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**AMITY UNIVERSITY**

UTTAR PRADESH   
**Amity School of Engineering and Technology**Minor Project

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**Industry Guide**

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**Project Information**

1. Project Duration : **(113 Days)** a) Date of Summer Internship commencement **(23/07/2021)**

a) Date of Summer Internship Completion **(12/11/2021)**

1. **Topic**

Human pose estimation using Artificial Intelligence with Virtual gym tracker

1. **Project Objective**

We will build our very own AI powered gym tracker using AI Powered Pose estimation. We will leverage MediaPipe and Python to detect different posts from a webcam feed. Then render the results to the screen using OpenCV. The method uses pose estimation to track athletes, recognize their performed exercises, count the repetitions, and analyze the performance of the repetitions.

1. **Methodology to be adopted**

Firstly we will set up MediaPipe for Python. Then we will Estimate the poses using your Webcam and OpenCV. After that we will extract join coordinates from the detected pose. Then we will calculate the angles between joints using Numpy and Trigonometry. Then we will Build our AI Powered Gym Tracker to count the reps. 1) Install and Import Dependencies 2) Make Detections 3) Determining Joints 4) Calculate angles 5) Curl counter

1. **Brief Summery of project(to *be duly certified by the industry guide)*** In the field of computer vision, human pose estimation is gaining popularity. Human pose estimation can be

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developed using Artificial Intelligence or Machine Learning, in which the system is fed sample data or trained models and can therefore locate joints in the human body over video or picture. Now that the joints of the human body have been localized, we can utilize it for a variety of purposes, such as following the motions of a professional athlete to learn about the physical techniques and strategies used to achieve his or her success. Thus one of the applications of Human pose estimation could be developing a smart gym trainer software, that could help struggling body builders to achieve their goals. Involving machine learning technology in fitness industry could help the judges to count repetitions of any exercise during Weightlifting or CrossFit competitions.

Signature Signature Signature

(Student) (Industry Guide) (Faculty Guide)