

Posture Flow: Extending Yoga Posture Tracking Using Artificial Intelligence and Ayurvedic Insights

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Abstract

Yoga offers profound benefits for physical, mental, and spiritual well-being, yet incorrect posture execution can cause injuries and diminish therapeutic value. To address this, we introduce Posture Flow, an Artificial Intelligence-driven yoga evaluation system that integrates Ayurvedic principles for personalized guidance and real-time safety feedback. Unlike conventional pose correction tools, Posture Flow adapts recommendations based on an individual's body constitution, promoting a holistic practice aligned with traditional wellness. Methodologically, the system employs OpenPose to extract skeletal keypoints and VGG19 to classify postural accuracy, achieving 94.57% accuracy in distinguishing correct from incorrect poses. Beyond personal wellness, Posture Flow has strong potential as an educational tool in yoga training programs, supporting students with immediate feedback and assisting instructors in monitoring large groups effectively. This work demonstrates how intelligent systems can modernize traditional practices while ensuring safe, personalized, and accessible yoga learning.

Keywords: deep learning, yoga, VGG19, skeletal points, ayurvedic