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Abstract
Demosaicing schemes are widely used in digital still cameras (DSCs). In the resolution aspect of CCD sensor arrays, the interpolation quality of DSC Image mainly depends on the performance of the demosaicing process. A general problem of existing demosaicing algorithms is an inconsistent distribution with different primary color channels; meanwhile, the precise estimation of the interpolated pixels to be determined is problematic. As a result, it brings annoying phenomena about color distortion.
To improve the defect, we propose an improved demosaicing methodology based on alternating projection (IDMAP) algorithm in which we combine improved effective color interpolation (IECI), alternating projections (AP) and median filter to provide rather good image performances. Further, the proposed IECI methodology can firstly contribute the more accurate initial estimations to successive AP process. Finally, a median filter is used to compensate the color defects.
With the experimental results, in comparison with the conventional demosaicing techniques and even some state-of-the-art methods, we significantly demonstrated the effectiveness of the proposed method.
Advisory Committee Yu-Pin,Chang - advisor

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