**ResNet50 Subsystem for Hand Sign Recognition - Installation Guide**

**NOTE**: Before running this subsystem, you must first install the latest version of the following packages into your Python IDE:

* **H5PY**
* **Numpy**
* **Keras**
* **Tensorflow**
* **Tkinter**

Additionally, please ensure that the ‘**handsigns\_dataset**’ and ‘**sample\_images**’ folders, the ‘**ResNet.py**’ and the ‘**ResNet\_Predict.py**’ files are downloaded in the same location in your machine to avoid errors. No additional file is required.

The code has been thoroughly commented, explaining what each function does and what certain lines of code represent. To use the subsystem, simply run **ResNet\_Predict.py** in your Python IDE and wait for the model to be built and trained, this may take a few minutes on a GPU or an hour on a normal CPU.

Once the training is done an open file dialog will appear, simply select one of the images from the **sample\_images** folder to test the model. Alternatively, you can take a picture of your own hand and save it into the same folder and run the Python script again.

The training only needs to happen once just to create the required H5 file so testing with another image should not take as long.