YooGA

You personel AI yoga trainer
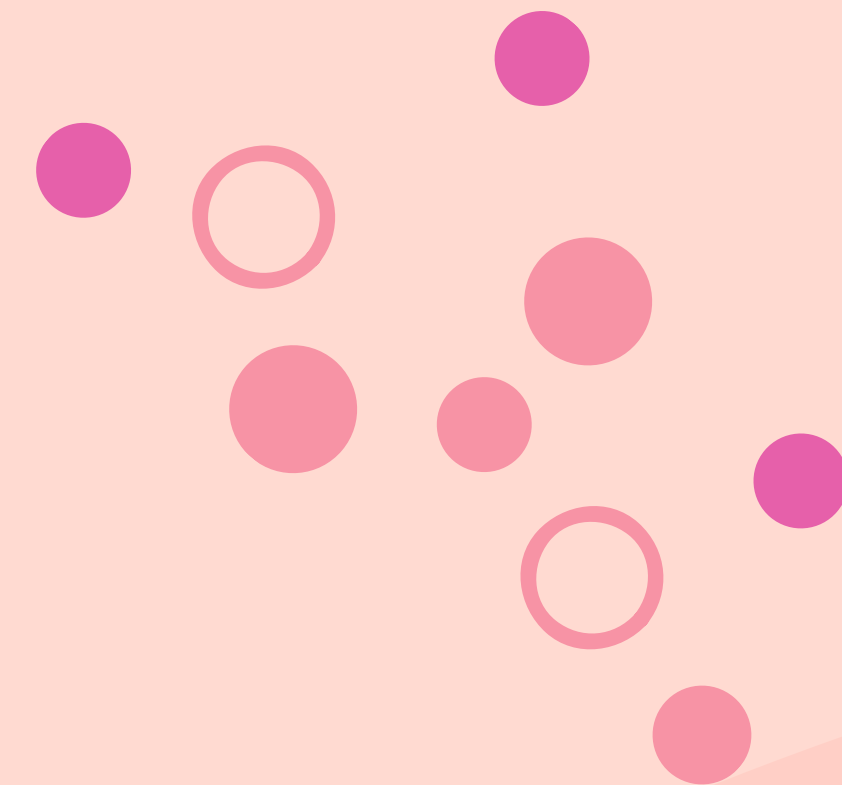
Presented by:
Perceptron peers

Problem statement

- In today's sedentary lifestyle, maintaining good posture is challenging. Poor posture can lead to back pain, neck strain, and fatigue.
- With remote work and increased screen time, awareness of proper posture is crucial for health.
- Yet, many lack the tools and awareness to monitor and correct their posture.

Objective

- Develop a real-time posture monitoring system integrated into a website, analyzing the user's posture using their device's camera.
- The system provides immediate feedback, highlighting areas for posture correction, and offers personalized tips and exercises to improve posture gradually.
- It aims to empower users to adopt healthier postural habits, reducing the risk of musculoskeletal issues and promoting overall well-being.

Tech Stack Used

1 mediapipe

- An open-source library developed by Google that offers ready-to-use ML solutions for tasks like face detection, hand tracking, pose estimation, and more.

- The Pose module from "mediapipe.solutions" is utilized to detect key landmarks on the human body in real-time using the device's camera. These landmarks are then used to calculate angles between body joints and classify different yoga poses.

2 pyttsx3

- The pyttsx3 library initializes a text-to-speech engine, allowing the system to speak out instructions and feedback to the user based on the detected pose.
- It reads text from files (intro.txt, TPose.txt, etc.) and converts it into audible speech.

3 OpenCV

- OpenCV is a computer vision library used for image and video processing.
- It is used to capture video frames from the device's camera and display the real-time feed with overlays indicating the detected pose and landmarks.
- It is a versatile library that provides a wide range of tools and algorithms for various computer vision tasks.

NumPy

4

- NumPy is a library for numerical computing in Python. It is used here for handling arrays and performing mathematical operations efficiently.

- For example, it is used to store and manipulate coordinates of landmarks obtained from the mediapipe library and calculate angles between body joints.

Other Dependencies

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- HTML: Provides the structure and content of the webpage. Use HTML to create elements such as buttons, dropdowns, video containers, and text areas.
- CSS: Used for styling and presentation of the webpage.For the appearance of HTML elements, including colours, fonts, sizes, margins, padding, and positioning.
- JS: JavaScript is used for interactivity and dynamic behavior of the webpage.

Thank you

Click here for our demo video