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BHARATA-DETECT

Bharatanatyam Hand Gesture Recognition

Using Object Detection

A dissertation by

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Abstract

Dance is a type of creative expression that combines rhythmic, coordinated bodily movement. It may be used to communicate feelings, tell stories, and share cultural customs. One such form of dance is bharatanatyam. The expressive gestures, and complicated rhythms of Bharatanatyam are well-known. The dance form incorporates a lot of foot movements, and face expression, as well as narrative via the use of mudras known as hand gestures. The problem generation these days face is the lack of professional coach to guide and train them, especially in rural areas. There is a lack of technology used to build an e-learning system that would be effective to learn these hand gestures. Thus, the proposed solution is a web application that would recognize bharatanatyam double hand gestures from images and videos. Where users can upload an image or a video, and the web app would recognize the hand gesture type using an object detection algorithm where it would let the user know the recognized hand gesture type. The choice of double hand gestures was due to the availability of a gap. By utilizing technology, the objective is to get over resource limitations that can restrict people from following their passion for dance.

Keywords: Hand gesture recognition, Bharatanatyam, Mudra, Hand gestures, Object detection, Faster RCNN, localisation, detection, deep learning, supervised learning, computer vision

Subject Descriptors: Computing methodologies → Artificial intelligence → Computer vision → Computer vision problems → Object detection