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网上报名照片的人脸自动检测和裁剪系统

刘芳梅, 杨云

山东职业学院, 山东 济南 250104

摘要:

设计了基于肤色空间和积分投影的人脸检测和剪裁系统。首先对输入的图像建立 $YCbCr$ 肤色模型, 选择一部分皮肤区域样本, 通过实验统计确定色度阈值的上限和下限, 采用“双重阈值”方法将皮肤区域分割出来, 然后对二值化图像进行形态学处理, 最后进行水平积分投影和垂直积分投影, 找到眼睛进而确定人脸区域, 同时按要求进行裁剪图像。在输入图像被限定在“包含单张免冠人脸、角度正位、面部清晰、表情自然神态庄重”的条件下, 检测准确率达96%以上。本系统实用性强, 操作简单。

关键词: 网上报名照片 人脸检测 裁剪

Face automatic detection and cutting system for online registration photograph

LIU Fang-Mei, YANG Yun

Shandong Polytechnic, Jinan 250104, China

Abstract:

This article designed a face detecting and cutting system based on skin color space and integral projection. Firstly, this article set skin color model from the input image. In this step, a part of the skin area sample is selected, upper limit and lower limit of chroma threshold by experimental statistics is determined, and then the skin area is cutout by “double threshold” methods. Secondly, morphological process binarization image is carried out. Finally, integral horizontal projection and vertical projection are made, the skin area is determined by locating eyes, and the image is cut in accordance with the requirements. In condition that input images are limited to “contain single bareheaded face, face clear, expression natural and solemn”, our detection accuracy is above 96%. This system has strong practicability, and is easy to operate.

Keywords: online registration photograph face detection cutting

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通讯作者:

作者简介:

作者Email:

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