Expressing Human Sentiments through the Art Of Dance

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Abstract: *Emotions play a crucial role in human experience, influencing social interactions, behavior, and decision-making. This study explores the intersection of performing arts and artificial intelligence by analyzing emotional expressions in Bharatanatyam, a classical Indian dance form known for its expressive storytelling. Specifically, we focus on recognizing and classifying the Navarasas—the nine fundamental emotional states—through advanced pose analysis and machine learning techniques. By employing a biologically inspired neural framework, we aim to distinguish emotions based on full-body movements, bridging the gap between artistic expression and computational emotion recognition.*

Our approach integrates deep learning techniques, including Log-Gabor filtering, Max Pooling, Principal Component Analysis (PCA), and Support Vector Machines (SVM), to enhance posture recognition and classification accuracy. Additionally, Natural Language Processing (NLP) and sentiment analysis contribute to understanding the textual and symbolic representations of emotions in Bharatanatyam. Empirical analysis validates the effectiveness of our proposed model in accurately identifying emotional expressions, offering insights into AI-driven cultural preservation and digital dance analysis. This research has broad applications in automated dance evaluation, interactive learning, and human-computer interaction, providing a foundation for future interdisciplinary studies at the intersection of performing arts, artificial intelligence, and sentiment analysis.

Keywords: Emotion Recognition, Bharatanatyam, Navarasas, Pose Analysis, Machine Learning, NLP, Sentiment Analysis, AI in Performing Arts**.**