improve individual's fitness that may keep high population, diversity and reduce the likelihood premature convergence. The progress of chromosomes due to the action of natural selection, mutation and crossover are simulated through by means of the suitable coding in the computer.

Finally studied the heuristic algorithm involved in image smoothing and filtering techniques the efficient image smoothing process of the image manipulation by formulating the problem as the image smoothing is achieved by minimizing a convex as an objective function with constraints. As a result suitable optimization problems are studied. For a combine framework in an optimization problem, to standardize the texture pixel the fine edges in the images are eliminated and edges of the images are retained. The efficiency of the

technique for the image smoothing processes are discussed in the computer generated structured images and it can be achieved by means of both experimental results such as quantitative and qualitative methods on the images.