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# Virtual Yoga Assistant using Machine Learning and Artificial Intelligence

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**Abstract:** *In recent years, yoga has become an integral part of life for people worldwide. This growing interest has created a demand for scientific analysis of yoga postures. Pose detection techniques offer a promising approach to identify and assist people in performing yoga poses with greater accuracy. However, posture recognition remains a challenging task due to the limited availability of datasets and the difficulty of real-time posture detection.*

*To address this, a large dataset has been developed with over 5,500 images representing ten different yoga poses. A tf-pose estimation algorithm is used to create a skeletal overlay on each image in real time, drawing the human body's skeleton to extract joint angles. These joint angles serve as features for training various machine learning models. The dataset is split, with 80% used for training and 20% for testing. This approach has been tested on multiple machine learning classification models, achieving an accuracy of 99.04% with a Random Forest Classifier.*

**Keywords:** YOGI - YOga Gesture Identification dataset, Computer Vision, Machine Learning, Classification, Gesture Recognition