Ant Colony Optimization with the Fusion of Adaptive K-means and Gaussian Second Derivative for Image Segmentation

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 134
Number 3

Year of Publication: 2016

Authors:
Pragya Sharma, Unmukh Datta

10.5120/ijca2016907890

Abstract

In this study, proposed an ant colony optimization (ACO) with the fusion of adaptive k-means and Gaussian second derivative for image segmentation. With the use of two algorithms will enhance the segmentation accuracy and speed up algorithm convergence. In the Gaussian second derivative, it is used for enhancing edges of an image because some information loses in the previous algorithm. The experimental process proved that a new hybrid clustering algorithm is more efficient than previous algorithms. Principally, this algorithm has better results in image segmentation. The proposed method can get profit of the K-means clustering for image segmentation in the aspects of less execution time. Also, it can get the benefits of ACO in the aspects of f-measure accuracy.

References

and Software Engineering, Volume 5, Issue 8, August 2015, pp:742-746


Index Terms

Computer Science  Image Processing

Keywords

ACO, Gaussian Second Derivative and K-means.
Ant Colony Optimization with the Fusion of Adaptive K-means and Gaussian Second Derivative for Image...