SYSTEM FOR ELIMINATING SMOG FROM CAPTURED IMAGES

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Abstract

The proposed invention relates to a smog eliminating system, comprising an image capturing unit for capturing group of images, a pre-processing unit connected to the image storing unit that increases quality of the images, a feature extraction module connected to the pre-processing module that extract features from the images to obtain desmogged images, and a training module for training the system, and an user interface to show the demogged images.

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 Keywords: image capturing unit, pre-processing module, user interface, and feature extraction module.

1. Introduction

Smog is an air pollution form that is basically a combination of airborne smoke and fog particulates. Smog today relates in particular to photochemical smog, which is haze produced when sunlight reacts with nitrogen dioxide and volatile organic compounds found in vehicle, industry and energy plant fossil fuel emissions. Conventionally, most of the desmogging system was utilize a heuristics optimization protocol for the removal of smog from a group of road side images, which was considered to be approximately best solution but not exactly best solution for the removal of smog from the images. The optimization of heuristics was not generic and was known as an algorithm based on problems. In the current scenario, the system is manufactured to improve image quality by using a meta-heuristics and a hybrid filter to increase the visibility of objects for the driver.

1. Working

The proposed invention relates to a system for removing smog from a group of images to increase visibility for a person to detect objects coming in-front of a driving the vehicle to minimize risk of road accidents.The images capturing unit is associated in the system that captures a group of images from predefined database, wherein the images capturing unit is preferably a camera/drone camera. The obtained images are desmogged images that consist of mist, dust, and cloudy appearance. The pre-processing unit is connected to the image storing module that enhances the quality of the collected images. The feature extraction module is connected to the pre-processing unit that receives enhanced images and removes the atmospheric interferences from such images. The atmospheric interferences are removed by using a hybrid filter. The training module that provides training to the system.

2. Result and conclusion

The system helps to reduce smog from the images to enhance the visibility of the person. The smog is produced by the suspension of very fine moisture droplets in the air. It scatters when light rays hit these droplets, resulting in a loss of contrast and a thick white background. As these droplets become lower, smog becomes thicker, making roads even more blanketed. As a result, the person cannot see far ahead and increases the likelihood of road accidents.