Haze Removal and Color Compensation of Underwater Image

Abstract

In underwater image capturing, color change and presence of haze are the two sources of distortion. These distortions are caused by light scattering and light attenuation occurred by light traveling in water with different wavelengths. These changes are caused by light incident on objects, reflected and deflected by different particles present in the propagation path before reaching the camera. Thus the images are hazy and have bluish tone. In the present work, haze removing technique proposed to enhance the image and to compensate the other colors which have disappeared. In the present work, the distortion caused by artificial light, haze effect and appearance of bluish tone are compensated. Based on the amount of attenuation corresponding to each wavelength, color change compensation is conducted and color balance is restored. Effect of noise is also reduced by using the spatial filter. Using this technique the visibility and color of the image can be enhanced.

References


Index Terms

Computer Science

Image Processing

Keywords

Color compensation  denoising  light attenuation  light scattering  haze