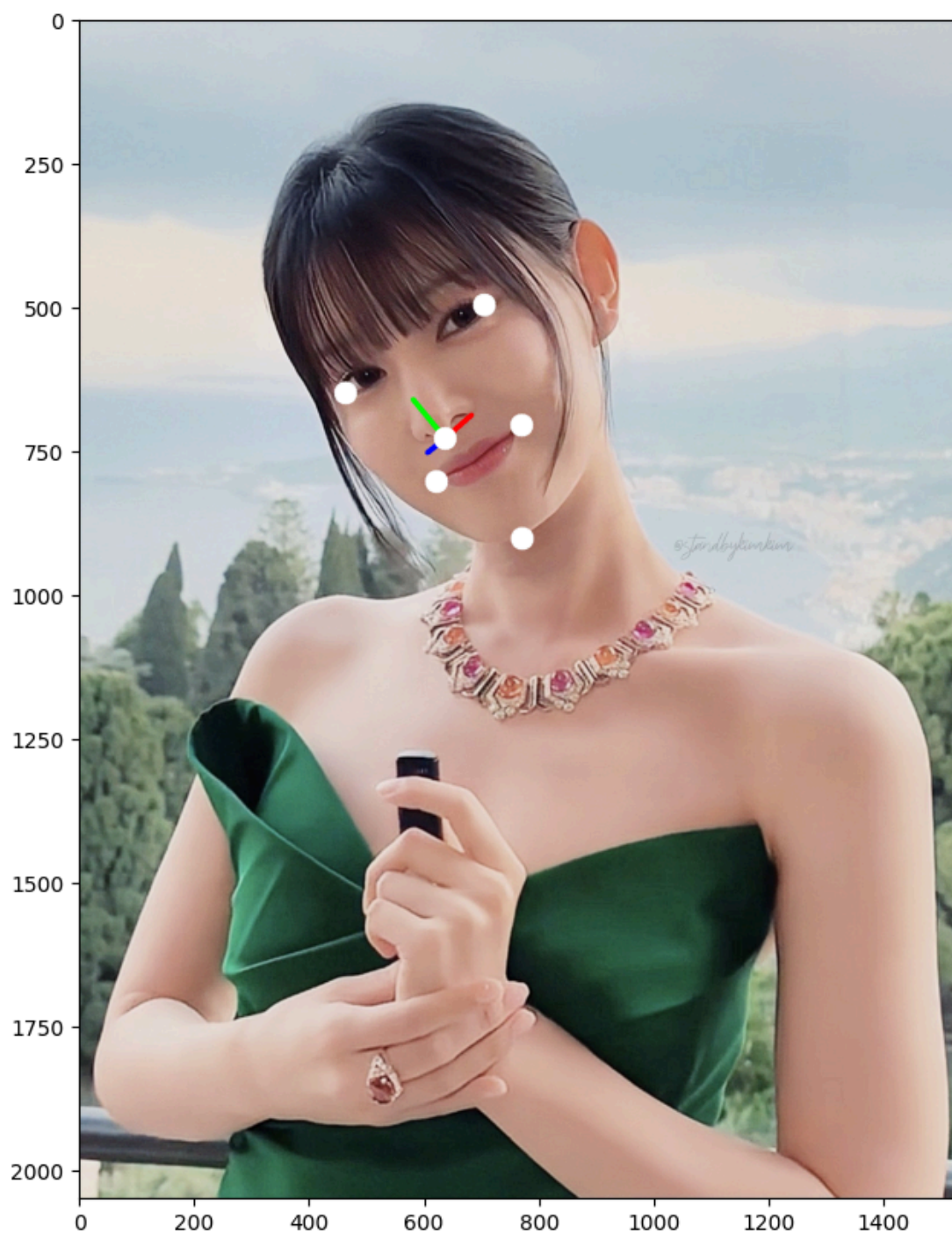


1.head-pose-estimation.ipynb 結果



抬頭(+)/低頭(-) [pitch]: [28.41893911]
右轉(+)/左轉(-) [yaw] : [26.29224756]
右傾(+)/左傾(-) [roll] : [23.33889596]

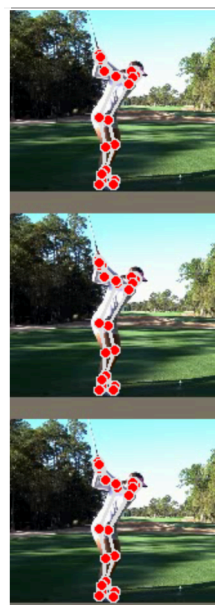
2.spin.ipynb 結果

	Frame	Euler_X(Pitch)	Euler_Y(Yaw)	Euler_Z(Roll)	Direction
0	0	-26.658944	-46.491354	34.180978	Right 46.49°
1	1	-31.897862	-42.735817	42.589613	Right 42.74°
2	2	-32.469116	-41.760298	44.101586	Right 41.76°
3	3	-30.772098	-42.887138	41.519405	Right 42.89°
4	4	-30.518708	-43.675059	40.932450	Right 43.68°
...
298	298	-178.816020	-0.303120	103.530378	Right 0.30°
299	299	-178.737389	-0.307559	103.586775	Right 0.31°
300	300	-177.295345	-0.140811	104.176073	Right 0.14°
301	301	-176.533659	-0.080022	104.504109	Right 0.08°
302	302	-176.080227	-0.014623	104.623678	Right 0.01°

303 rows × 5 columns

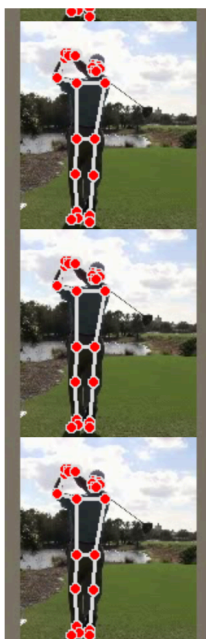


3.mp4 to mediapipe points detection and data save.ipynb => coach.mp4



coach.csv				
A	B	C	D	E
frame_number	landmark	x	y	z
0	NOSE	0.5870368481	0.3686363101	-0.02880845033
0	LEFT_EYE_INNER	0.5897556543	0.3541695774	-0.009997970425
0	LEFT_EYE	0.588707149	0.3530983329	-0.01008983236
0	LEFT_EYE_OUTER	0.5876851678	0.3518675566	-0.01012465078
0	RIGHT_EYE_INNER	0.5894225836	0.3541049957	-0.05970400572
0	RIGHT_EYE	0.5881305933	0.3531526923	-0.0597319603
0	RIGHT_EYE_OUTER	0.5868566036	0.3520675898	-0.05985028669
0	LEFT_EAR	0.5723455548	0.3452305198	0.07660834491
0	RIGHT_EAR	0.5722538829	0.345081985	-0.1460804343
0	MOUTH_LEFT	0.5751314163	0.3756177425	0.008641400374
0	MOUTH_RIGHT	0.5744007826	0.3746593893	-0.05654103309
0	LEFT_SHOULDER	0.5144097805	0.3900961876	0.2368344069
0	RIGHT_SHOULDER	0.5321095586	0.3917182982	-0.2798721492
0	LEFT_ELBOW	0.5181514025	0.4937759042	0.2720203102
0	RIGHT_ELBOW	0.5357144475	0.492079556	-0.3258520365

mp4 to mediapipe points detection and data save.ipynb => ours.mp4



ours.csv				
A	B	C	D	E
frame_number	landmark	x	y	z
0	NOSE	0.5398100019	0.3322268426	-0.1349641532
0	LEFT_EYE_INNER	0.5404424667	0.3133343458	-0.1250436157
0	LEFT_EYE	0.5390928388	0.3118065596	-0.1251470298
0	LEFT_EYE_OUTER	0.5377681255	0.3102070093	-0.1252760142
0	RIGHT_EYE_INNER	0.5383004546	0.313515842	-0.1702859104
0	RIGHT_EYE	0.535551846	0.3121752739	-0.1703564376
0	RIGHT_EYE_OUTER	0.5327537656	0.3107483089	-0.1703881919
0	LEFT_EAR	0.5160921812	0.3027406931	-0.05341438204
0	RIGHT_EAR	0.5108891129	0.3044616878	-0.2544584572
0	MOUTH_LEFT	0.5241984129	0.3409045339	-0.1003588662
0	MOUTH_RIGHT	0.5216618776	0.3397071362	-0.1591842026
0	LEFT_SHOULDER	0.4482422471	0.3581778407	0.08977585286
0	RIGHT_SHOULDER	0.42536515	0.358520031	-0.3341341019
0	LEFT_ELBOW	0.4182289243	0.4800900817	0.1705517173
0	RIGHT_ELBOW	0.4081749916	0.4889053702	-0.3597737849

angle.ipynb => coach.csv & ours.csv

frame_number	角度類型	角度
0	0 (左)shoulder-elbow-wrist	9.574640
1	0 (左)shoulder-hip-knee	19.105547
2	0 (左)hip-knee-ankle	177.814304
3	0 (右)shoulder-elbow-wrist	8.188391
4	0 (右)shoulder-hip-knee	14.650039
...
1939	323 (左)shoulder-hip-knee	10.908544
1940	323 (左)hip-knee-ankle	179.780032
1941	323 (右)shoulder-elbow-wrist	126.650858
1942	323 (右)shoulder-hip-knee	14.922683
1943	323 (右)hip-knee-ankle	5.645074

1944 rows × 3 columns

frame_number	角度類型	角度
0	0 (左)shoulder-elbow-wrist	16.953110
1	0 (左)shoulder-hip-knee	13.154194
2	0 (左)hip-knee-ankle	174.738589
3	0 (右)shoulder-elbow-wrist	18.740438
4	0 (右)shoulder-hip-knee	14.898277
...
2059	343 (左)shoulder-hip-knee	178.164720
2060	343 (左)hip-knee-ankle	4.106574
2061	343 (右)shoulder-elbow-wrist	166.897964
2062	343 (右)shoulder-hip-knee	2.540056
2063	343 (右)hip-knee-ankle	178.654475

2064 rows × 3 columns

4. dtw.ipynb 結果

兩部影片的動作比較，根據下圖能得知，對角線的上半部呈現筆直，代表兩部影片在前半部的動作差異不大，但是對角線的下半部有點抖動，代表兩部影片在後半段的動作有點差異。

