

A decorative graphic on the left side of the slide, consisting of white lines and circles on a blue gradient background, resembling a circuit board or neural network.

# IMAGE PROCESSING APPLICATION IN ROBOTICS

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1

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## TODAY'S OPERATION

- Industrial robots
- Collaborative robot
- Humanoid robots

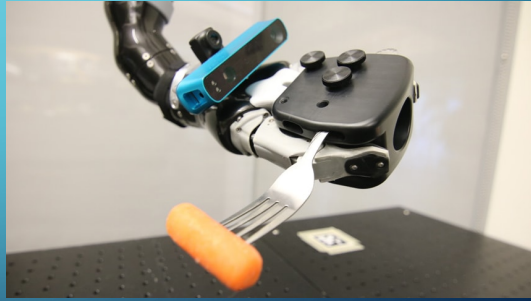
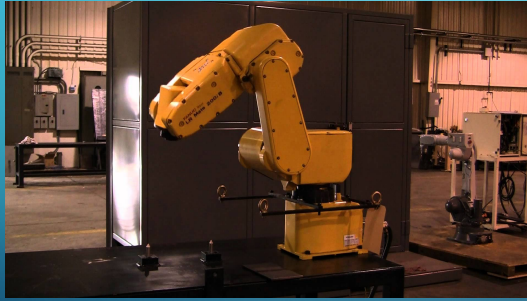
A decorative graphic on the right side of the slide, consisting of white lines and circles on a blue gradient background, resembling a circuit board or neural network.

2

## INDUSTRIAL ROBOTIC ARM

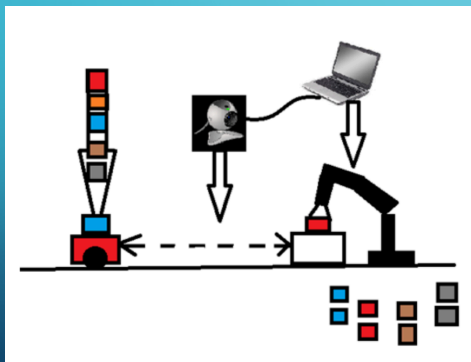
### Problem:

- Where its hand is
- It needs to create a 3-D model of its environment and locate its hand within a 3-D world



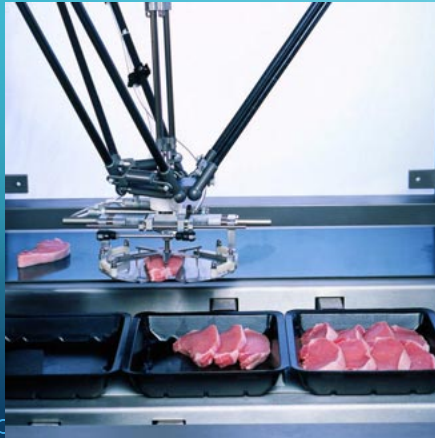
3

## ITEM CLASSIFICATION



4

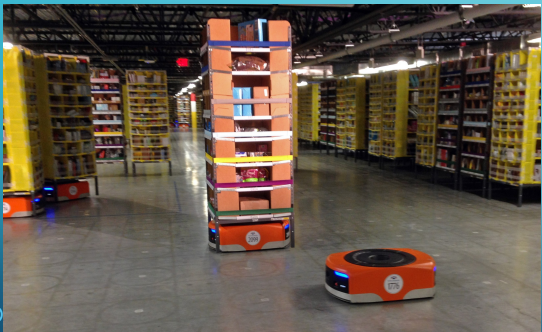
## PORK BELLY SLICING



Keep the knife in the fat layer but close to the meat

5

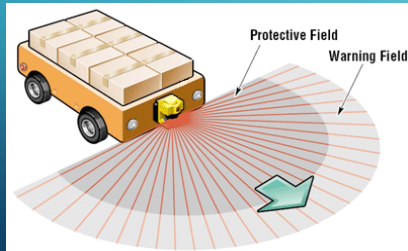
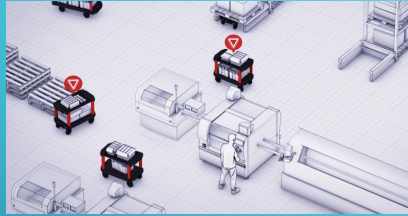
## COLLABORATIVE ROBOT



6

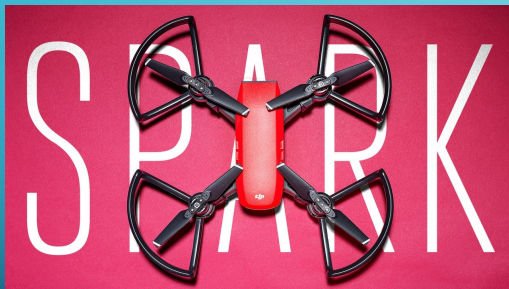


## OBSTACLE DETECTION AND NAVIGATION



7

## UNMANNED AERIAL VEHICLE(UAV)

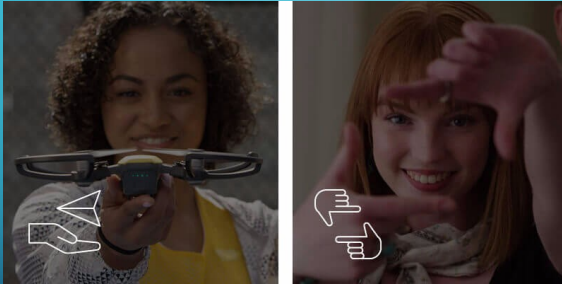


- Gesture recognition
- Face tracking
- Multiple shooting modes(shallow focus)

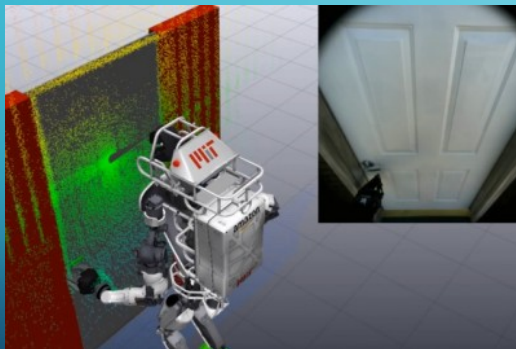
8



## GESTURE RECOGNITION

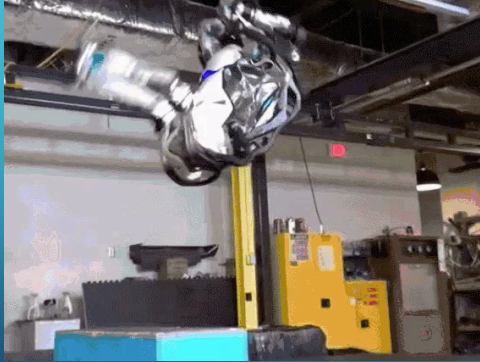


## HUMANOID ROBOTS



- Object tracking and recognition
- Navigation
- Obstacle detection

## ATLAS



11

## CONCLUSIONS

- Object detection and recognition(including face tracking)
- Navigation
- Multiple shooting modes

12

Questions?

Thank you

13

## REFERENCE

- Smart Storage or The Race of the Logistics Robots, retrieved from: <https://intralogistics.tips/smart-storage-race-logistics-robots/>
- **Is there a robot in your line's future**, retrieved from: <https://www.foodengineeringmag.com/articles/91026-is-there-a-robot-in-your-lines-future>
- Robotics, retrieved from: <https://www.pc-control.co.uk/robotics.htm>

14