**Action Recognition in Videos – 2020 Spring**

1. **What’s your task?**

You need to design an algorithm which is based on LSTM or RNN to distinguish the category of action in videos. We will use an unopened dataset to evaluate your algorithm.

1. **Dataset**

* **Training:**

In the “video\_data” folder, “video\_data” is an open dataset, which contains 50 different kinds of actions and 3500 video clips in total. Specially, the name of each folder is the class label for the videos in this folder. How many instances of this dataset to use is up to you, and you are NOT allowed to use extra data!

You can use ANY way to preprocess the video data to serve as the input to your model. Maybe you should first convert the .avi files to the .jpg (or other types) files. We provide a script (video2jpg.py) to achieve this function. You can use it or modify it to satisfy your requirement. Before running the script, you must first install “FFmpeg”, which is a cross-platform solution to record, convert and stream audio and video. To learn more about it, please refer to <http://ffmpeg.org/>.

PS：The command to run the script:

python video2jpg.py avi\_videos\_directory jpg\_images\_directory

* **Testing:**

In the “val\_data” folder, it contains 1500 video clips without the class label. You should use your model to predict the labels in the given order respectively, and save the predicted result as a label file in txt format, ending up with a column vector containing 1500 elements.

1. **What to hand in?**
2. Code and an instruction file(such as README.docx) on how to make the code work.

PS: Do Not submit the model files.

1. A brief(NOT too long!) and clear experiment report, including but not limited to

* How to preprocess the video data.
* Your method and its novelty.
* Implementation details of your experiment.

1. The predicted label file(.txt format).
2. Please hand in your work into folder ‘UpLoad’, with the form of .rar(.zip) file , named like this:

‘组长学号-组员1学号-组员2学号.rar’（123-456-789.rar）

1. **Notes**
2. You are forced to use methods which are based on LSTM or RNN to solve the problem, including different deep learning platforms.
3. DDL: TBD
4. Your grade = 60% \* score\_of\_your\_report + 40% \* score\_of\_your\_verification\_accuracy, so be serious with your report. It is worth mentioning that: we not only pay attention to your final accuracy, but also focus on the novelty of your methods. So just attempt it!
5. Name your report with a standard name among “report.docx, report.doc, report.pdf”, do NOT use Chinese words. In your report, remember to give your team member names and student IDs.
6. Honor Code: do NOT just download an existing model (.caffemodel or something like that) and then hand it in as your result. However, you are allowed to fine-tune the model, and if you do fine-tune some model, please mention it in your experiment report. ANY cheating will lead to zero point of this assignment.