울산대학교 UNIVERSITY OF ULSAN

UNIVERSITY OF ULSAN

ADVANCED TOPICS IN ERGONOMICS AND HUMAN FACTORS

AUTOMATIC OWAS

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CONTENT

I. Importing Image

II. Selecting Condition

III. Result

IV. Back-end Flow

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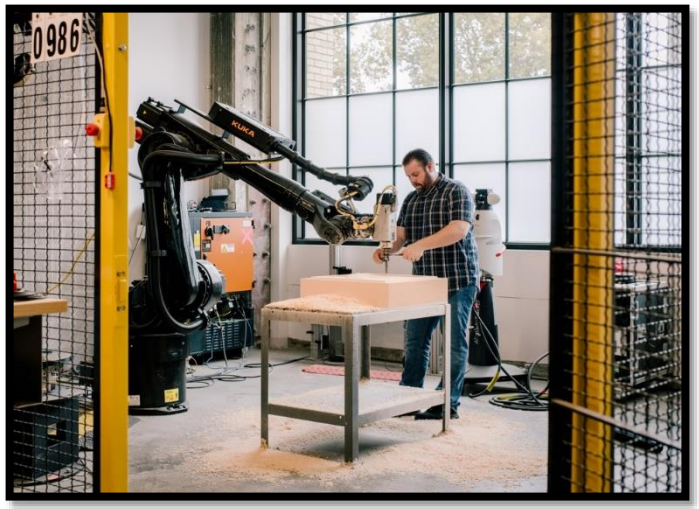
I. Importing Image

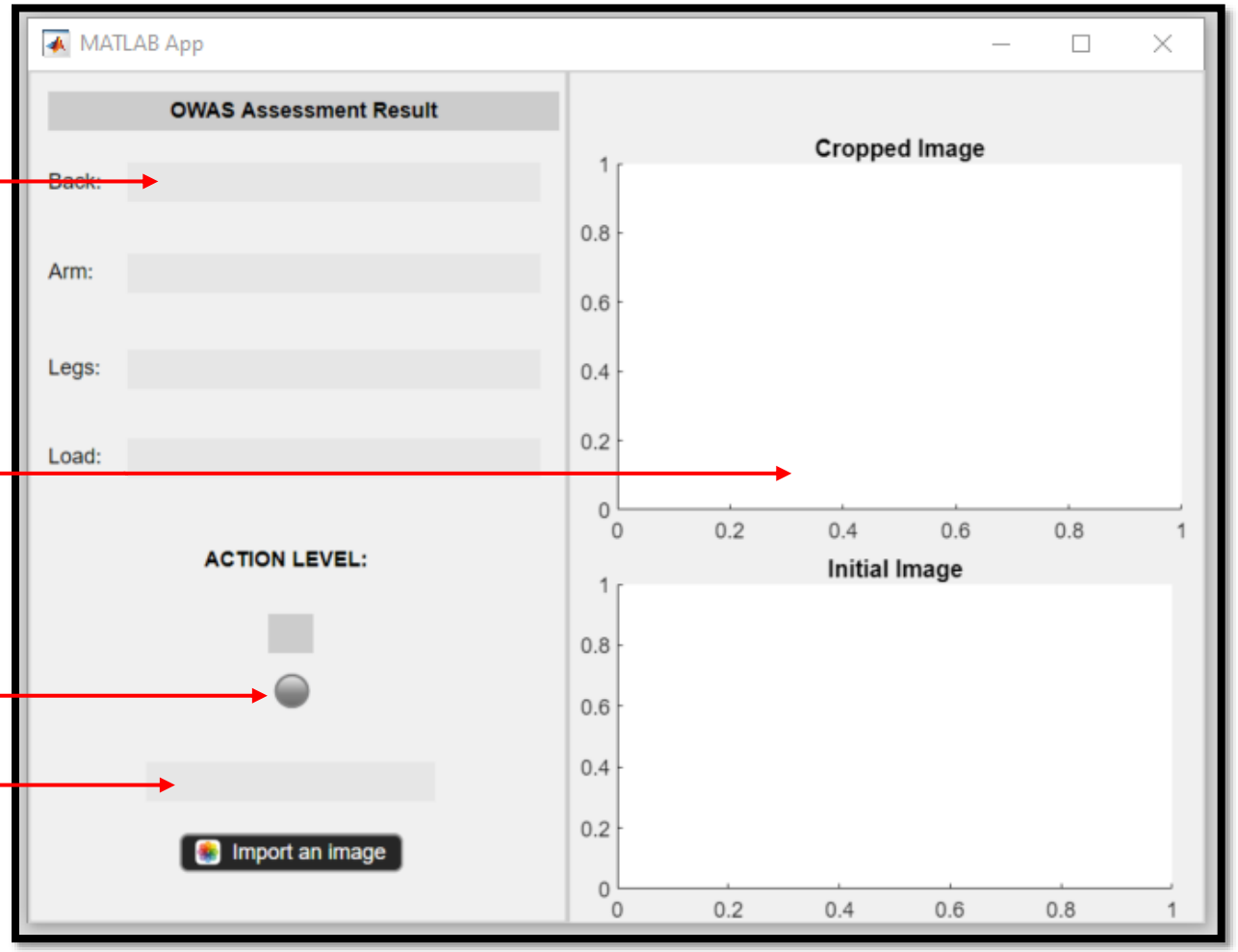
- Working images



I. Importing Image

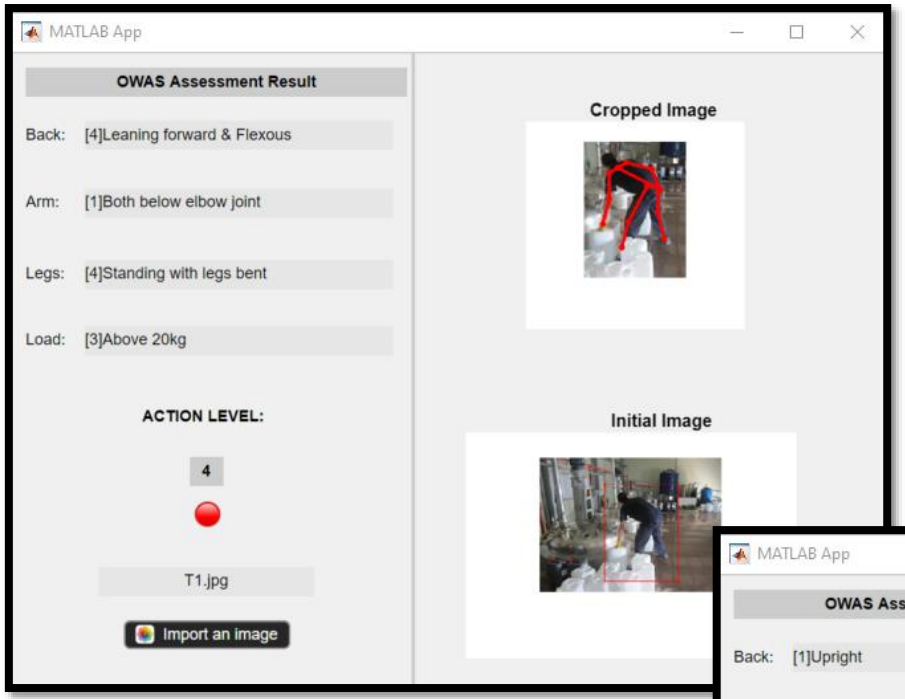
UI

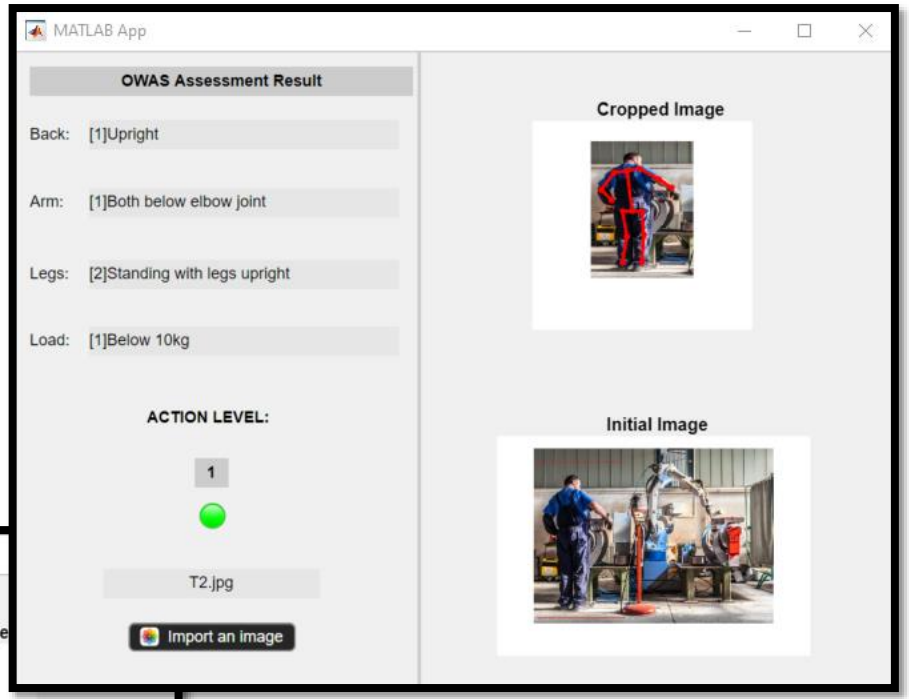
- Display results
- Action level
  - Lamp color: **1**, **2**, **3**, **4**
- Image file name
- Display image

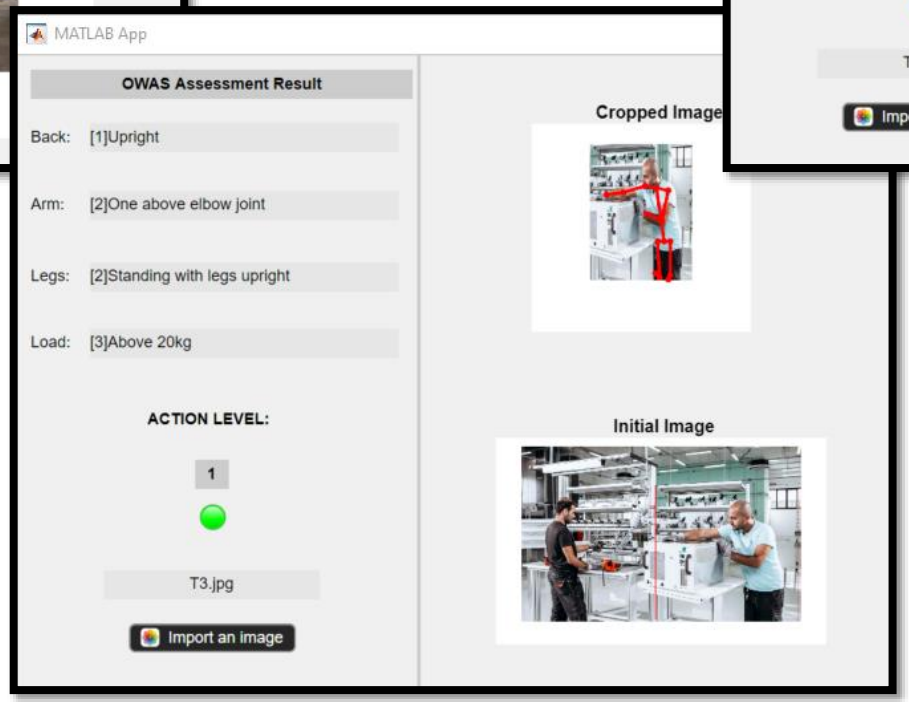


II. Selecting Condition

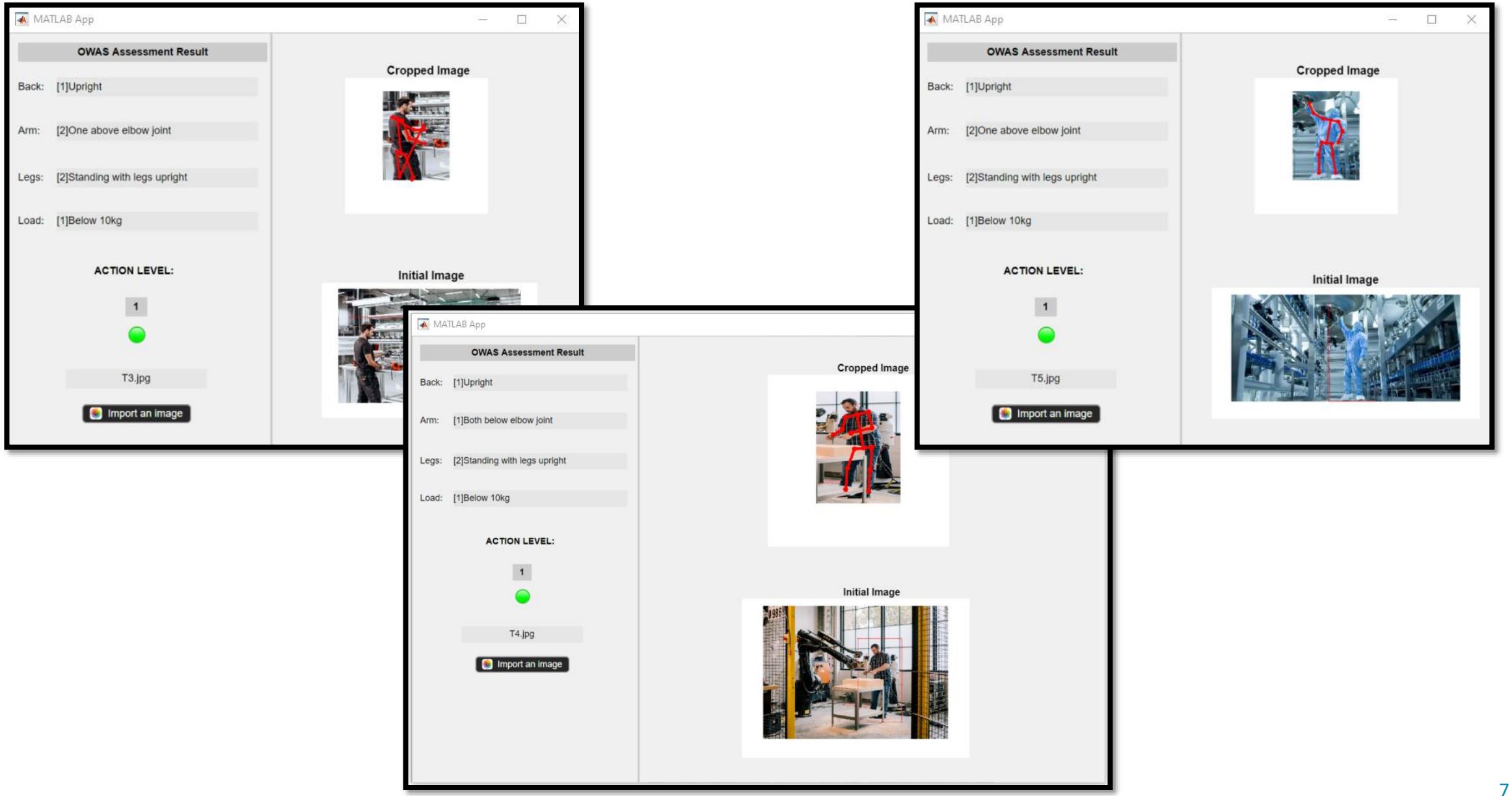
III. Result


MATLAB App
OWAS Assessment Result
Back: [4]Leaning forward & Flexous
Arm: [1]Both below elbow joint
Legs: [4]Standing with legs bent
Load: [3]Above 20kg
ACTION LEVEL:
4
T1.jpg
Import an image
Cropped Image
Initial Image

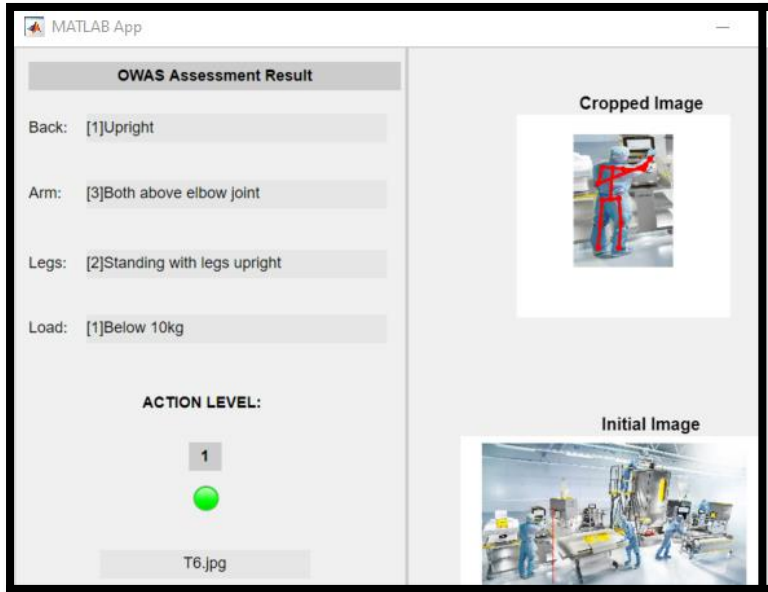

MATLAB App
OWAS Assessment Result
Back: [1]Upright
Arm: [1]Both below elbow joint
Legs: [2]Standing with legs upright
Load: [1]Below 10kg
ACTION LEVEL:
1
T2.jpg
Import an image
Cropped Image
Initial Image

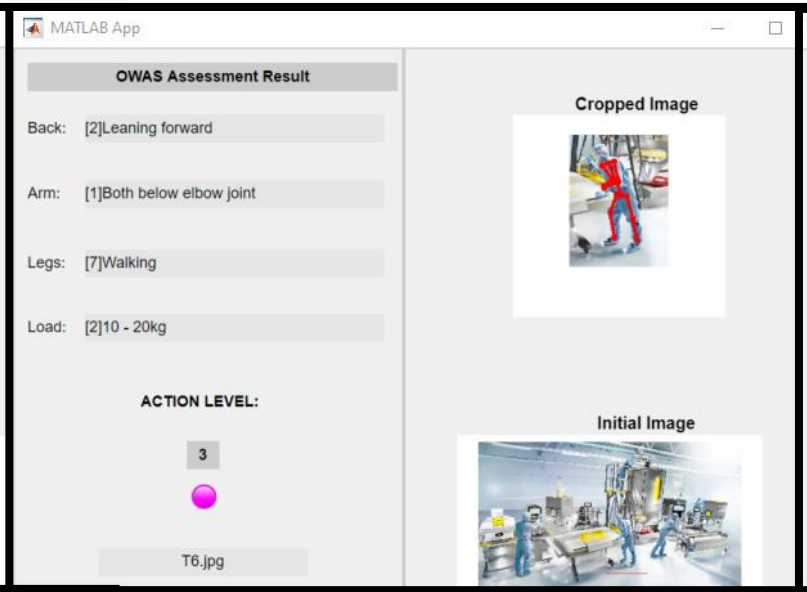

MATLAB App
OWAS Assessment Result
Back: [1]Upright
Arm: [2]One above elbow joint
Legs: [2]Standing with legs upright
Load: [3]Above 20kg
ACTION LEVEL:
1
T3.jpg
Import an image
Cropped Image
Initial Image

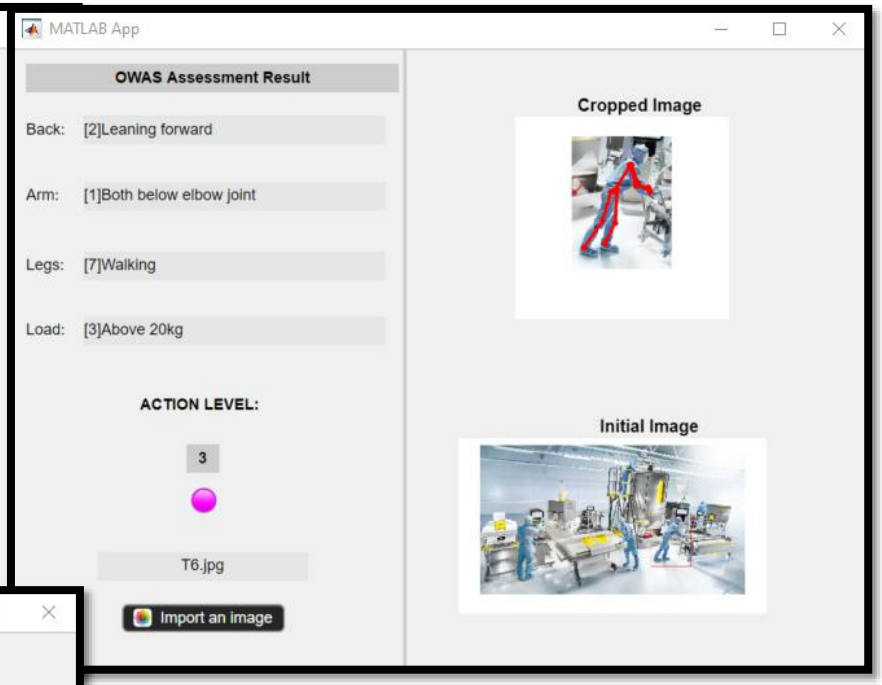
III. Result

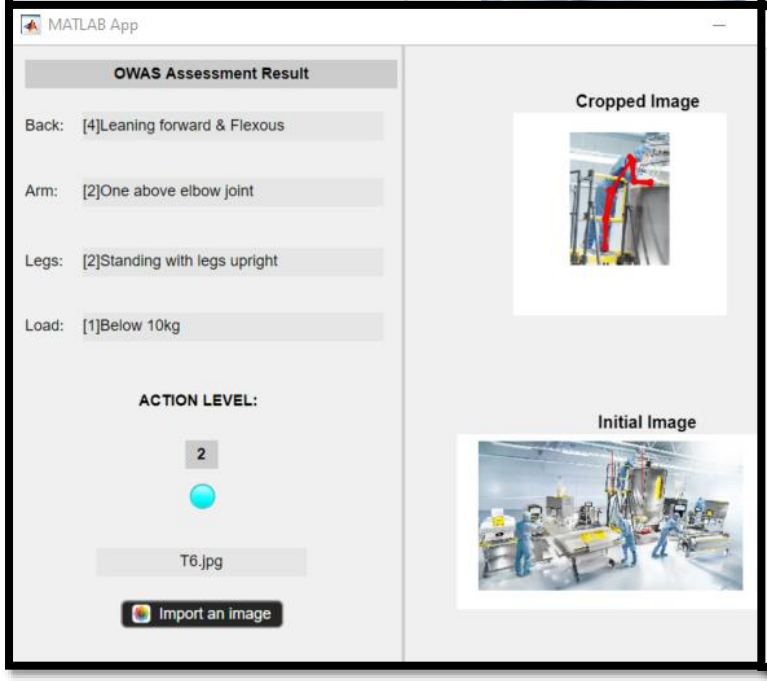

MATLAB App
OWAS Assessment Result
Back: [1]Upright
Arm: [2]One above elbow joint
Legs: [2]Standing with legs upright
Load: [1]Below 10kg
ACTION LEVEL:
1
T3.jpg
Import an image
Cropped Image
Initial Image
MATLAB App
OWAS Assessment Result
Back: [1]Upright
Arm: [2]One above elbow joint
Legs: [2]Standing with legs upright
Load: [1]Below 10kg
ACTION LEVEL:
1
T5.jpg
Import an image
Cropped Image
Initial Image
MATLAB App
OWAS Assessment Result
Back: [1]Upright
Arm: [1]Both below elbow joint
Legs: [2]Standing with legs upright
Load: [1]Below 10kg
ACTION LEVEL:
1
T4.jpg
Import an image
Cropped Image
Initial Image

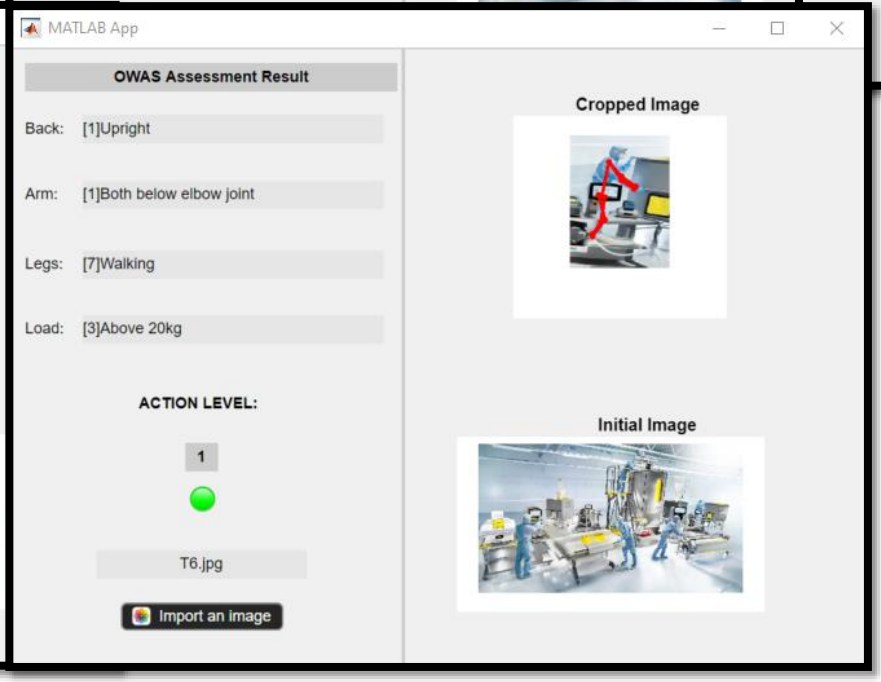
III. Result


MATLAB App
OWAS Assessment Result
Back: [1]Upright
Arm: [3]Both above elbow joint
Legs: [2]Standing with legs upright
Load: [1]Below 10kg
ACTION LEVEL:
1
T6.jpg
Cropped Image
Initial Image

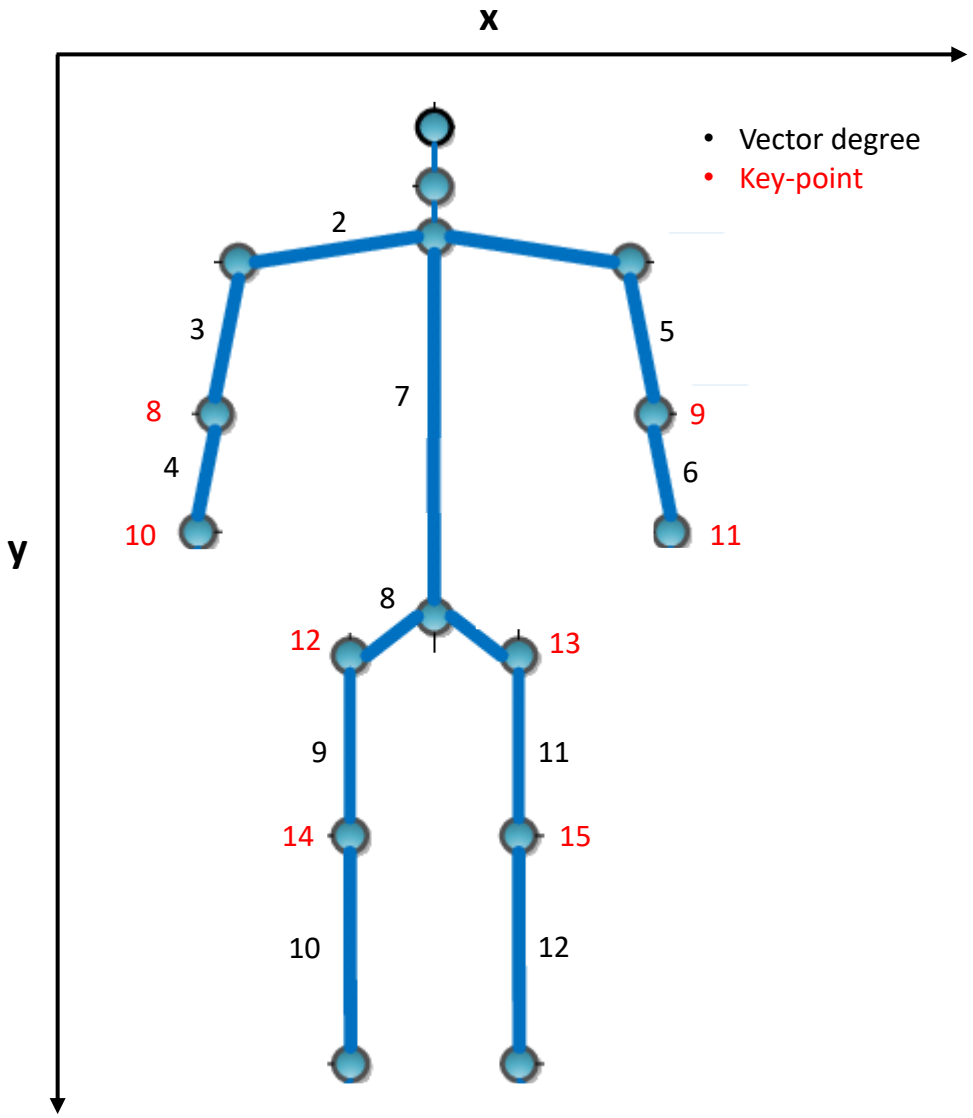

MATLAB App
OWAS Assessment Result
Back: [2]Leaning forward
Arm: [1]Both below elbow joint
Legs: [7]Walking
Load: [2]10 - 20kg
ACTION LEVEL:
3
T6.jpg
Cropped Image
Initial Image

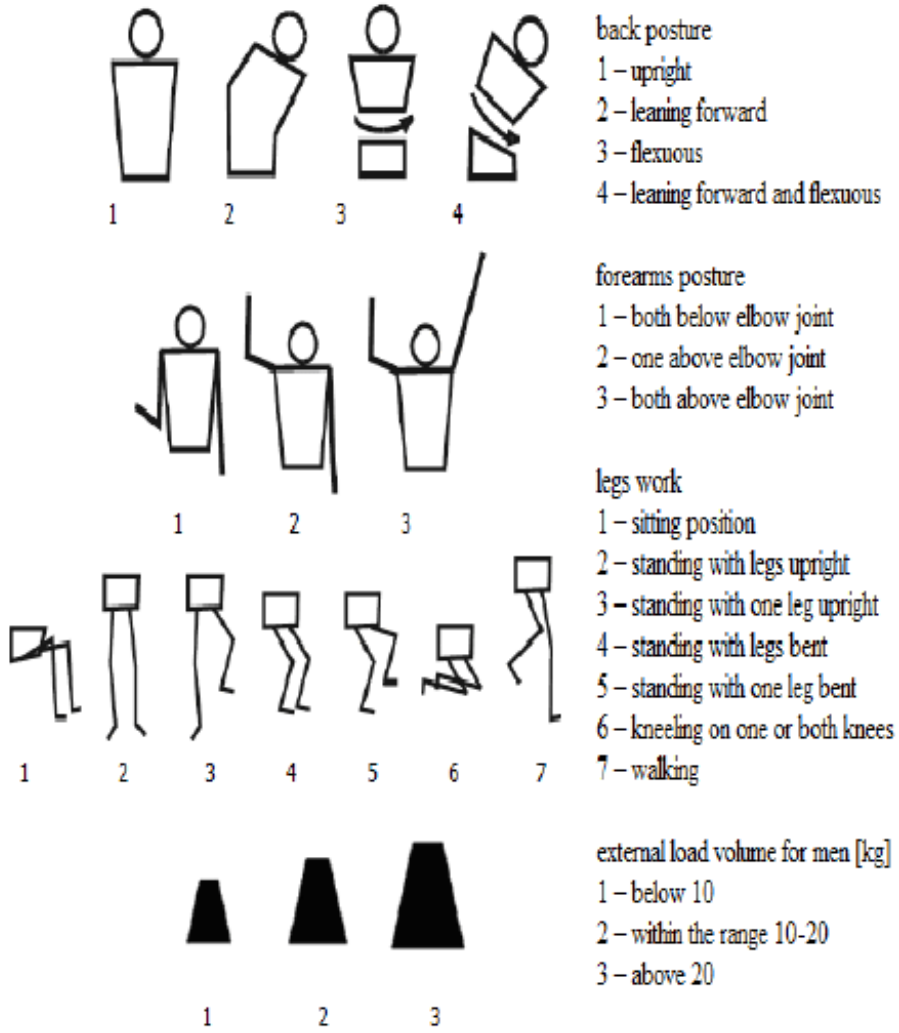

MATLAB App
OWAS Assessment Result
Back: [2]Leaning forward
Arm: [1]Both below elbow joint
Legs: [7]Walking
Load: [3]Above 20kg
ACTION LEVEL:
3
T6.jpg
Import an image
Cropped Image
Initial Image


MATLAB App
OWAS Assessment Result
Back: [4]Leaning forward & Flexous
Arm: [2]One above elbow joint
Legs: [2]Standing with legs upright
Load: [1]Below 10kg
ACTION LEVEL:
2
T6.jpg
Import an image
Cropped Image
Initial Image


MATLAB App
OWAS Assessment Result
Back: [1]Upright
Arm: [1]Both below elbow joint
Legs: [7]Walking
Load: [3]Above 20kg
ACTION LEVEL:
1
T6.jpg
Import an image
Cropped Image
Initial Image

IV. Back-end Flow





V. Conclusion

- ❑ High accuracy Key-point identifying (PostNet)
- ❑ Promising result on assessments
- ❑ Policies for the model
- ❑ Manual input information (product weight)
  - Image angle
  - Balance image rotation

Q & A