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# Human Activity Recognition Using CNN

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**ABSTRACT :** In this paper used of human activities detection is increasing day by day for banking system malls, hospitals colleges etc. The purpose of this system is better, needs to capturing of human activities viz. punching, fighting, running, theft activities, slow or fast walking etc. In this system Conventional neural network (CNN) is used to classify and point out actions. In human activities recognition system is written on windows as well as android platform and used in real time. We evaluate the corrections filter for human activities recognition using multiple inputs and multiple outputs ( MIMO) using CNN .

**KEYWORDS:** CNN, Human Activity Recognition, Android.

## I. INTRODUCTION

Human posture recognition technique ability to our system to identify the activity executed by a persons. It mainly aims at observation and examine activities of humans to explain ongoing events successfully it was conventionally done by human operators. For instance process of observe patient health condition, child care, home care etc. In this paper a profound model based on CNN is proposed where human activities are detection based on input data provided while training the model In general human activity recognition model (HAR) model involves starting form collecting inputs to a termination where currently perform activities pick out. Human activity recognition (HAR) aims to understand human behaviour and assign label to each action. The goal of human activity recognition using deep learning is to examine activities form video sequences or still images.

The observation time should be less to captured human activities, but the estimated values become unstable for that reason, we used filtering manners for the estimated values to improve detection accuracy there are to consequence types of application towards human activity recognition system (HAR). The first form of application is to be deals with recognition of behaviour form a given section of human motivation the second form of application is where the human motion acts as a command to the whole system interface to carry out specific set of task a significant advantages of this integrated systems is the real time as well as it is a full time supervision the main characteristic the human activity identification(HAI) are sense, capture/ recognize and analyze human movements and observation of some specific processes.

## II. RELATED WORK

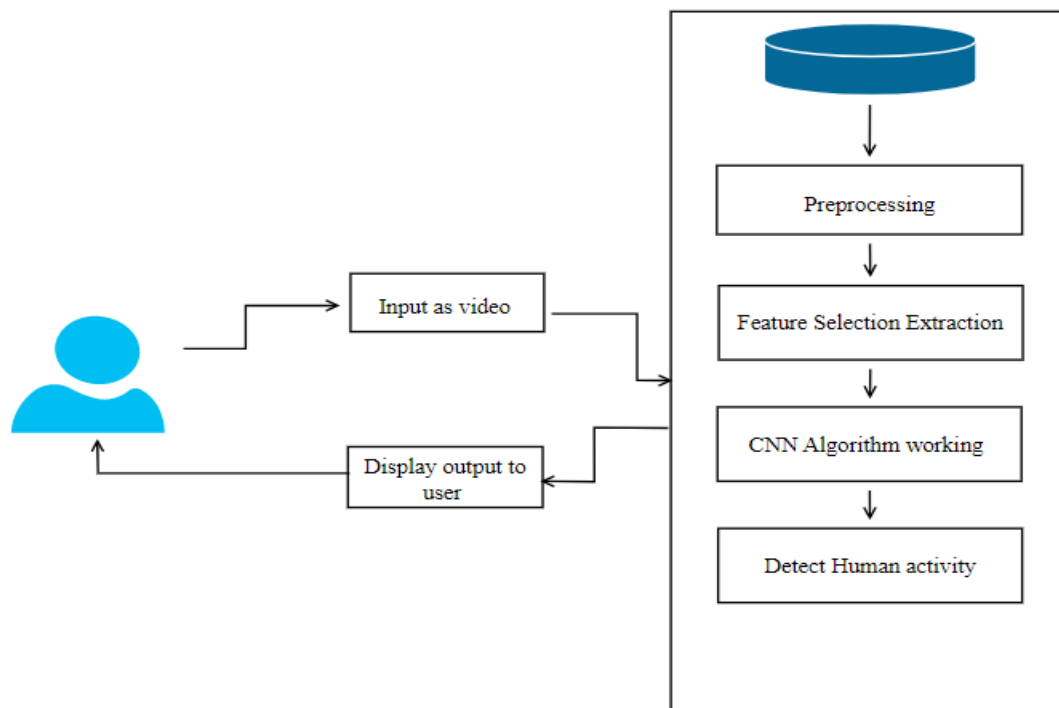
[1] A Partially Binarized Hybrid Network System for Low-Power and Resource Constrained Human Activity in this Paper We have The proposed HAR system, Conventional neural network(CNN) is used to classify in five classes(stationary, walking ,running, biking, driving)Through the preprocessing and the HNN stage.

[2] Deep Learning Based Real-time Daily Human Activity Recognition and Its Implementation in Smartphone Both the time and frequency domain signals of the actions have comparable outcome but time signals are better in terms of representing motion data for deep leaning classification as well as recognition.

[3] Human Activity identification in this paper, This paper has presented the experimental results of a CNN, SVM for the HAR. This research work has concentrated on training, testing, and evaluation of multiple exercises. The accuracy obtained is 98.90% for a sample data set using a confusion matrix where the accuracy percentage obtained for SVM Model and RCNN model is 92.50% and This CNN model can automatically learn the required features from input (raw) data to make accurate predictions. New datasets or videos can be used, which can be adopted quickly and cheaply by using the same model. The model is suitable for predicting Sleeping, Tilting majorly. The model has a scope of improvement in Walking and reading activities, which can be done using more advanced neural network designs or making few modifications in the model.

[4]A Survey on Human Activity Recognition using Sensors and Deep Learning First, pre- processing has been done on the given data. Background removal: It might be essential to separate the person from the background or to exclude any noise. Bounding box creation: Certain algorithms, especially those in MPPE, produce a bounding box for each person in the image. The human posture is then analyzed separately for each bounding box. Image registration and camera calibration: - When several cameras are used, image registration is needed. Camera calibration also helps translate recorded ground realities to standard world coordinates in the case of 3D human pose estimation.

### System Architecture



In system architecture ,firstly user are registered then login get input as a live video after Preprocessing on that dataset .In preprocessing remove blur background as well as noise removed. Next step is feature Extraction which is used to reduce the amount of redundant data form dataset .In the end ,the reduction of that data it help to build the model .Convolutional neural network(CNN) is used to image detection and recognition. **Convolutional neural network** is composed of multiple building blocks, such as convolution layers, pooling layers, and fully connected layers, and is designed to automatically and adaptively learn spatial hierarchies of features through a backpropagation algorithm then detect human activity. Output display to user.

### Objective:

To identify a method achieving more accurate human activity recognition by using suitable tools.  
To propose a mechanism of an automated analysis or interpretation of ongoing events and their context from video data.

### Expected output

We have proposed a Human Activity Identification system based on pose estimation and Conventional Neural Network.  
We have Proposed a Human Activity Recognize and pass Alert Message to system when any suspicious activity are happen.



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