



# HaGRID - Hand Gesture Recognition

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# Problem

- **Objective:** Develop an efficient Hand Gesture Recognition (HGR) system to meet the growing demand in digital communication and smart home applications.
- **Dataset Focus:** Utilize a subset of the extensive HaGRID dataset, incorporating annotations including bounding boxes, landmarks, and metadata.
- **Project Goal:** Create an accurate and versatile HGR system capable of recognizing and categorizing diverse hand gestures in various environments.

# Data

Images divided into **18** classes of gestures.



Subset of **1,000** images per class from a dataset with **552,992** images.

Contains **34,730** unique persons and at least this number of unique scenes.

The subjects are people from **18** to **65** years old.

# Data

Variation in lighting, including artificial and natural light.

Taken in extreme conditions such as facing and backing to a window.

0.5 to 4 meters from the camera



# Annotations

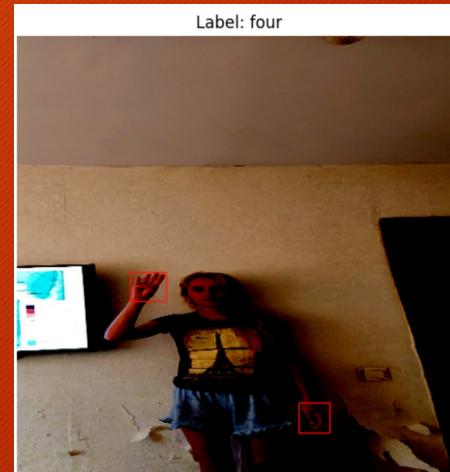
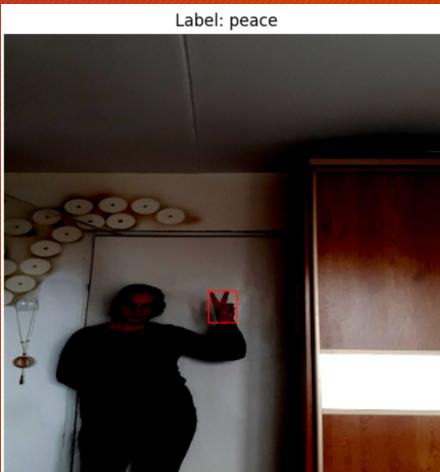
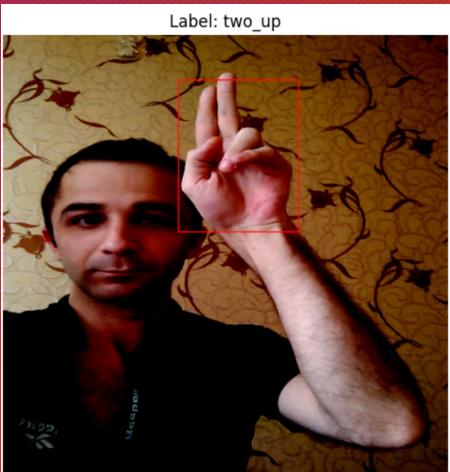
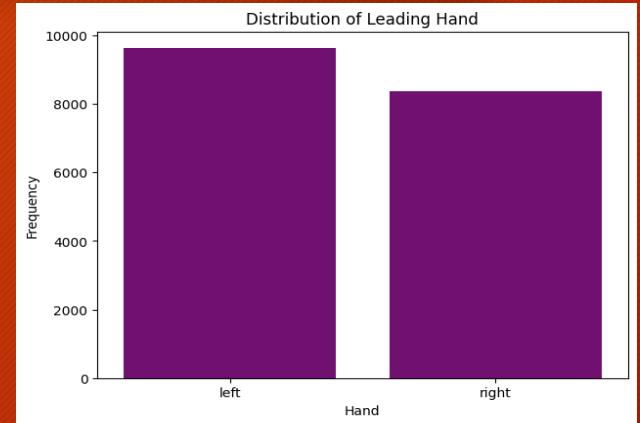
Each image's annotations contains:

Bounding boxes of hands with gesture labels

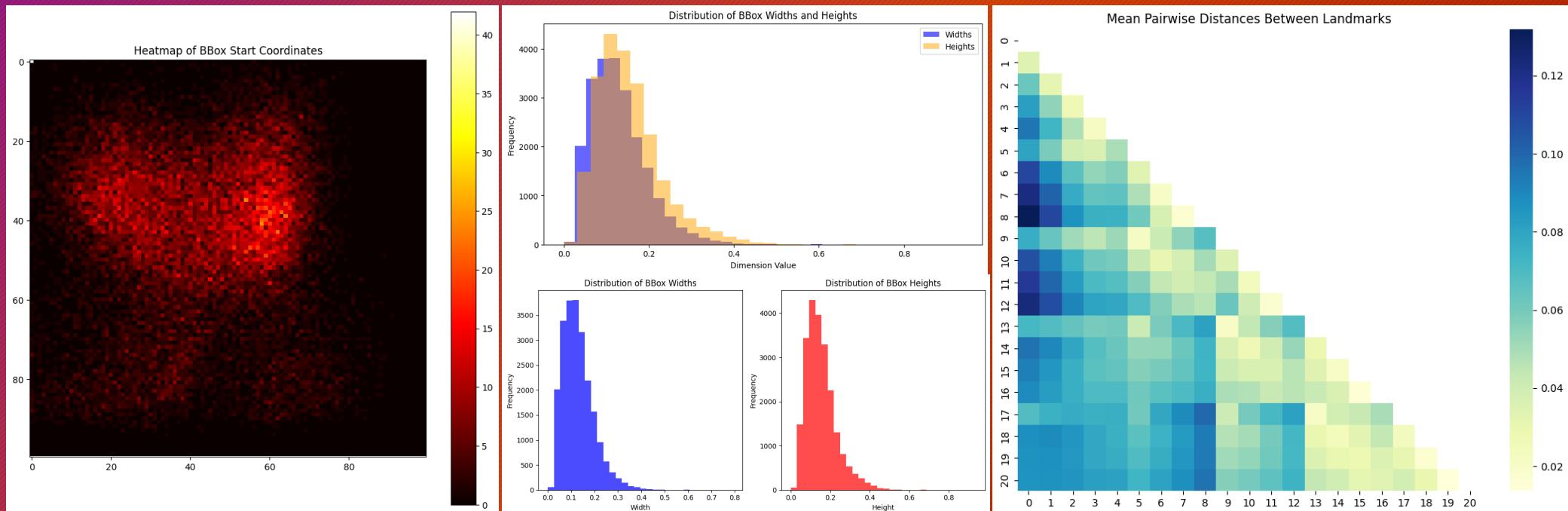
- Some with 2 bboxes

21 landmarks

*leading\_hand* the image has and a *leading\_conf* as its confidence.

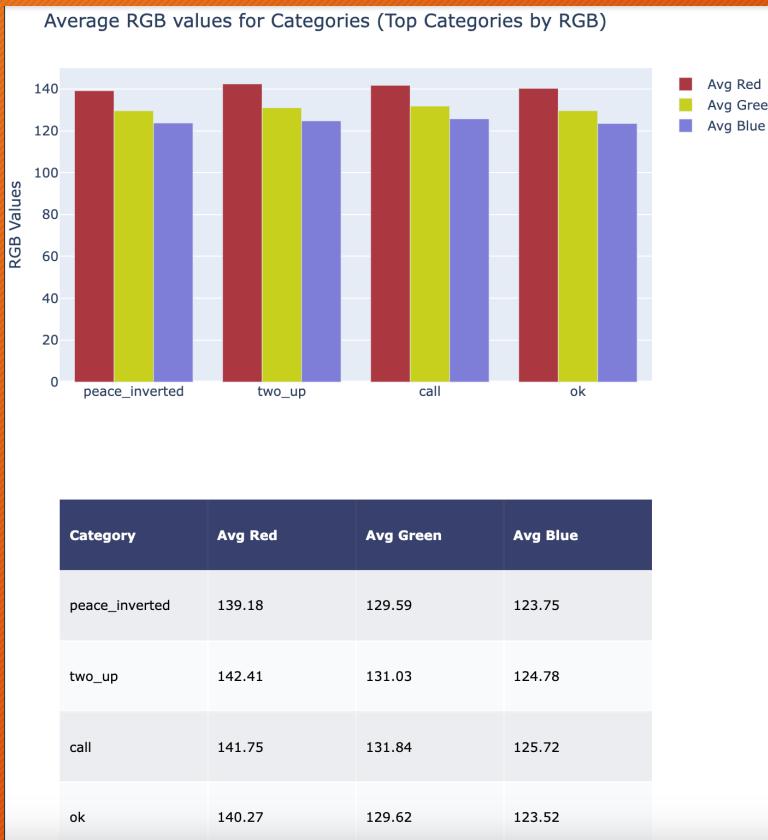


# Bboxes and Landmarks



-Only 391 of 18,000 bboxes were larger than the threshold bbox area

# RGB



**'two\_up'** has the highest average **Red**, with **'call'** having both the highest average **Green** and **Blue**.

# Modeling

