Abstract

Hybrid metaheuristic, an advancement over classical metaheuristic, provides a more effective search methodology. It combines several metaheuristic algorithms into one optimization mechanism. In this paper image enhancement is considered as an optimization problem. Hybrid metaheuristic techniques are used to find the optimum value for a set of parameters of a transformation function, with an aim towards maximizing a fitness function. Three hybrid metaheuristic approaches are employed to find the optimum solution. Results of all three algorithms are compared amongst themselves. Comparison is also shown with classical metaheuristic algorithms and traditional enhancement approach of histogram equalization.

References

Comparison of Hybrid and Classical Metaheuristic for Automatic Image Enhancement

- Bo Liu, Peisheng Meng, Hybrid Algorithm Combining Ant Colony Algorithm with Genetic Algorithm for Continuous Domain, The 9th International Conference for Young Computer Scientists, 2008
- F. Focacci, F. Laburthe, and A. Lodi. Local search and constraint programming. In Glover and Kochenberger
- El-Ghazali Talbi, Metaheuristic: from design to implementation, John Wiley & Sons

Index Terms

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Keywords
Differential Evolution  Genetic Algorithm  Hybrid Metaheuristic  Image Enhancement
Particle Swarm Optimization
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