Abstract

The visibility restoration of images is effected by various kinds of weather conditions like fog, mist, sandstorm, rain etc. This poor visibility will cause failure in the image processing applications like video surveillance, object detection, object recognition, intelligent transportation etc. The traditional visibility restoration will not requisitely restore the hazy images, because of the poor estimation of the haze thickness and color parameters. This work proposes a visibility restoration algorithm for images taken during sandstorm conditions. Haze thickness and color parameters can be accurately estimated and in turn produces a high-quality image with clear visibility and vivid color. Haze thickness estimation uses Laplacian distribution model and Gamma correction techniques. Using the estimated color parameters, each color channel can be equalized and thus overcoming the color cast problems. Finally, restoration function is used to restore the haze-free image. A bilateral filtering is proposed so as to improve the time consumption of the algorithm by replacing the soft matting technique. Thus the limitations of the traditional methods can be resolved.
References

6. B. Xie, F. Guo, and Z. Cai. 2010. Improved single image dehazing using dark channel prior and multi-scale

Index Terms

Computer Science

Algorithms

Keywords

Gamma Correction, Dark Channel Prior, Bilateral Filter, Visibility Restoration