

# CSE 535 Fall 2019 - Project 2 (Thursday)

This is a group project with a group of maximum size 4.

## Objective:

Develop an online RESTful Application Service that can classify American Sign Language.

## Project Details:

- Develop an online Application Service that accepts Human Pose Skeletal key points of a sign video and return the label of the sign as a JSON Response. The Key points are generated using [TensorFlow's Pose Net](#).
- Using these key points, develop 4 machine learning models (one for each student) that can classify the American Sign Language signs { [gift](#), [car](#), [sell](#), [book](#), [total](#), [movie](#) } (Some of the signs you did in your previous assignment).
- For generating the key points, please follow instructions in the link -> [https://github.com/prashanthnetizen/posenet\\_nodejs\\_setup](https://github.com/prashanthnetizen/posenet_nodejs_setup)
- For the dataset, you should use the videos captured as part of your first assignment. Make sure your videos are proper in order to get better accuracy.
- The JSON input given to the service follows the format of the output given by the JavaScript file mentioned in the GitHub repo.
- The output of your service should be given as a JSON response for each input JSON video data in the following format.

```
{  
  "1": "predicted_label",  
  "2": "predicted_label",  
  "3": "predicted_label",  
  "4": "predicted_label"  
}
```

where **1 to 4** denotes the **index** of your ML models,

"predicted\_label" is the predicted sign (all in lowercase, use \_ for space).

- You can host your service using any cloud platform and share us the link before submission. Within an hour of the submission, your service is evaluated with test data and the resulting **maximum accuracy and average accuracy** is considered for grading.

Metric Explanation:

1. **Maximum Accuracy** is the maximum accuracy measure obtained out of the four models for a test run.
2. **Average Accuracy** is the average of the accuracies of models

- You can share the URL of your service [here](#).
- Please test your services properly after hosting.

## Submission:

You are required to submit the following:

- Source code of your service under "**src**" folder.
- ML model training notebooks or scripts "**notebook**" folder.
- ML models under "**models**" folder.

- Report evaluating your ML models.
- README file.
- Service URLs in the shared file.

The first 5 materials listed must be zipped together in a single .zip file mentioning its name in the following format:

Thursday\_G<group\_id>\_Project\_2.zip

**Submission Deadline: Nov 4, 2019 9:59 AM MST**