Skin is the most widely used primitive in human image processing research and computer vision with application ranging from face detection and person tracking to pornography filtering. It has proven to be a useful and robust cue for detecting human parts in images since (i) it is invariant to orientation and size (ii) it gives extra dimension compared to gray scale methods and (iii) it is fast to process. The main problems with the robustness of skin color detection depend on illumination condition, it varies between individuals, many everyday life objects are skin color like and skin color is not unique. To detect skin tone in images with this complex background, we presented a method based on hybrid approach. In this approach, the Cheddad’s approach is combined with Cr of YCbCr color space. In Cheddad’s approach, the red channel is discarded. Only green and blue channels are used to find the skin tones. Due to the absence of red channel, this approach is not working properly in images which have poor illumination. To improve the performance, we propose to include the Cr component of YCbCr color space. The experimental results show that the proposed approach is simple and preserve skin color better than the previous methods under various illumination and background conditions.
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- Dai Y., and Nakano Y., Face-Texture model based on SGLD and its application in face detection in a color scene, Pattern Recognition,1996,pp. 1007-1017.
- J. Yang, W. Lu, A. Waibel, Skin-color modeling and adaptation, ACCV98, 1998
- M. J. Jones, J. M. Rehg, Statistical color models with application to skin detection, CVPR99, 1999
- J. C. Terrillon, M. N. Shirazi, H. Fukamachi, S. Akamatsu, Comparative performance of different skin chorminance models and chorminance spaces for the automatic detection of human faces in color images, CFGR00, 2000, pp. 54–61
- Shin M. C., Chang K. I and Tsap L. V. 2002 Does color space transformation make any difference on skin detection? In IEEE Workshop on Applications of Computer Vision.
- P. Kakumanu, S. Makrogiannis, N. Bourbakis, A survey on skin color modeling and detection methods, Pattern Recognition 40 (2007)
- Handaru Jati, Dhanapal Durai Dominic, Human Skin Detection Using Defined Skin Region, 978-1-4244-2328-6/08© 2008 IEEE.
- Zhang Zhengzhen, Shi Yuexiang, Skin Color Detecting Unite YCgCb Color Space with YCgCr Color Space 978-1-4244-3986-7/09.

Index Terms

Computer Science Pattern Recognition

Keywords
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