

Name of Scholar: Umme Aiman
Name of Supervisor: Prof. Tanvir Ahmad
Name of the Department: Computer Engineering
Topic of Research: Human Action Recognition using Machine Learning Techniques

Findings

1) Vision based hand gesture recognition:

It involved the development of an innovative method for the recognition of hand gestures using computer vision based approach. This research endeavors to present a fresh approach to feature extraction for hand gestures, employing a combination of skeleton-based techniques and a graph convolution network.

2) Vision based posture correction for workouts in images:

It involved the development of an inventive approach for facilitating home-based workouts through a single reference image. The work leverages from pose estimation techniques to establish a real-time fitness instructional environment.

3) Video based posture evaluation for exercises:

It involved the development of a vision-based technique for the monitoring and supervision of individual workout sessions. The primary objective of this study is to categorize each person's exercises and subsequently predict the correctness of the corresponding exercise postures.

4) Video based evaluation, mistake recognition and feedback for workouts:

It involved the development of a sequential process that begins with the categorization of a person's activity, followed by an assessment of their pose, and concludes with the provision of feedback regarding any deviations or errors.