**AIM:** To develop a software for finding whether a person has a writing disorder known as Dysgraphia using machine learning.

**PROGRAMMING LANGUAGE USED:**

* Python

**LIBRARIES AND MODULES USED:**

* TensorFlow

(For pre-processing and for algorithms)

* Keras
* numpy
* PySimpleGUI (For user interface)
* os (For getting the images from disk)

We have successfully designed and developed a software which is capable of classifying whether a person has Dysgraphia (writing disorder) using machine learning.

We choose Python for developing this software since Python has tons of libraries using which we were able to create this software much faster. We used TensorFlow is a library developed by Google which has many pre-built functions and subclasses for machine learning software. Another popular libraries we used is Keras and numpy which has built-in functions for many complex mathematical computations For user interface (front-end), we used PySimpleGUI library since it is easy to use.

We created this software to give access to all the parents of the world to check whether their child is suffering from Dysgraphia or not at home.

In this project we gave three datasets –

1. **Training Dataset:** This datasets is used for training the mode.
2. **Validation Dataset:** This dataset is used for validating the model that how accurate is the trained model.
3. **Testing Data**: This is the data that the user will give to the software for finding whether or not the person has Dysgraphia.

**HOW TO USE:**

1. Click a picture of the handwriting (about 5 to 10 lines) for whom we want to test
2. Launch the software
3. Let the software train itself with the given training data and validation data
4. Click on Browse
5. Select the path of the image
6. At the bottom of the image, the result is shown

**ACCURACY;**

* Training data accuracy:- 80%
* Validation data accuracy:- 95%
* Testing data accuracy:- 90%