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Abstract

Indian classical dance has existed since over 5000 years and is widely practised and performed all over the world. However, the semantic meaning of the dance gestures and body postures as well as the intricate steps accompanied by music and recital of poems is only understood fully by the connoisseur. The common masses who watch a concert rarely appreciate or understand the ideas conveyed by the dancer. Can machine learning algorithms aid a novice to understand the semantic intricacies being expertly conveyed by the dancer? In this work, we aim to address this highly challenging problem and propose deep learning based algorithms to identify body postures and hand gestures in order to comprehend the intended meaning of the dance performance. Specifically, we propose a convolutional neural network and validate its performance on standard datasets for poses and hand gestures as well as on constrained and real-world datasets of classical dance. We use transfer learning to show that the pre-trained deep networks can reduce the time taken during training and also improve accuracy.

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