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YOGA POSE DETECTION AND CORRECTION

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ABSTRACT

Yoga is a very beneficial physical activity and has wide applications in personal care. Many studies have shown that yoga can be used as physical therapy for many health problems such as cancer, musculoskeletal diseases, depression, Parkinson's disease, respiratory and heart disease

and more. In yoga, it is important to keep the body in good shape; To achieve good posture, a lot of work needs to be done on the muscles, ligaments and joints. Posture-based yoga can improve flexibility, strength, and mental activity and reduce stress, blood pressure, and back pain. Correct posture is important to prevent strain on the joints, ligaments and spine in yoga asanas, especially when bending forward or backward in poses such as uttanasana, kurtasana, ustrasana and dhanurasana. It is important to pay attention to the postural relationship of your body so that you can hold the body correctly while doing different asanas. Advances in computer vision algorithms and sensors have made it possible to predict yoga poses and identify movements. Therefore, practitioners can now use technology to enhance their yoga practice and achieve better results. This article shows a way to analyze yoga poses performed by the user and correct them instantly.

INTRODUCTION

Yoga is a safe and effective practice that increases physical strength, especially strength, flexibility and balance, while also improving physical and mental health. It is a full-

body exercise that improves the mind and body through deep breathing, meditation and relaxation. Yoga is especially beneficial for people with high blood pressure, heart disease, anxiety or depression because regular practice can help reduce these symptoms. That's why yoga has beco

me popular around the world in recent years. However, learning yoga can be difficult for many people due to many obstacles. For example, in Myanmar, it is difficult for the elderly to attend yoga classes due to the lack of public transportation. br> De-escalate while doing yoga. Instant insights and optimization of the body can help doctors prevent injuries and manage the process correctly. This is especially important for new practitioners who may not have the necessary skills to complete the poses properly. All the benefits of yoga, such as increased flexibility,

SYSTEM REVIEW

Strength and brains obviously require form and correct technique. Practitioners can increase productivity and benefit from practice by providing physical and physiological advice. room or car, especially for people living in remote or rural areas. Individuals who practice yoga in the comfort of their homes and receive quick feedback can benefit from the benefits of yoga without going to class.

Yoga poses performed by a person and then provides instructions for users to improve their bodies without direct attention to people. While capturing a series of images of a person, it uses advanced algorithms to analyze the captured images to evaluate the accuracy of the poses, which then provides users with intuitive ideas to improve their yoga practice. A comprehensive guide and technology designed to solve challenging tasks such as classifying and tracking yoga poses. Agrawal et al. [1] introduced a new machine learning technique that uses the power of the tf-

pose prediction algorithm to create complex yoga pose skeletal models. Their method is to photograph yoga poses with a camera and then use it to create detailed models of the bones. They basically extracted important features, such as clustering, from these patterns and used them as input to machine learning models. The training and evaluation process uses files containing 10 different yoga poses

with 400 to 900 images per set.

data was divided into 80% for training and 20% for testing, and

was used for the difference between learning machines to evaluate the effectiveness of the model. The result was an overall success rate of 94.28%, demonstrating the ability to identify correct yoga poses. More specifically, the random forest classifier performs well with 99.04% accuracy across all models. The authors think

technologies will be useful in many areas, including yoga training and monitoring phy

sical fitness. Method

The style has twelve different steps. Their main goal is to use video surveillance as a way to track body movements and posture during yoga practice. They use a camera to record video from the side view, specifically the left side. They create a 3D kinematic pose estimation model using a bottom-

up approach to capture the practitioner's poses. This involves creating a complete body according to various physical requirements. To identify these physical objects, they used a deep learning-

based prediction algorithm that is used to identify the body of input images or snapshots. A 3D pose is then created by applying inverse kinematics to the body parts. The proposed algorithm will then compare the points obtained from the vectors with the data obtained from the test set and training set recorded using the same method and stored in the information.

A new hypothesis was put forward by Kotak et al. [3] introduced a method combining Media Pipe and angle heuristics to classify yoga poses. They took thirty-

three important points of the body, taking the Blaze Pose model, which provides more important points than the traditional method. These highlights are then analyzed using the Media Pipe library. To calculate the body pose, the angle heuristic is used to determine the angle between two key points. The input file contains 50 models; Each model has 50 images divided into standing and sitting models with 5 and 4 groups respectively. The technology calculates the angle for each problem by averaging five test images. This method combines advanced technology and advanced techniques to accurately isolate yoga poses. The Blaze

Pose model and Media Pipe library provide more detail to help identify

important elements. Using the angle heuristic to determine the angle of these key points can achieve an accurate classification. Current technology is especially useful for yoga practitioners who want to monitor their postures without needing the expertise of a teacher. [4] investigated a physical measurement system that uses sensors such as accelerometers, gyroscopes, and magnetometers to instantly detect the human body. Their system

provides two methods of gesture recognition: rule-

based and machine learning. Although the technology is flexible and perfect, it also c

auses problems in applications in medicine, sports and ergonomics. These include cost considerations, difficulty in defining certain behaviors, and potential privacy issues. Therefore, it is important to carefully consider these limitations and restrictions before deployment. Overall, this system offers a practical option to heal the body and promote healthy behavior in all activities. Way

When.

CONCLUSION

As a result of the COVID-

19 pandemic, exercising in one's own space and with equipment has led many people to turn to yoga to gain physical activity. However, improper practice of yoga can cause injuries. To make the process safe and correct, we have developed an app that can help you discover and correct yoga postures at home with the help of simple tools.

REFERENCES

The aimis to make it easy to use, easy to understand and accessible to people of all ages.

The challenge is to collect data on guidance prepared by experts and

compare the results with users. Scan multiple images and use them to describe various yoga poses, then save them for future use. Appropriate hardware and software are needed to create diagnostic and corrective yoga poses. Precision can be reduced

toby using bootstrapping and random feature selection to train the data and avoid overfitting. This method

selects a portion of the training data, builds a decision tree for each location, selects only a set of features, and

uses majority voting for the final prediction. Random feature selection reduces

correlation