

Enhancing Foundation Shade Suggestions through Skin Tone Identification

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Abstract: As we concentrate on addressing the challenges in responsible beauty product recommendation, particularly when it involves comparing the product's color with a person's skin tone, similar as for foundation and robe p conditions. The features uprooted using the prints from illuminated terrain can be largely deceiving or indeed be inharmonious to be compared with the product attributes. Hence bad illumination condition can oppressively degrade quality of the recommendation. We introduce a machine learning frame for illumination assessment which classifies images into having moreover good or bad illumination condition. We also make an automatic stoner guidance tool which informs a stoner holding their camera if their illumination condition is good or bad. This way, the stoner is handed with rapid-fire feedback and can interactively control how the print is taken for their recommendation. Only a many studies are devoted to this problem, substantially due to the lack of dataset that's large, labeled, and different both in terms of skin tones and light patterns. Lack of similar dataset leads to neglecting skin tone diversity. Thus, we begin by constructing a different synthetic dataset that simulates colorful skin tones and light patterns in addition to a being facial image dataset. Next, we train a Convolutional Neural Network (CNN) for illumination assessment that outperforms the being results using the synthetic dataset. Eventually, we dissect how the work improves the shade recommendation for colorful foundation products.

Keywords: RGB, HSV, YCrCb, Delta-E, Histogram Equalization, Image Segmentation, Skin Tone, Skin Detection, Color Space

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