IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, April 2025
Impact Factor: 7.67

Sign Language Communication Using AI

Jay Bhoir , Dhruv Patel , Sagar Dethe , Akshay Darade , Asst Prof. Sana Pathan
Department of Information Technology
Indala College of Engineering, Kalyan, India
bhoirjay53@gmail.com, dvp2142003@gmail.com, dethesagar2002@gmail.com
akshaydarade54@gmail.com, sana.pathan@icoe.ac.in

Abstract: *We witness many people who face disabilities like being deaf, dumb, blind etc. They face a lot of challenges and difficulties trying to interact and communicate with others. This paper presents a new technique by providing a virtual solution without making use of any sensors. Histogram Oriented Gradient (HOG) along with Convolutional Neural Network (CNN) have been implemented. The algorithm recognizes the real- time image gestures, identifies the text, and gives voice output. In this paper, we introduce a Sign Language recognition. The user must be able to capture images of hand gestures using a web camera in this analysis, and the system must predict and show the name of the captured image. The captured image undergoes series of **processing steps, which include various Computer vision techniques such as the conversion to gray- scale, and mask operation. Convolutional Neural Network (CNN) is used to train our model and identify the pictures.*

Keywords: *Sign Language, Hand Gesture, Deaf People, Histogram Oriented Gradient (HOG), Confusion Matrix, Convolutional Neutral Network (CNN).*

DOI: 10.48175/IJARSCT-25361