Android Application to Assist Visually Impaired with Outfit Coordination

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Abstract

The paper presents an android based application to assist visually impaired with outfit coordination process. The application helps them to be independent in their decisions while shopping or getting ready for the day. The application matches apparel image input with user's previously saved closet items, then provides the user with the possible matching item suggestions. The matching process is done based on the item outline and dominating colours. In order to develop this application five main components have been developed: 1. Two Region of interest (ROI) extraction components facilitating feature and colour extraction; 2. An outline detection component to determine whether an item is a top, skirt or a pair of trousers; 3. A colour recognition component to extract dominant colours of an apparel image; 4. A descriptive colour verbal feedback; 5. A matching component based on item outline and colours to coordinate with others in the user's closet. The output to the user includes the descriptive colours, communicated via audio, indicating the 3 dominant colours using their descriptive names - selected from a pool of 581 different colour shades. Other output is the outline details of the matching items. The application was developed and tested on Android 2.2 (Froyo) and the results showed that the ROI extraction and outline detection components
perform well. The colour recognition and descriptive name generation modules outperform the current ones.

References

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Index Terms

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Keywords

Colour Blindness  Visual Impairment  Android  Computer Vision  Outfit Coordination
Clothes Matching

Apparel.