Abstract

This project focuses on developing a sophisticated classification system for yoga hand mudras using machine learning techniques. Yoga hand mudras, which are symbolic hand gestures integral to traditional yoga practices, are believed to influence energy flow and enhance meditation experiences. The primary objective of this project is to create an automated system that can accurately classify these mudras from images or textual descriptions. The system is designed around a comprehensive dataset that includes annotated images and descriptions of various mudras. The process begins with data preprocessing to ensure the quality and relevance of the input data. Feature extraction methods are then applied to capture the essential characteristics of each mudra. Various machine learning algorithms are explored to determine the most effective approach for classification. Key evaluation metrics such as accuracy, precision, recall, and F1-score are utilized to assess the performance of the developed models. Visualization techniques are employed to interpret the results, providing insights into model behavior and performance. The final model is integrated into a user-friendly interface, allowing users to input images or textual descriptions of mudras for real-time classification. This user interface is designed to be intuitive and accessible, facilitating ease of use for individuals interested in yoga practices. By automating the recognition of yoga hand mudras, this project not only advances the application of machine learning in traditional wellness practices but also aids in the preservation and dissemination of these ancient techniques in a modern context. The system offers a practical tool for both practitioners and educators, enhancing the accessibility and understanding of yoga hand gestures.