

## ***Abstract: An Efficient Framework for Vision-Based Gesture Recognition***

Hyunsoek Choi and Hyeyoung Park\*  
*School of Computer Science and Engineering*  
*Kyungpook National University*  
*Sangyuk-dong, Buk-gu, Daegu 702-701, Korea*  
*Tel) +82-53-950-7357, Fax) +82-53-950-6346*  
*choihs@ee.knu.ac.kr, hypark@knu.ac.kr*

### **Abstract**

This paper presents an efficient framework for vision-based gesture recognition that can be easily implemented with low computational costs. For feature extraction, instead of using complicated image processing techniques, we employ the difference between image frames in order to achieve robustness against illumination changes. We then apply a locality preserving linear projection method to reduce the dimensionality of images. For classification, we employ the K-Nearest Neighbor classifier combined with dynamic time warping for dealing with variations in the length of image sequences. In addition, we propose using the statistical distance between two gesture data in K-Nearest Neighbor classification instead of the usual distance measure to achieve robustness against translation variations. We confirmed the plausibility of the proposed method through computational experiments on benchmark data for hand gesture recognition.

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