Machine Learning-Based Hand Sign Recognition

Yash Ramteke[1], Swapnil Thorat[2], Dhanashri Wani[3], Pushkar Chordiya[4], Prof. J. S. Pawar[5]
Department of AIML (Artificial Intelligence & Machine Learning)[1,2,3,4,5]
Loknete Gopinathji Munde Institute of Engineering Education & Research, Nashik, India

Abstract: *Machine Learning-Based Hand Sign Recognition is a project aimed at developing a robust and efficient system for recognizing hand signs and gestures using state-of-the-art machine learning techniques. Hand sign recognition holds significant potential in a wide range of applications, including communication assistance for individuals with hearing impairments, human-computer interaction, and automation in various industries. This project leverages deep learning models, particularly convolutional neural networks (CNNs) and recurrent neural networks (RNNs), to analyze and classify hand signs and gestures. The system is trained on a diverse dataset of hand signs, encompassing different gestures, poses, and lighting conditions, to ensure its adaptability and reliability in real-world scenarios. The project's success is contingent on the fine-tuning of machine learning models, thorough testing, and the incorporation of efficient computer vision techniques. Through rigorous evaluation and validation, we aim to achieve high accuracy and real-time performance. As a result, Machine Learning-Based Hand Sign Recognition has the potential to improve accessibility and convenience for those with hearing impairments, enhance human-computer interaction, and contribute to advancements in automation and robotics across multiple domains.*

Keywords: Machine Learning, Hand Sign Recognition, Convolutional Neural Networks, Recurrent Neural Networks.

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[2]. Swapnil Thorat, Under Graduate Student, Logmieer, Nashik, Maharashtra, India

[3]. Dhanashri Wani, Under Graduate Student, Logmieer, Nashik, Maharashtra, India

[4]. Pushkar Chordiya, Under Graduate Student, Logmieer, Nashik, Maharashtra, India