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Mobile Application Based Translation of Sign Language to Text Description in Kannada Language

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Abstract—Sign language is a main mode of communication for vocally disabled. This language use set of representation which is finger sign, expression or mixture of both to express their information among others. This system presents a novel approach for mobile application based translation of sign action analysis, recognition and generating a text description in Kannada language. Where it uses two important steps training and testing. In training set of 50 different domains of video samples are collected, each domain contains 5 samples and assign a class of words to each video sample and it will be store in database. Where in testing test sample under goes preprocessing using median filter, canny operator for edge detection, HOG for feature extraction. SVM takes input as a HOG features and predict the class label based on trained SVM model. Finally the text description will be generated in Kannada language. The average computation time is minimum and with acceptable recognition rate and validate the performance efficiency over the conventional model.

Keywords—Gesture recognition, Image processing, Sign language, Video processing.

1 Introduction

The activity recognition aims to recognize the actions and goals of one or more agents from a series of observations on the agents' actions and the environmental conditions. Since the 1980s, this research field has captured the attention of several computer science communities. Due to its strength in providing personalized support for many different applications and its connection to many different fields of study such as medicine, human-computer interaction, or sociology. In image processing, input is taken as an image later perform processing on that image based on the requirement. Many types of input are to be taken in image processing such as a video, image or collect frames from video and after output is produced in the form of an image or set of parameter related to image. The use of image processing for improve the image quality and gather useful information in the image this process is called as