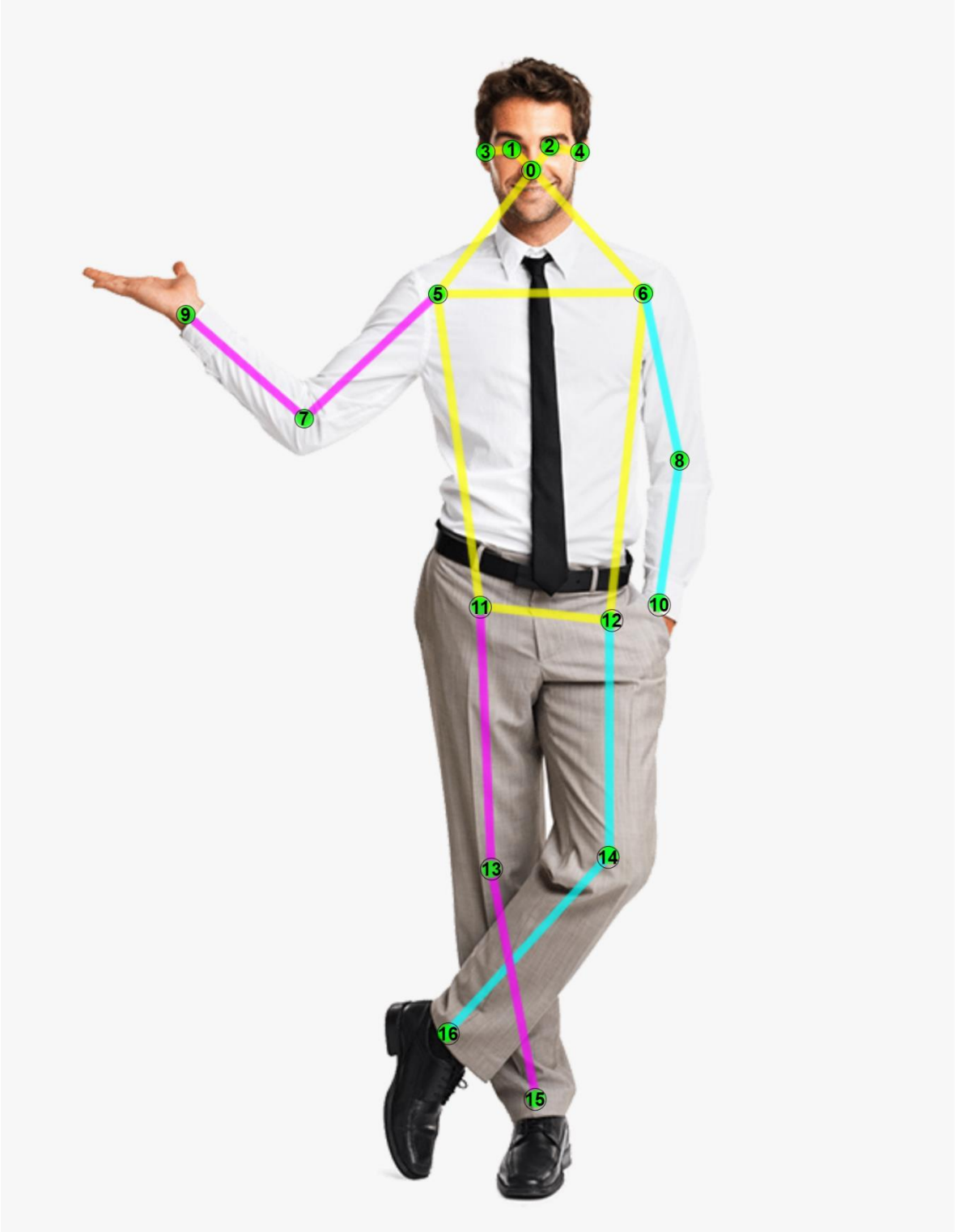
Mask – RCNN Pose Estimation : Keypoint Detection [PyTorch]

■ *Key – points*

- *Estimated Keypoints of Human Body*

index	*description*		*index*	*Description*
0	*Nose*		9	*Left Wrist*
1	*Left Eye*		10	*Right Wrist*
2	*Right Eye*		11	*Left Hip*
3	*Left Ear*		12	*Right Hip*
4	*Right Ear*		13	*Left Knee*
5	*Left Shoulder*		14	*Right Knee*
6	*Right Shoulder*		15	*Left Ankle*
7	*Left Elbow*		16	*Right Ankle*
8	*Right Elbow*			

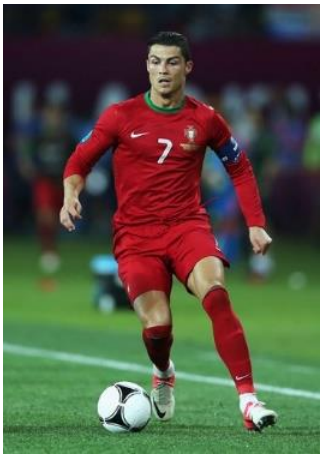
- *Description using Example Photo*



- ***Pose Estimating Examples***
  - *Input Photo* 1

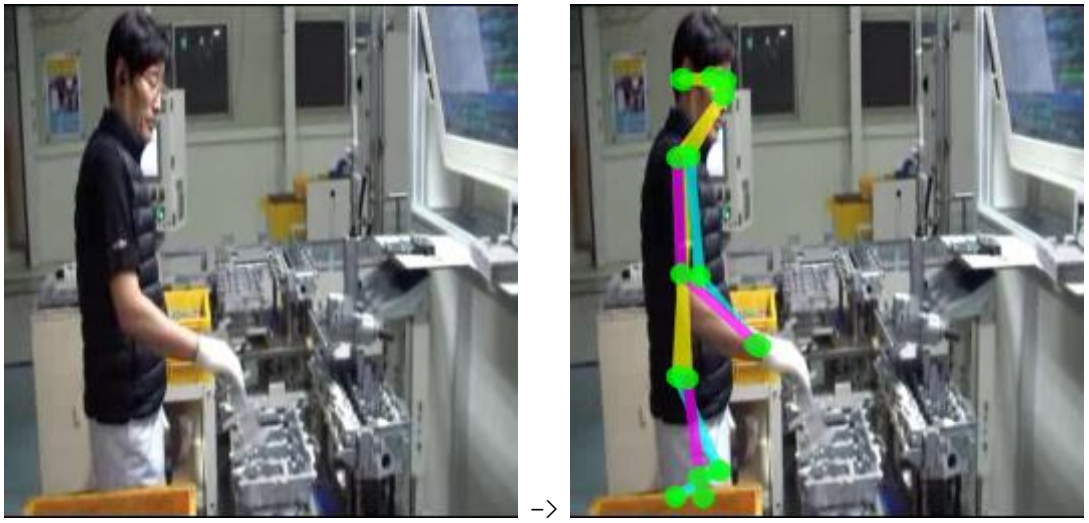
  - *Output Photo* 1

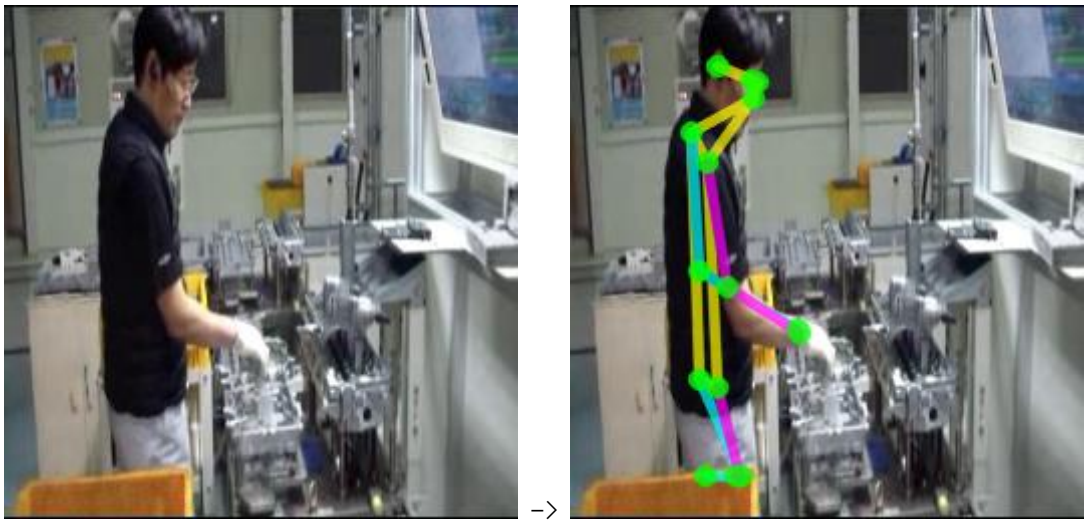
  - *Input photo* 2

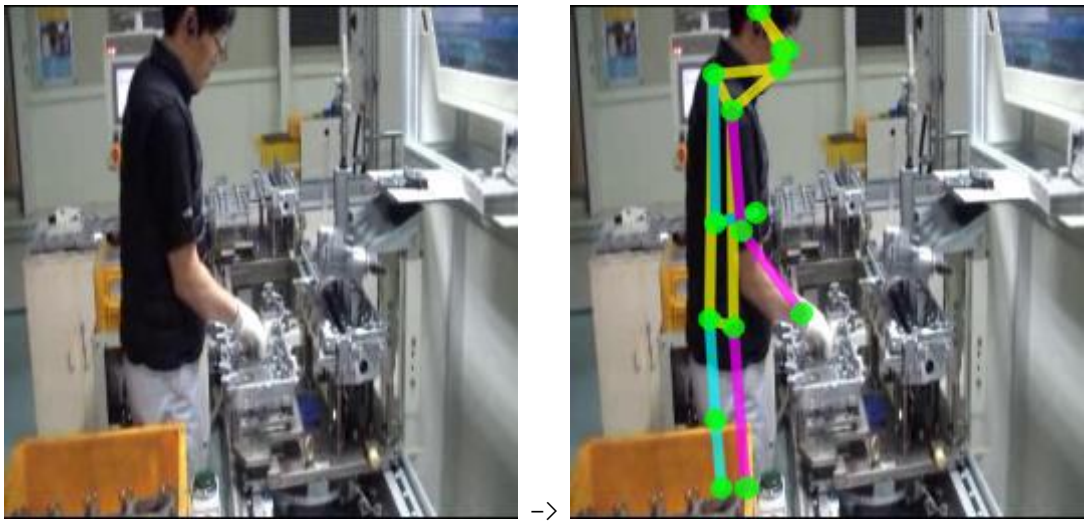


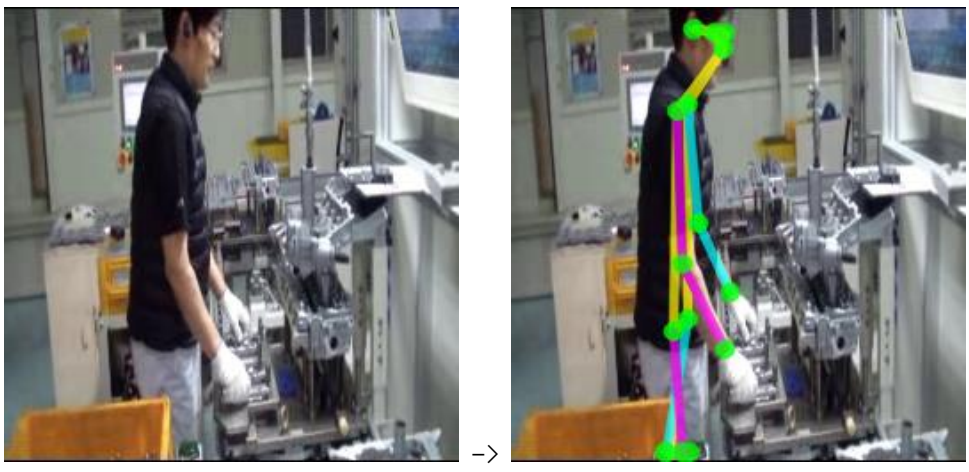
  - *Output photo* 2

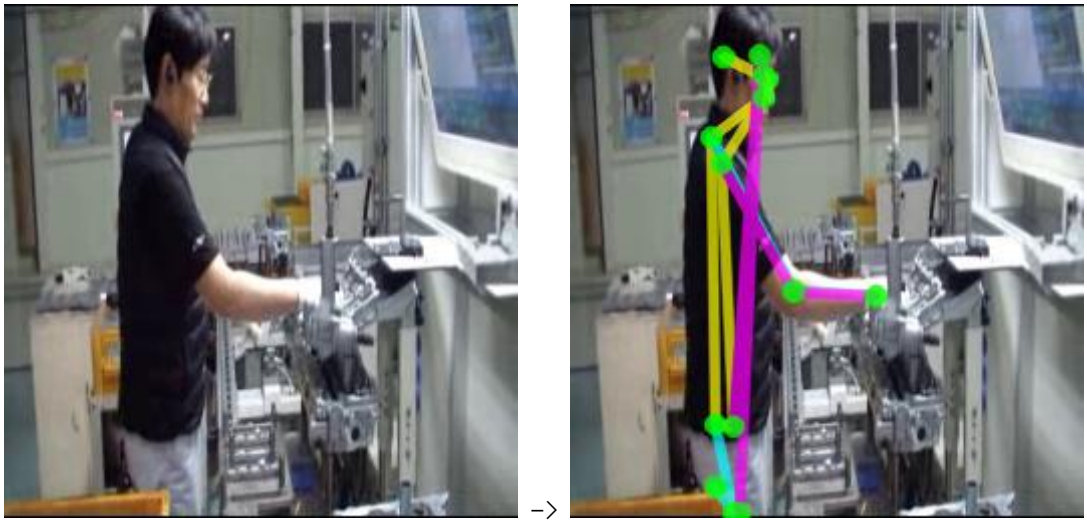
■ *Test for our images*











■ *Time consumption (with GPU : GeForce RTX 2080 Ti)*

- *With saving result photo*

```
Estimator Load time : 0.9883444309234619

Image inputs/5.jpg estimating time : 0.06166267395019531

Image inputs/6.jpg estimating time : 0.05518531799316406

Image inputs/7.jpg estimating time : 0.04341888427734375

Image inputs/9.jpg estimating time : 0.04712033271789551

Image inputs/10.jpg estimating time : 0.04879045486450195

Image inputs/11.jpg estimating time : 0.04623842239379883

Image inputs/12.jpg estimating time : 0.048952341079711914

Image inputs/13.jpg estimating time : 0.04714035987854004
```

➔ *Average processing time for each file* : 0.0498 *sec*

- *Without saving photo, Only Estimate Key – points information*

```
Estimator Load time : 0.985360860824585

Image inputs/5.jpg estimating time : 0.058611392974853516

Image inputs/6.jpg estimating time : 0.05553126335144043

Image inputs/7.jpg estimating time : 0.04189753532409668

Image inputs/9.jpg estimating time : 0.04476571083068848

Image inputs/10.jpg estimating time : 0.04575228691101074

Image inputs/11.jpg estimating time : 0.04375624656677246

Image inputs/12.jpg estimating time : 0.04641556739807129

Image inputs/13.jpg estimating time : 0.0438234806060791
```

➔ *Average processing time for each file* : 0.0476 *sec*

■ *Key – points numeric result*

– *Example*

	nose	*Eye_l*	*Eye_r*	*Ear_l*	*Ear_r*	…	*Ankle_r*
x	76	77	70	55	56	…	66
y	45	38	36	37	37	…	245

➔ *For each photo, we can get the information table like above.*