# **Fit Mate A.I. – Personal Fitness Trainer**

*“FITMATE AI, A PERSONAL FITNESS TRAINING WEB APPLICATION”*

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**ABSTRACT**

Over the past five years, as people have sought to improve their health, the popularity of fitness solutions has skyrocketed. In recent years, there has been a significant surge in the use of artificial intelligence in healthcare. Nowadays, everyone is health-conscious, and there has been a significant increase in people's care for their own fitness and personal health. Even afterward, accidents brought on by inappropriate exercise. In the fitness sector, technique is still one of the key issues. Among the current options include paying for personal training, which can be expensive, and using software connected to exercise, some of which do not function as intended. Our goal is to bring the fitness sector online. In order, to do that, we created a web-application that uses video processing to provide users with an artificial intelligence-based trainers. With the aid of an AI trainer, users of this application can work-out on a regular basis at home. Additionally, users find this application helpful in solving health issues, such as being overweight or having other issues. We have chosen to carry out this idea since there are not enough fitness instructors in India or because many people cannot afford the expense of a gym membership. The software that we have created is known as "Fit Mate AI." This software counts the repetitions users do during a workout and detects their attitude to help users improve their body posture. This AI-based Workout Assistant and Fitness Guide can aid people who do not have access to a gym but wanted to be active at home. Personalized health and nutrition regimens, along with a daily workout calorie count, are all included to guarantee that customers are performing the exercises correctly and prevent both short- and long-term problems.

**Keywords:** Fitness, Health, Exercise, Artificial Intelligence, Neural Network, Deep Learning, Computer Vision.

1. **INTRODUCTION**

**BACKGROUND**

Technologies which include virtual wearables improved with AI are properly perfect for the health industry. Some of those merchandise and answers have come to be greater extensively adopted, even as others are just starting to penetrate client awareness.

Finally, synthetic intelligence will completely input the health-associated field. Advances in synthetic intelligence make extra responsive, customizable, and immersive virtual health assistants available each year. For example, the “emotion” among people, that is the reason why coaching offerings can't be replaced.

AI could make computationally unique decisions, however it can't meet educators` consider desires in a human-like way. While advances in AI can also additionally gas essential personalization techniques, achieving a spiritual and family-pleasant enjoy is a short-lived challenge. This aim is supported with the aid of using the human motivation hypothesis. Consistent warranty on the spiritual degree is critical each for the improvement of the person and for the general reason of the personality.

Artificial intelligence has top notch effect on health trainers, however that`s now no longer all. The foremost factor that the machine isn't always capable of reproduce and reap is entire disgust with sports activities injuries. Fitness training is not often straightforward, and important and minor issues can stand up for the duration of the training process. While the Sharp impediment education tool Tonal lets in customers to manually reduce the weight of the education and as a result store the settings, for character not unusual place limitations the client absolutely has to by skip a “proper self-assessment” of the way to teach safely.

Sensoria gives a comparable AI-primarily based totally wearable framework actually deliberate for walking. The Sensoria degree collects statistics from fancy apparel (Sensoria's personal apparel or different IoT-enabled apparel). These statistics estimate the scope of improvement and biometrics. This includes coronary heart rate, the velocity at which the foot reasons turmoil with inside the town and at the pedals, and the force of effect at the same time as walking.

Sensory assessments now no longer best provide recommendations for enhancing and enhancing exercising programs, however additionally test and locate capacity wounds for the duration of standby and distinguish factors of failure in the activity chain. The making plans attention of the Sensoria framework is to serve clients with healthy lifestyles and dynamic lifestyles.

**AIM AND OBJECTIVE**

There have been two important goals: to offer a bottom-up approach for real-time segmentation and estimation of the user`s posture, and to construct a single-shot technique that turned into effective.

The purpose of AI is to create algorithms that permit computer systems to suppose like humans. Expert systems, sample recognition, language comprehension, computerized computation results provision, and automated programming are examples of these. Robotics, recreation theory, intelligent choice guide systems, and synthetic neural networks also are examples. Because of this, AI is focused on positive applications. As synthetic intelligence (AI) advances, so do the training possibilities”

**RESEARCH QUESTIONS**

The predominant studies questions are:

* What is the usage of the Fit Mate AI?
* How can Fit Mate AI assist to enhance the frame posture of the human beings through detection of exercise and whether it assist users properly for achieving his or her goal?

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