CSE 535 Fall 2018 Mobile Computing Assignment 1
Due Date:
Points: 100
Group Submission

In this assignment we will provide you with a pre-compiled android application (and the source code).

Part I

First you have to use your android phone, or find one you can use (we have some phones in the Impact lab if you can't find a phone at all) and install the application. As part of the application, you will learn how to sign some states using American Sign Language (ASL).

For this part use the APK provided. Enter your asu id and email to enter the application, please note that a folder with the id you enter will be created. Pick each state from the dropdown menu and record yourself doing that sign. Then upload the videos for that word. You need to pick the 3 that you find best. Please note that all the videos are uploaded (the ones you pick and the ones you don't) and they are deleted from the media on your phone. You can check your uploads here http://10.211.17.171/Learn2Sign/uploads
And check the folder with your id.
Record videos for each sign at a time and upload the videos so you don't encounter problems with space and upload time. Then move on to the next sign.

When recording videos, please make sure to do the sign only once in the video (DON'T LOOP) and that the person doing all 75 videos is actually you.

Since the server is not interfaced to public, please make sure you are on ASU's network. or download cisco any connect from google store]https://play.google.com/store/apps/details?id=com.cisco.anyconnect.vpn.android.avf&hl=en_US.] and use sslvpn.asu.edu along with your asu id and password to connect to ASU's network. You will encounter errors if you are on different WiFi or 3g/4g networks. The upload of the videos will always fail, so make sure you ssl to ASU's network before starting the application. To view your videos, you need also to be connected to ASU's network, so download cisco anyconnect for PC from myasu/apps and use sslvpn.asu.edu and your asu id and password.

Then go into the source code and thoroughly understand how the app functions. You will use this understanding for Part II of this assignment.

Note about timer:

When you are ready to record the signs, you will have to put your phone on a table and stand close but far enough so that your upper body is completely in the recording frame. Then you will set a timer on your video stream so that you are able to get to your position after hitting, record on the phone.

**It is very important to get the entire video with proper framing because you will be using the data you collected in later assignments (we will build a recognizer) and the performance of your recognizer will might dip if this recording does not go well.

Part II

For this part, you will build a 'practice module' in the sign language application 'Learn2Sign' that you interacted with before. The purpose of this module for you to understand and implement how to record a video, set a timer and save the video to disk as well as make additional activities and interact with a server.

The 'practice' module of your application should first check if the user has 'learned' enough signs. You do this by checking if at least three of each of the 25 signs were recorded, reviewed and accepted for upload. Then you will randomly show the name of a sign from the list of learned signs and ask the user to record the sign.

We have not built the actual machine learning model to accurately identify the sign yet, so for now you will just ask the user herself to grade her performance. You will do this by showing yet another screen where you will show the learning video from signsavvy (we used in 'Learn screen' and the user's version of the sign on the same screen. If satisfied with what is shown, the user can then accept the sign or reject it and try another word.

You should keep a log file of this interaction by logging clicks.

Finally, if the user accepts a sign you should upload the video and the name of the sign the video was for to the server. You can look into the source code we provide in the other part of the application to learn how to do this.

Skills learned from this assignment:

1. Interacting with github and getting the base application and the source code.
2. Android:
    a. Installing an .apk on a phone
    b. Interacting with an application
    c. Making an activity and other UI design elements
    d. Displaying media
    e. Recording and saving data to an SD card
    f. Interacting with remote servers

Grading:

1. Installing the app, putting it in Android Studio, recompiling and installing on the phone again. Change the application name to [groupname] and change the icon to a suitable icon. Submit the new .apk and a demo video .------ 10 points
2. For each correct sign uploaded (we will test this) you get 2/3 points. So total 25 signs * 3 repetitions * 2/ 3 ------------ 50 points
3. Practice module. Submit demovideo and final .apk -----40 points