

ITMO UNIVERSITY

Computer vision in the task of manipulator control

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Outline

- What is computer vision (CV)
- Where applicable
- Typical tasks of CV
- Solution for KUKA Youbot Arm
- Conclusions

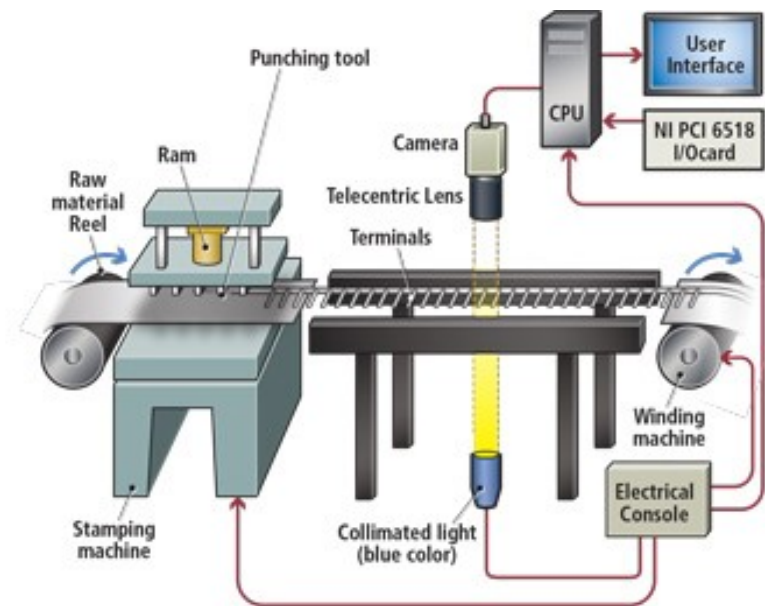
What is computer vision

Computer vision is the theory and technology of creating machines that can detect, track and classify objects



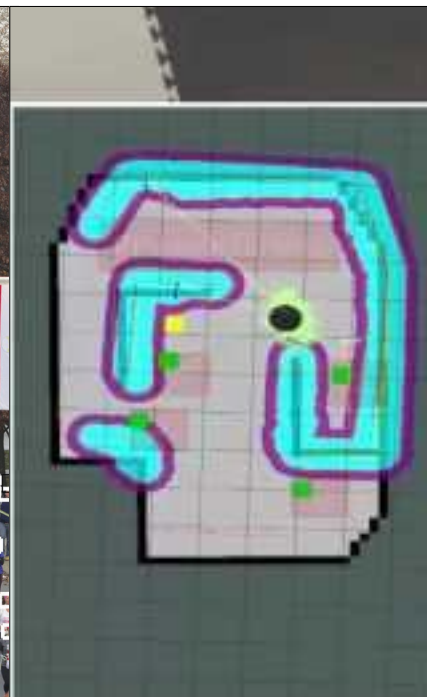
Where applicable

- Automatic inspection
- Assisting humans in identification tasks
- Controlling processes



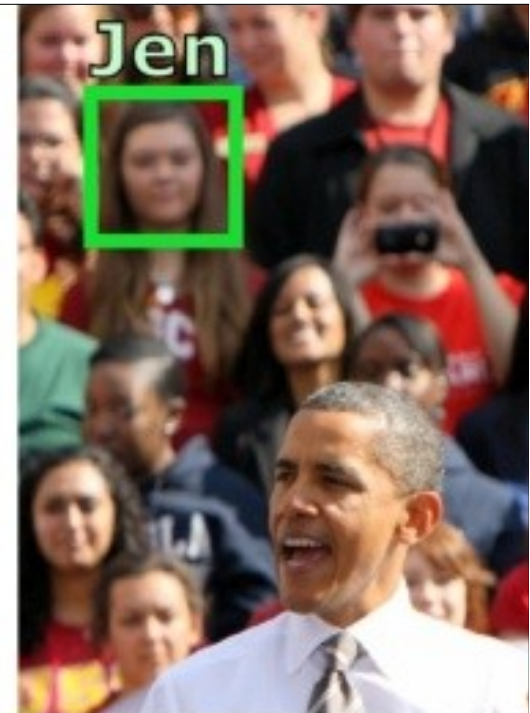
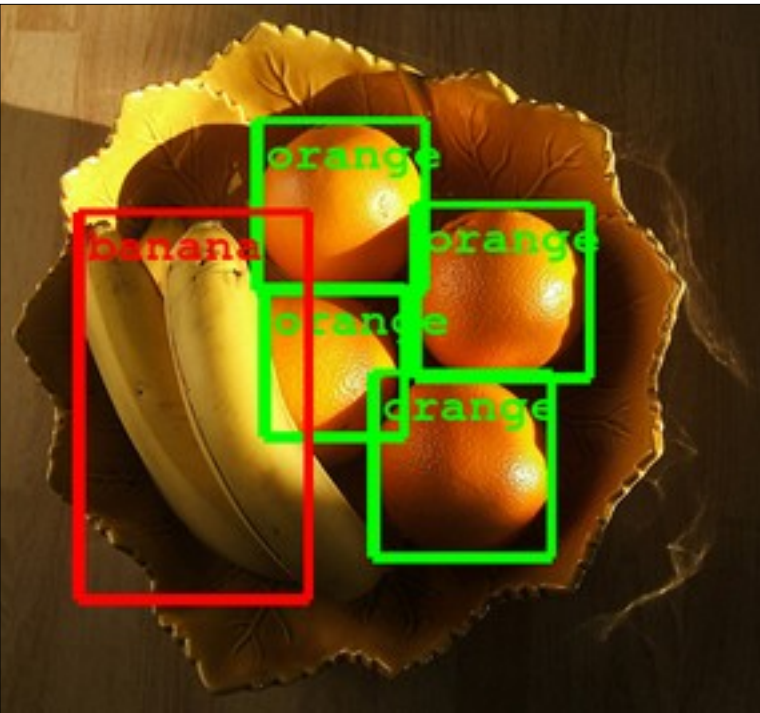
Where applicable

- Detecting events
- Interaction
- Modeling objects or environments
- Navigation
- Organizing information

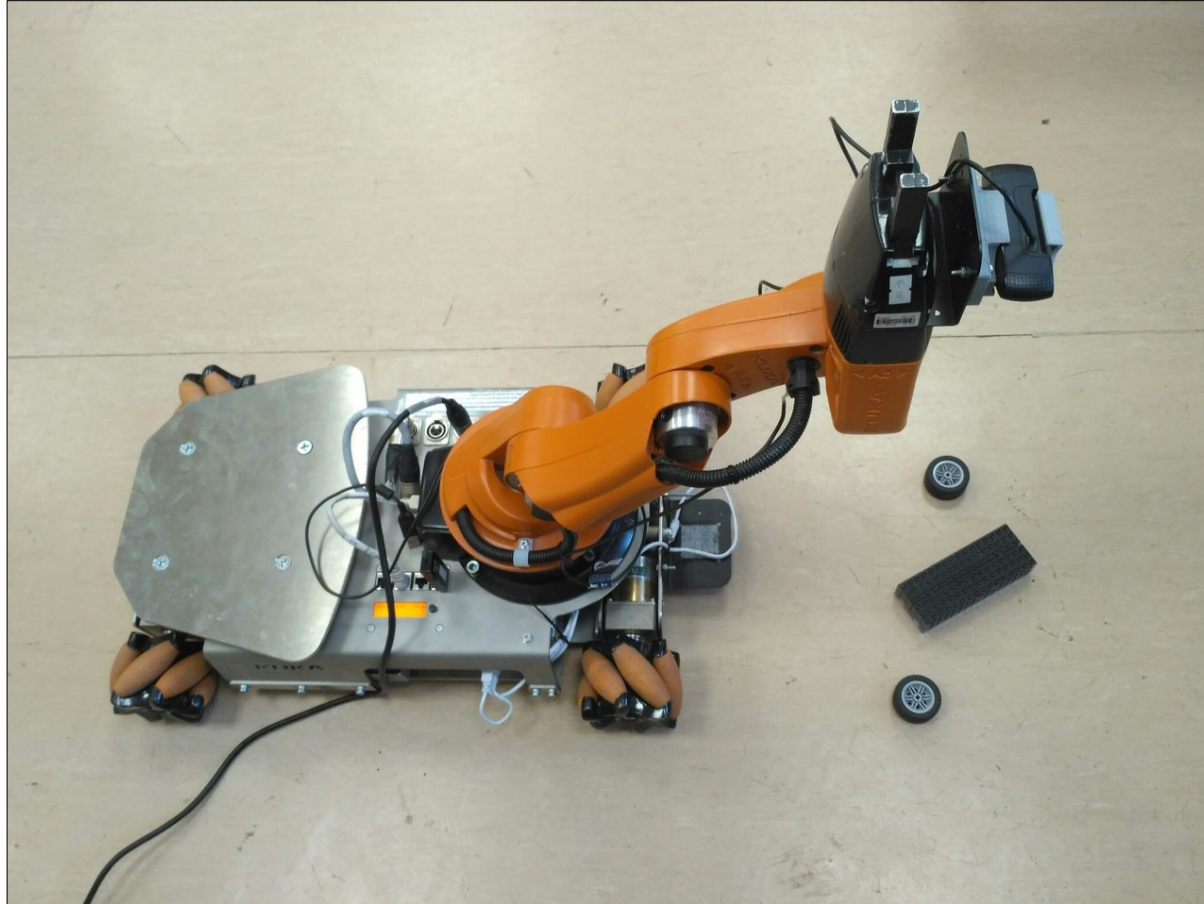


Typical tasks in CV

- Content-based image retrieval
- Pose estimation
- Optical character recognition (OCR)
- Facial recognition
- Shape Recognition Technology (SRT)

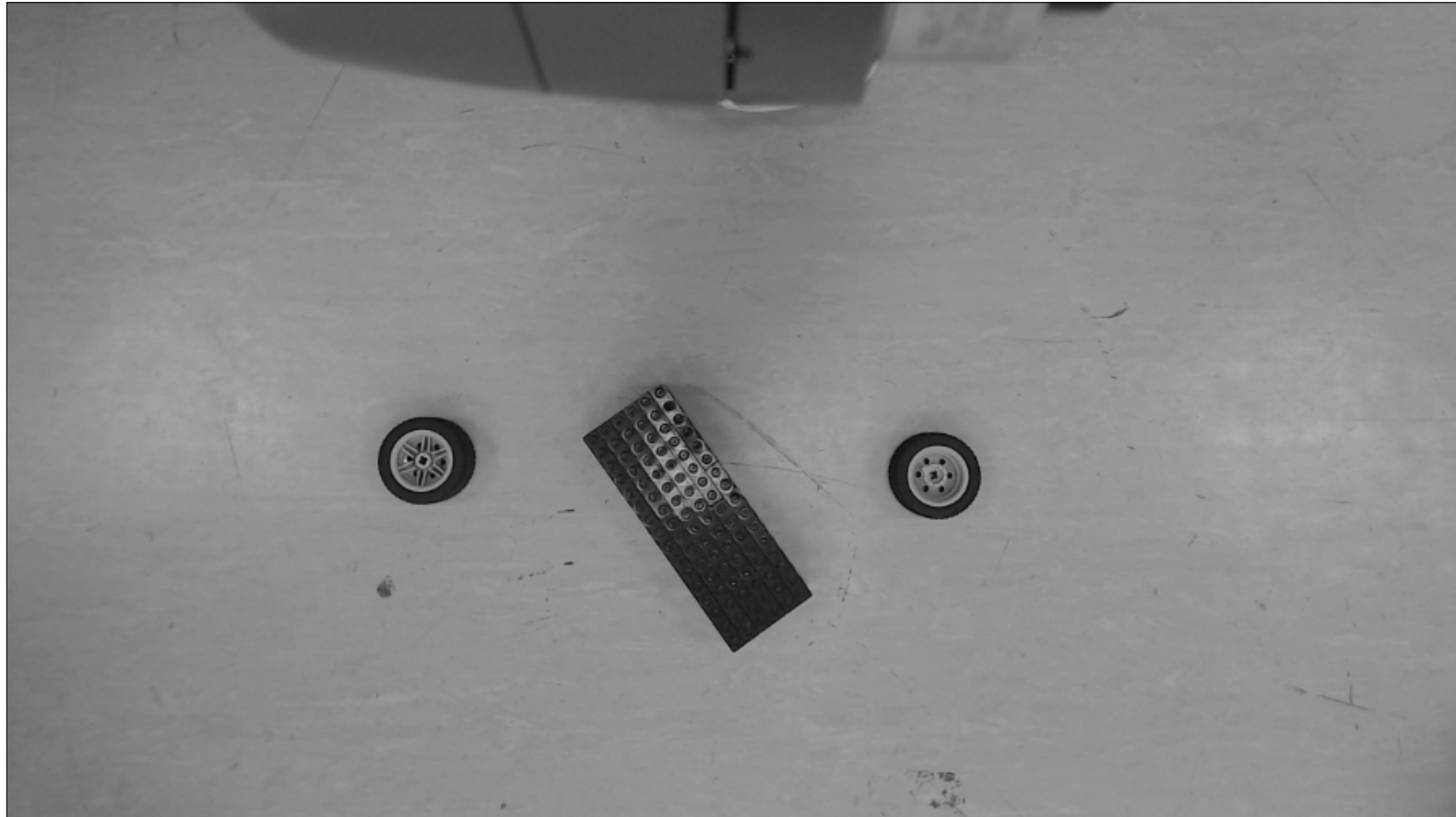


Solution for KUKA Youbot Arm



KUKA Youbot Arm with camera

Solution for KUKA Youbot Arm



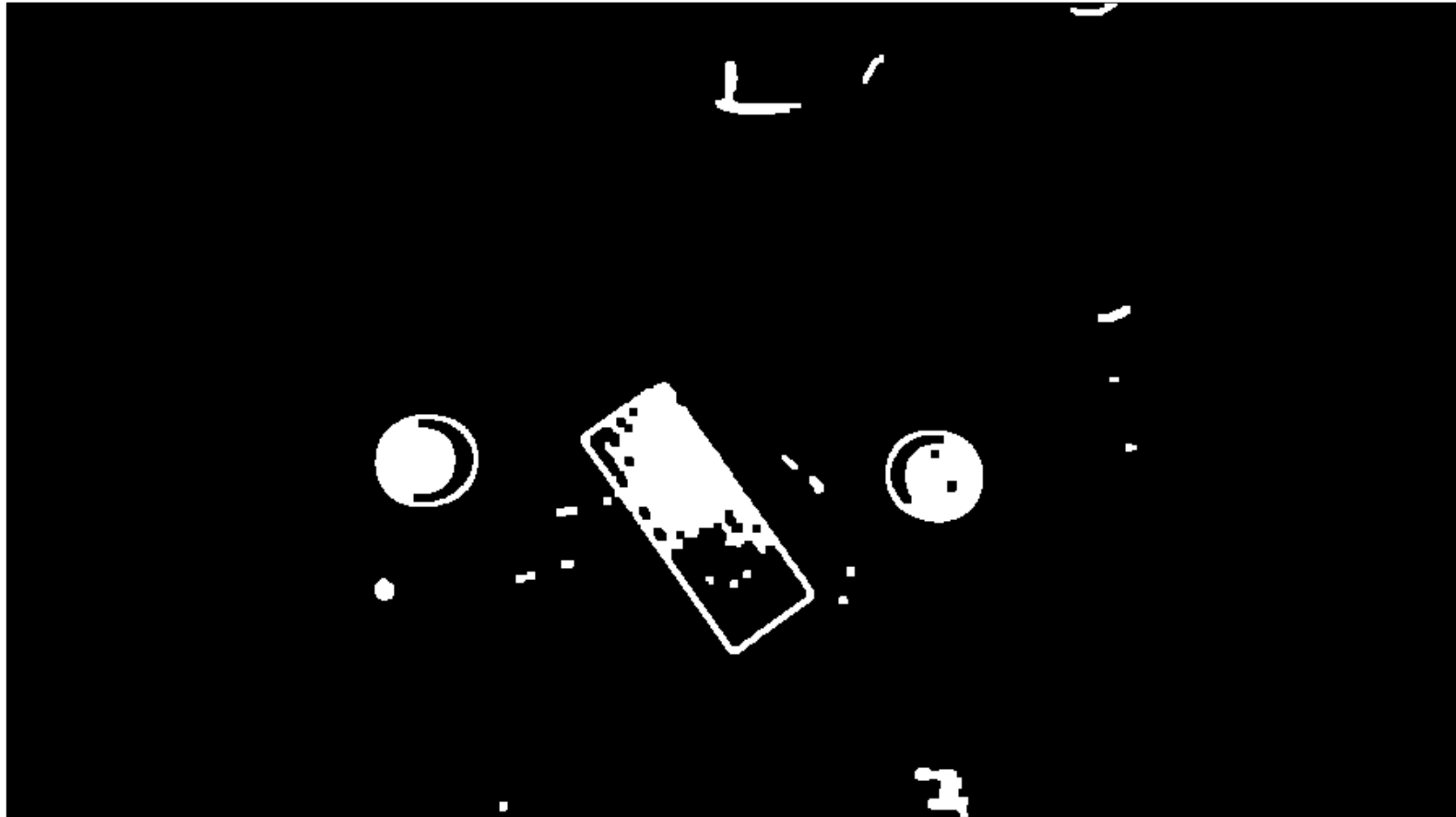
Step 1: getting gray image from camera

Solution for KUKA Youbot Arm



Step 2: blur the image

Solution for KUKA Youbot Arm



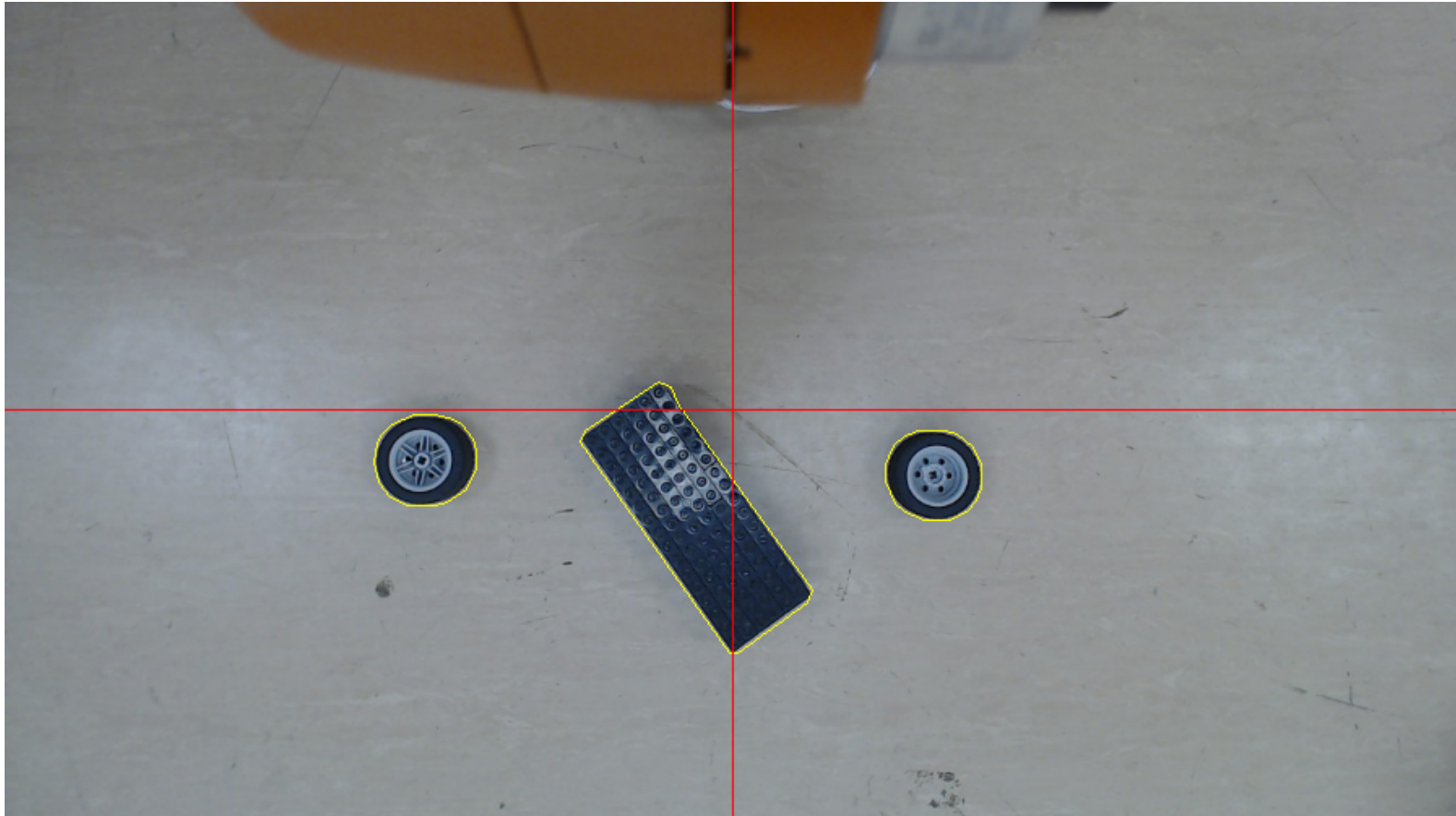
Step 3: apply Canny filter

Solution for KUKA Youbot Arm



Step 4: finding all contours

Solution for KUKA Youbot Arm



Step 5: comparing each contour with templates,
find useful

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Thank you
for your attention!

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