Abstract

Face detection in uncontrolled ambiance continues to be a challenge to traditional face detection methods due to the large difference in facial expressions. The task of alignment is particularly difficult when the face comes from an extremely uncontrolled environment. To overcome these problems, the present paper is a reliable and deeply considerable application that allows users to detect a face(s) in real-time and process them. Database of faces with bounding rectangles and facial landmark locations is collected, and simple discriminative classifiers are learned from each of them. Then methods for morphing, warping, swapping and averaging of faces are presented. As a result, faces can be very effectively detected, aligned/oriented and used for the above methods. In addition, based on results this approach can detect faces and eyes in difficult conditions without explicitly simulating their variation. Evaluating the tests of the application, it can confidently said that this face detection method is accurate and effective and reaches the most modern level of performance. The same methodology can easily be generalized to other tasks, as well as the detection of a common object.
# References

9. S. Ren, X. Cao, Y. Wei, and J. Sun. Face alignment at 3000 fps via regressing local binary features. In CVPR, 2014
26. Average Face: OpenCV (Python, C++) Tutorial. URL: https://www.learnopencv.com/average-face-opencv-c-python-tutorial
29. Average Face – Creative AI. URL: www.creativeai.net/posts/Fods4e9m8nGiy3F5a.
30. Face Alignment with OpenCV and Python. URL: www.creativeai.net/posts/Fods4e9m8nGiy3F5a.
31. Face Alignment with OpenCV and Python. URL: www.creativeai.net/posts/Fods4e9m8nGiy3F5a.
34. Hazar Mliki, Mohamed Hammami, Hanène Ben-Abdallah, Real time face detection based on motion and skin color information, Parallel and Distributed Processing with Applications, (2012), 10th IEEE International Symposium on Parallel and Distributed Processing with Applications, doi: 10.1109/ISPA.2012.117.

Index Terms
Keywords

Face detection, Facial landmark, detection and recognition