

ASL translator: <https://wecapable.com/tools/text-to-sign-language-converter/>

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Prelude Model: Motion detection on images to detect movement

Model 1: OpenCV model for detecting hands, then crops image to be just the hand

Model 2: Detects the device that the user wants to use a command on(TV, lights, alarm, weather, thermostat, locks, alarm clock, reminders, to do list)

Model 3: Detects what the user wants to do with the device(up 1, down 1, on, off, set to a number, get/post/put/delete)

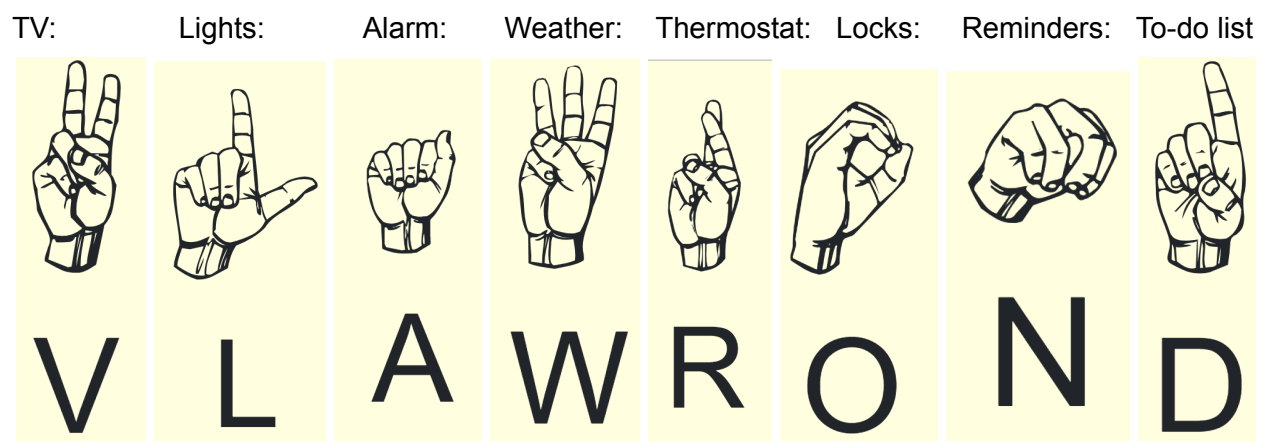
Example:

User walks in front of the camera, model 1 notices them and switches to model 2. The user motions a peace sign at the camera. The model detects this peace sign, sets the device to the TV as that is the ASL symbol for tv, then switches to model 3. The user motions a thumbs up sign at the camera. This is recognized by the model, and it sends a signal to the smart home TV telling it to change the channel by 1.

Model 1: mainly based off this tutorial:

<https://www.analyticsvidhya.com/blog/2021/07/building-a-hand-tracking-system-using-opencv/>

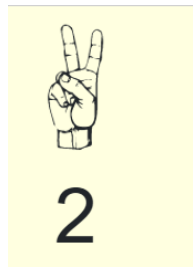
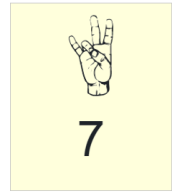
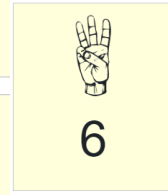
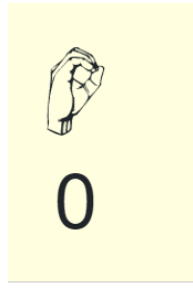
Model 2 classes:



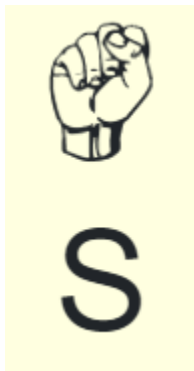
<https://www.kaggle.com/datasets/datamunge/sign-language-mnist>

Model 3 classes:

Increase by 1/turn on, Decrease by 1/turn off, set number



finish(for set number only)



<https://www.kaggle.com/datasets/imspارش/gesture-recognition>