

Chapter Real-Time Identification of Medical Equipment Using Deep CNN and Computer Vision

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July 2023

DOI: [10.1007/978-3-031-35081-8_25](https://doi.org/10.1007/978-3-031-35081-8_25)

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Abstract

Sign language is a way of communication in which hand gestures and symbols are used to connect with each other. Communication provides interaction among people to exchange feelings and ideas. Similarly, when it comes to the handling of medical equipment using a robot, sign language should not be a barrier to carrying out such applications. The purpose of this work is to provide a real-time system that can convert Sign Language (ISL) to text format. Most of the work is based on the handcrafted feature. This paper concentrates on introducing a deep learning approach that can classify the signs using the convolutional neural network. First, we make a classifier model using the signs, then using Kera's implementation of convolutional neural network using python we analyze those signs and identify the surgical tools. Then we process another real-time system that uses skin segmentation to find the Region of Interest in the frame. The segmented region is fed to the classifier model to predict the sign. The predicted sign would gradually identify the surgical tool and convert the sign into text. Keywords Deep CNN surgical equipment computer vision kera's implementation Gesture recognition Image processing

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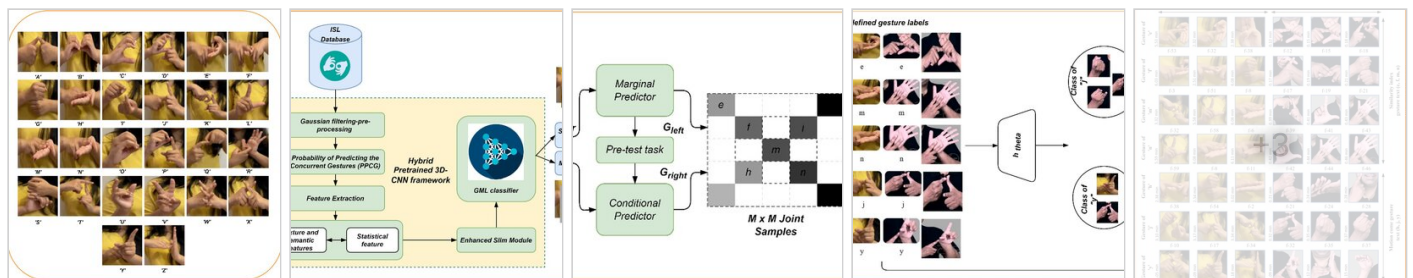
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