KESHAV MEMORIAL INSTITUTE OF TECHNOLOGY
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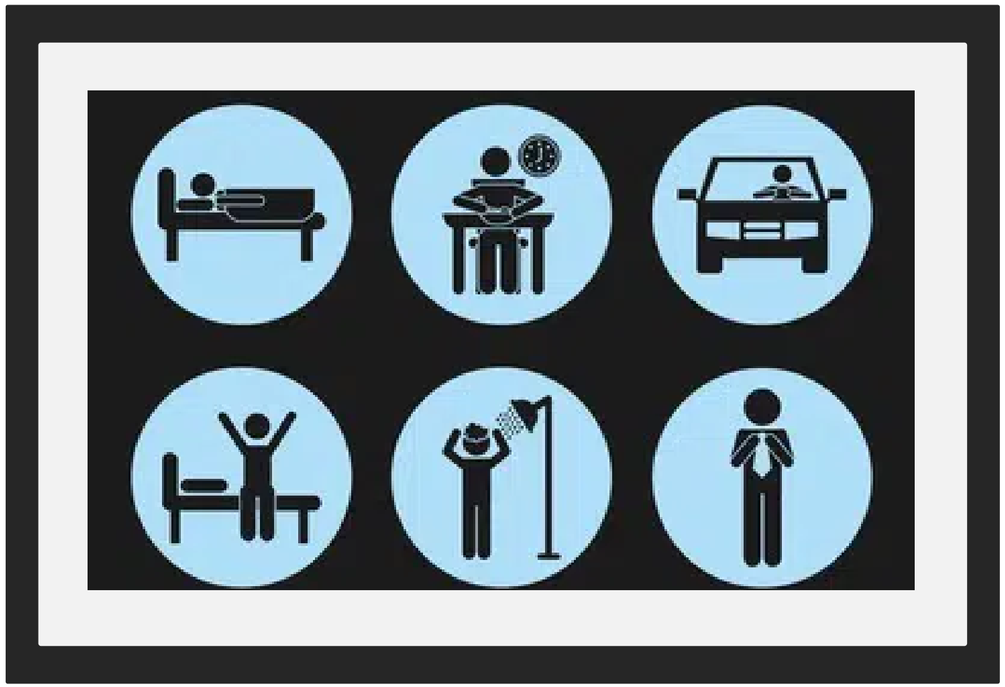
Automated Human Action Recognition and Classification framework using Long Recurrent Convolutional Network



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INTRODUCTION

- Human Action Recognition is a fundamental task in computer vision and artificial intelligence that involves automatically identifying and categorizing human actions or activities in videos.
- This technology has numerous real-world applications, such as video surveillance, human-computer interaction, sports analysis, and more.

OBJECTIVE

The main objective of this project is to implement and train a model for human action recognition in videos using a combination of CNN and LSTM layers.

LITERATURE SURVEY

Human Activity Recognition(2014):

- Human activity recognition is an ability to interpret human body gesture or motion via sensors and determine human activity or action . Most of the human daily tasks can be simplified or automated if they can be recognized via HAR system

Human Action Recognition Based on Multi-level Feature Fusion(2020):

- A deep learning-based method of multi- layer feature fusion for human motion recognition is presented. Combined with the Convolutional Autoencoder (CAE), it makes full use of the detailed features of the CNN middle layer.

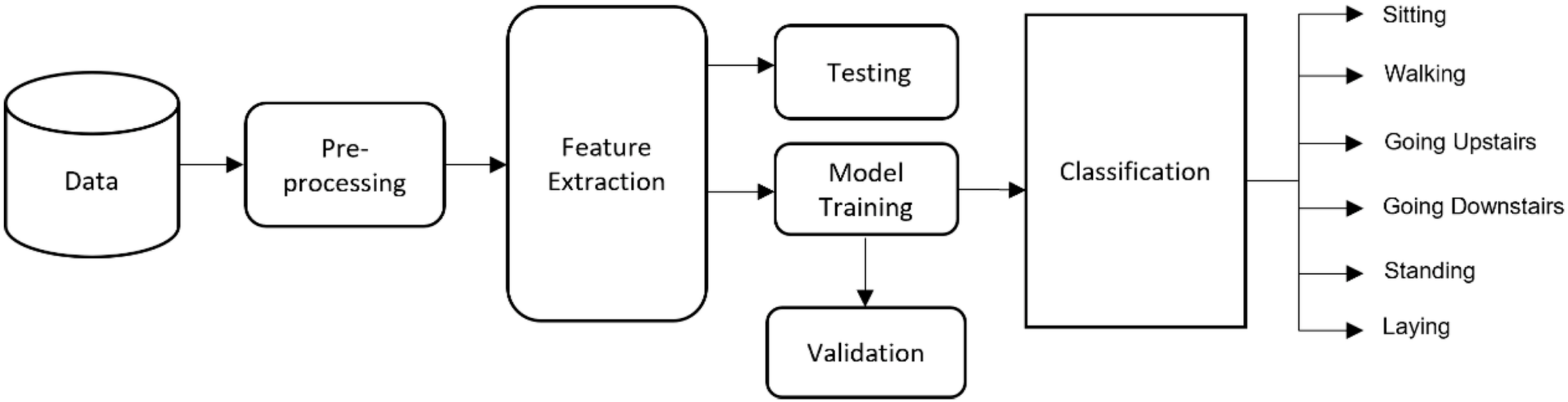
Deep Learning for Human Action Recognition(April 2021) :

- Neural Networks, Deep Learning, SVM, KTH, CNN, Action recognition, Confusion Matrix.High speed processors available for computing are not sufficient for processing deep learning models as the tensors of very large size created after preprocessing datasets.

Human Action Recognition From Various Data Modalities(2022):

- HAR is an important task that has attracted significant research attention in the past decades, and various data modalities with different characteristics have been used for this task. In this paper, we have given a comprehensive review of HAR methods using different data modalities

METHODOLOGY



METHODOLOGY

Step 1: Preprocess the Dataset. For this, we are using a Dataset called UCF50-Action Recognition Dataset.

Step 2: Split the Data into Train and Test Set

Step 3: Implement the LRCN Approach

Step 4: Construct the Model

Step 5: Compile and Train the Model

Step 6: Plot Model’s Loss & Accuracy Curves

METHODOLOGY

Implement the LRCN approach

- Construct the Model
- Compile and train the model
- The LRCN (Long-term Recurrent Convolutional Network) architecture is used for action recognition. The model combines CNN layers for spatial feature extraction and LSTM layers for temporal sequence modeling.

THANK YOU