# Bangla Sign Language (BdSL-D1500) Numerals Classification Using CNN Based Transfer Learning Models.

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**Abstract:** In recent years, researchers in the field of Artificial Intelligence have shown a lot of interest in several Bengali sign languages using Convolutional Neural Network technology with the help of Deep Learning, finding unique hand gestures to actually imitate the letters and numerals of that particular sign language. Bengali sign language is becoming more crucial that should be adopted in our society so that the hearing impaired and speech impaired people find an easy way of identifying it so that they are not excluded from our fast-paced modern society. In this research, we propose a method which will classify Bangla Sign Language Numerals using CNN based Transfer Learning Models. Bangla sign language images show substantial changes from natural images, primarily due to differences in colour of hands or variations in exposure of light that causes misinterpretation of the original numerical digits. The Transfer Learning Models have been trained with publicly available datasets of 13990 images and 10 different classes. In order to test the success rate of these methods, we have tested with test datasets consisting of 1010 images and 10 classes. The model using CNN was able to achieve a test accuracy of 0.99 in DenseNet121 and VGG16 on the Bengali sign language numeral test dataset. Our proposed model should be able to help Bengali hearing impaired and speech impaired people in an efficient and easy way.