Final Project

- Action recognition in NTU RGB+D dataset
  - **Level 1**: Hand waving  Kicking something 
  - **Level 2**: Sit down  Stand up 
  - **Level 3**: Reading  Writing  Play with phone 

Final Project

- Given the image sequence and human joints information
  - *.skeleton

第1行為該樣本的幀數
第2行為執行動作的人數
第3行共有10個數據分別代表'bodyID', 'clipedEdges', 'handLeftConfidence','handLeftState', 'handRightConfidence', 'handRightState','isResticted', 'leanX', 'leanY', 'trackingState'
第4行代表關節點數
第5-29行為25個關節點的信息，每個關節點有12個數據，分別代表'x', 'y', 'z', 'depthX', 'depthY', 'colorX', 'colorY','orientationW', 'orientationX', 'orientationY','orientationZ', 'trackingState'
以上為一幀的信息，其他幀都是上述表示方式。

1	82
2	1
3	72057594037931648 0 1 1 1 1 0 -0.1159187 0.1413209 2
4	25
5	0.2058097 0.1920515 3.810989 276.0976 190.0662 1032.328 514.0889 -0.1705678 0.04232755 0.9718983 -0.1566168 2
6	0.2134301 0.4422967 3.726759 277.3136 165.0482 1036.303 441.9731 -0.1901731 0.04548382 0.9682529 -0.1557294 2
7	0.2213433 0.6876352 3.632531 278.6937 139.0757 1040.759 367.327 -0.2091295 0.05564136 0.9576808 -0.1897801 2
8	0.1907605 0.8009055 3.606914 275.7599 126.9954 1032.45 332.6442 0 0 0 0 2
9	0.0918046 0.6148385 3.709685 265.4156 147.7684 1002.124 392.1333 0.227612 0.737113 -0.6355661 -0.0302138 2
10	0.07073262 0.485538 3.835492 263.0987 162.1566 994.8585 433.4985 0.2222775 0.6582513 -0.3076532 -0.6501135 1
11	0.07598125 0.4137612 3.604359 264.0628 166.4845 998.5565 445.9719 -0.5930629 0.8047492 -0.005023585 0.02509595 2
12	0.0842017 0.3684169 3.539332 265.0529 170.4085 1001.679 457.2878 -0.4630096 0.8844829 0.0339969 0.04643773 2
13	0.3282964 0.5907791 3.601562 289.7654 148.3601 1072.765 394.137 -0.05883529 0.7442071 0.5953529 -0.2970676 2
14	0.3970932 0.3985312 3.637018 296.3391 168.3597 1091.51 451.7396 0.05591493 0.9663242 0.1817952 0.1733256 2
15	0.176298 0.3697526 3.554382 274.4996 170.4261 1028.889 457.4327 0.5629407 0.1473865 -0.3500167 0.7340731 2
16	0.1095666 0.365475 3.549501 267.6428 170.8204 1009.111 458.4996 0.6334412 0.2256226 -0.2585584 0.6935375 2
17	0.1506646 0.1937459 3.799509 270.8479 189.8496 1017.209 513.4172 -0.0426812 -0.6721297 0.716388 -0.1822312 2
18	0.1797998 -0.1042647 3.926366 273.0906 218.2044 1022.997 595.3101 -0.1501299 -0.5518476 0.1387757 0.8084964 2
19	0.2272813 -0.4017449 4.090881 276.6789 244.4325 1032.533 671.0005 0.2292348 0.7008731 -0.1187891 -0.6649191 2
20	0.2388464 -0.4691363 4.053373 277.9188 250.8641 1036.167 689.5341 0 0 0 0 2
21	0.2578075 0.1873574 3.760123 281.4259 190.2706 1047.912 514.7277 -0.1879081 0.6415793 0.6576406 -0.3472398 2
22	0.3005334 -0.1123085 3.852872 284.8776 219.1569 1057.301 598.1342 0.08434419 0.8158927 0.1400395 0.5546117 2
23	0.3254718 -0.4169113 3.990705 286.2055 246.7411 1060.339 677.6857 0.2136325 0.9680172 0.009465511 -0.1312033 2
24	0.2816838 -0.4697345 4.028364 281.9489 251.1873 1047.878 690.4779 0 0 0 0 2
25	0.2195568 0.6270846 3.657938 278.3487 145.6588 1039.64 386.2234 -0.2094534 0.05314625 0.9614895 -0.1698314 2
26	0.05205761 0.3434089 3.50746 261.778 172.6763 992.3481 463.7944 0 0 0 0 2
27	0.06812977 0.3904739 3.4855 263.5011 167.4994 997.46 448.8905 0 0 0 0 2
28	0.05234007 0.3349742 3.511863 261.8004 173.6014 992.3864 466.4615 0 0 0 0 2
29	0.1113064 0.3412982 3.562444 267.7791 173.4448 1009.431 466.0654 0 0 0 0 2

- Use one program to recognize the actions in Level 1-3

Final Project

- Use 'training' data to design your methodology
- Evaluation
  - Use 14 videos in 'testing' data to evaluate the accuracy of recognition
    - Level 1: 4 videos
    - Level 2: 4 videos
    - Level 3: 6 videos
  - More videos will be announced at 1/12 11:00
  - Evaluation results
    - Compute number of accurately recognized videos
    - Average computational time of each video

	Level 1	Level 2	Level 3	Ratio
Accurate videos in testing data	4	2	0	6/14
Time (sec.)	oo	oo	x	-
Accurate videos in 1/12 data	3	0	0	3/#

Final Project

- Requirements
  - Presentation at 1/12
    - Present 5mins., including: flowchart, key methods, evaluation results, reference (function, library or paper).
    - Uniqueness of your work.
  - Upload program and slides to 北科i學園 at 1/12
    - Describe the employed source code editor, library, and how to execute your program (input/interface/output)
      - E.g. Identify the version of Visual Studio and OpenCV
  - You can use OpenCV or any other library to complete this project.
    - You can NOT employ the other action recognition trained by NTU RGB+D dataset.