DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

PROJECT PROPOSAL

1. Project Title: -Yog Pose Coaching System Using ML

2. Project Scope: -

The Yog Pose Coaching System Using Machine Learning aims to revolutionize the practice of yoga by integrating advanced pose estimation and real-time feedback mechanisms. This system is designed to assist users in accurately performing yoga poses through the utilization of machine learning algorithms that analyze body movements captured via a camera. By providing immediate feedback on posture and alignment, the system will help users improve their technique, prevent injuries, and achieve better results in their yoga practice.

The project will focus on developing a robust pose detection framework using machine learning models, such as OpenPose or PoseNet, to capture and interpret user poses with high accuracy. The system will involve both a user-friendly interface and a sophisticated back-end that integrates pose estimation models, feedback generation algorithms, and data management tools. Key features include real-time pose analysis, personalized feedback based on individual performance, and a progress tracking mechanism that records users' practice over time.

In addition to the core functionalities, the project will also explore the integration of various advanced features to enhance user experience. This includes incorporating voice and visual cues for feedback, supporting multiple languages for broader accessibility, and ensuring compatibility with various devices such as smartphones and PCs. Future enhancements may involve incorporating virtual reality (VR) for an immersive experience and AI-driven personalized coaching to adapt feedback based on the user's progress and performance. The project's success will be evaluated based on the accuracy of pose detection, effectiveness of feedback, and overall user satisfaction

3. Requirements: -

- Hardware Requirements
  1. Camera
  2. Computing Device

- Software Requirements

  1. Data Analytics and Processing
  2. Python Libraries (NumPy, Pandas, OpenCV, media pipe)
  3. Machine Learning
  4. Python

4. STUDENTS DETAILS

Name	UID	Signature
Shivangi Rai	21BCS6155	
Sachin Saini	21BCS6025	

APPROVAL AND AUTHORITY TO PROCEED

We approve the project as described above and authorize the team to proceed.

Name	Title	Signature (With Date)
Mr. Raghav(E16302)	Supervisor	