# Edge Density-based Age Estimation Algorithm for Public Display

***Song-woo Choi, Suk-Ju Kang***
**Dept. of Electrical Engineering, Dong-A University,**
**37 Nakdong-Daero, 550 beon-gil Saha-gu, Busan, South Korea**
*Tel.:82-51-200-5634, E-mail: songwoo602@gmail.com, kangx80@gmail.com*

The automatic age estimation technique has a lot of potential in various fields. Especially, in these days, the age estimation technnique can be used for public display based on the human-computer interaction (HCI), e.g. an automatic advertising display system for specific age group. Conventionally, various types of methods have been proposed. First, the SVM classification method based on the intensity of facial images, which are feature vectors. However, its accuracy is low when it is practically used, even though it requires lots of the memory resources for storing feature vectors. In this paper, we propose a new age estimation method based on edge density as a feature vector for SVM classification, to improve the performance of the age estiamtion. Specifically, the proposed method nomalizes the intensity of images to acquire facial images that are in a simliar condition. After that, it performs canny edge detection to extract the edge density that is used as a feature vector for SVM classification. In experimental results, the accuracy of the proposed algorithm in each age group was 90.63% (Child), 93.33% (Adult), and 85.71% (Senior), and it was better than the accuracy of conventional method based on the SVM classification with the intensity of facial image.

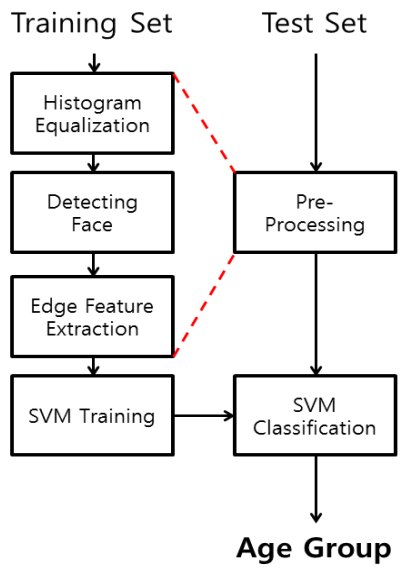


**Fig. 1. A flow chart of the proposed method**

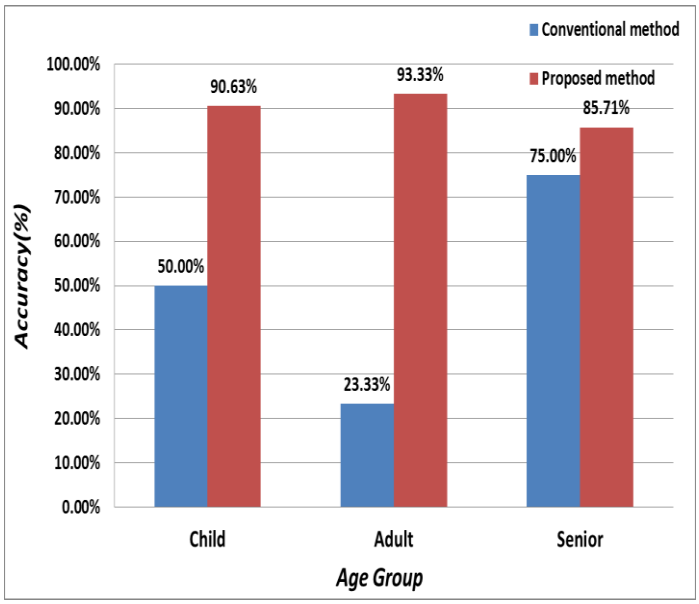


**Fig. 2.Performance comparison of each method**

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