عنوان مقاله:

Estimation of Hand Skeletal Postures by Using Deep Convolutional Neural Networks

محل انتشار:

ماهنامه بین المللی مهندسی, دوره 33, شماره 4 (سال: 1399)

تعداد صفحات اصل مقاله: 8

نویسندگان:

A. Gheitasi - *Department of Electrical and Computer Engineering, University of Birjand, Birjand, Iran*

H. Farsi - *Department of Electrical and Computer Engineering, University of Birjand, Birjand, Iran*

S. Mohamadzadeh - *Department of Electrical and Computer Engineering, University of Birjand, Birjand, Iran*

خلاصه مقاله:

Hand posture estimation attracts researchers because of its many applications. Hand posture recognition systems simulate the hand postures by using mathematical algorithms. Convolutional neural networks have provided the best results in the hand posture recognition so far. In this paper, we propose a new method to estimate the hand skeletal posture by using deep convolutional neural networks. To simplify the proposed method and to be more functional, the depth factor is ignored. So only the simple color images of hands are used as inputs of the system. The proposed method is evaluated by using two datasets with high-diversity named Mixamo and RWTH, which include 43,986 and 1160 color images, respectively, where 74% of these images are selected as a training set and, 26% of the rest images are selected as the evaluation set. The experiments show that the proposed method provides better results in both hand posture recognition and detection of sign languages compared to state-of-the-art methods.

کلمات کلیدی:

Deep convolutional neural network, Deep Learning, Hand Posture Recognition, Skeletal Estimation