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Multi-Shot Technology for Color Reproduction in Digital Still Cameras

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Abstract:

Artificial intelligence has also helped us do things faster and better, in many areas. This also applies to photography. As many of the functions of professional digital cameras, such as the functions of automatic adjustment of exposure and focus, rely on artificial intelligence. And smart phones have become equipped with cameras that work with artificial intelligence technology, and therefore the user of the camera will have more time devoted to the creative aspects, instead of wasting time on solutions to repeated problems. Artificial intelligence has also affected the development of sophisticated algorithms that gradually replace traditional methods of processing digital photographs. This allows immediate processing of images, fixing their faults, and improving them automatically that does not require any effort. To reach amazing results, obtaining them requires the photographer to spend long hours working on traditional software. And it came to getting a photo without a photographer, as is the case with the Google Clips smart camera, as well as obtaining a photo without a photographer or camera, as is the case with images generated by artificial intelligence algorithms like StyleGan. The research problem lies in the fact that lack of familiarity with the multiple capabilities of artificial intelligence, and trying to employ them effectively in all stages of the production of the photo, will lead to consuming a lot of time and effort in solving traditional problems, which artificial intelligence can accomplish quickly, easily and efficiently, such as automatic control of exposure and focus, And improve the image and fix its faults and add effects, in less time and effort. Therefore, the research aims to identify the huge potential granted by applications of artificial intelligence in photography, and the extent of its rapid development, and how to maximize the use of them to obtain better photographs in less time and effort. Either in the shooting stage, or in the stage of processing and improving images and fixing their faults, as well as in generating and creating photographs of subjects that do not exist in reality.

Keywords

Photography, Digital Cameras, Multi-Shot Technology, Camera Sensor, Color demosaicing, Bayer Filter Array.

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