Computational Intelligent Color Normalization for Wheat Plant Images to Support Precision Farming

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Abstract	Image colors are considerably affected by the intensity of the light source. In this paper, we propose a color constancy method using neural networks fusion to normalize images captured under sunlight with a variation of light intensities. A genetic algorithm is also applied to optimize the color normalization. A 24-patch Macbeth color checker is utilized as the reference to normalize the images. The results of our proposed method is superior to other methods, i.e. the conventional gray world and scale-by-max methods, as well as linear model and single neural network method. Furthermore, the proposed method can be used to normalize wheat plant images captured under various light intensities.
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