Hand Gesture Recognition

Overview

We would develop a hand gesture recognition application using neural networks. It would be helpful for many areas: disability assistant, games, etc.

Task Description

Build American hand-based sign language recognition. The dataset includes cropped images of 1 palm. Each image corresponds to one English letter following an American sign-language alphabet (so there will be 26 classes). You can consider it as an MNIST database for sign language.

You have to do these steps to archive this:

1. Extract data from dataset and preprocessing it.
2. (Optional) Find good features for the recognition
3. Build the neural model to recognize the letter.

Dataset

https://www.kaggle.com/datamunge/sign-language-mnist/home
You would need a kaggle account for downloading. If you do not want to do that, you can download the dataset from here:
http://i13pc106.ira.uka.de/~tha/PNN18Projects/sign-language-mnist.zip

Requirements

- Build the model(s) for sign language recognition.
- Test your model(s) on some test images.

Evaluation

There is a test set in the dataset, and you can evaluate it using accuracy.

Notes

You have to implement your model **from the scratch** despite the availability of many such models out there.