**Assignment 1: Speech and not speech detection**

（1）This assignment is carried out by group. You could choose your teammate freely. Each group consists of at most three students.

（2）The ‘training.data’ contains the training data. It is from our project to detect whether a person in a video speaks or not. The features are generated in the following way, which may help you making the most of these features.

1、Get the mouth region M from the origin image based on facial landmark detection.

2、Calculate dense optic flow between mouth region of last frame and the current frame and generate a score S that depicts the motion of mouth.

3、Calculate the parameter V which depicts the degree of mouth opening.

4、For frame i, we also calculate the S and V for its previous and next frames.

5、Hence, we generate a *6* dimensional feature vector is X=[Si-1 Si Si+1 Vi-1 Vi Vi+1].

6、The label is at the end of each line, where +1 represents speaking, and -1 represents not-speaking.

In the training.data, the ratio of positive examples over negative examples is 1:1. Keep this in mind, for if you find your training error or validation error is larger than 50%, that means your solution learns nothing and performs worse than guessing.

（4）You need to write a program to predict speaking or not speaking. For my convenience to evaluate your results, please submit a “.txt” file which contain your predicted results. A sample file is provided in the compressed file we present.

In fact, you are allowed to use some other programming languages besides MATLAB, including python and C/C++, as long as you hold the interface protocol above.

（5）You can use **ANY** method to solve this problem.

（6） The deadline of this assignment is March 20nd (Monday), 2020.