

## Abstract:

In order to study and evaluate yoga postures, this final-year project covers the design, development, and implementation of a Yoga Pose Detection System that combines computer vision and machine learning approaches. By giving practitioners immediate feedback and direction, the method seeks to improve the quality of the yoga practice and help practitioners achieve better alignment, form, and general well-being. The research uses cutting-edge image processing algorithms to identify and extract important body landmarks and information from pictures or videos of people doing yoga positions. Utilizing a trained machine learning model, the system accurately identifies and classifies various positions, offering real-time feedback on alignment, balance, and good posture. Experts seeking guidance from beginners to seasoned practitioners refining their skills can all benefit from the offered solution. Keywords – Self-learning, Machine Learning, Yoga Pose Detection. I.

**INTRODUCTION** Yoga has been increasingly popular in recent years as people look for all-encompassing ways to enhance their general lifestyle, mental health, and physical health. There is a rising interest in using technology to improve yoga practice as it becomes more widely adopted in several fields. The creation of a Yoga Pose Detection system, which analyses and offers feedback on yoga postures using computer vision and machine learning techniques, is one potential direction in this respect. The goal of this senior project is to develop a reliable and precise Yoga Pose Detection system that will help people improve their yoga poses. The development of a Yoga Pose Detection system aligns with the broader trends in health and wellness technology, offering a novel solution to address the challenges individuals may face in perfecting their yoga postures. The integration of technology into yoga practice not only facilitates self-improvement but also opens up possibilities for remote learning, personalized workout plans, and data-driven insights into one's progress over time. Throughout this project, the focus will be on creating an accessible, user-friendly, and accurate system that can be deployed on various devices, including smartphones and web platforms. Additionally, the ethical considerations of user privacy and data security will be paramount in ensuring the trust and adoption of the proposed Yoga Pose Detection system. As the demand for health and wellness solutions continues to rise, the development of a Yoga Pose Detection system stands at the intersection of traditional practices and modern technology, contributing to the evolution of how individuals engage with and benefit from the ancient art of yoga