

Lecture 5: Practical image processing in robotics

Object Manipulation and Task Planning

Victor Risager

February 20, 2024

1 Computer vision vs image processing

Image processing is a subset of computer vision, where you apply sharpnes etc. Outside of controlled environments there are more occlusions and it is not a controlled environment anymore.

There are different applications

- Grasping and manipulation
- Navigation
- Process control and quality documentation
- Surveillance
- ⋮
- Biomedics

2 Human visual system

Above 70% of our sensory receptors are visual sensors. The photo receptors in the eye are split up into two types, one type is centered in the center of the eye, and the others are outside. That allows us to focus directly on subjects and everything is blurry.

3 Distortion

Radial vs tangential. Tangential distortion is a shift, or rotation around a diagonal in the image. i.e. decentering of the image. Radial is the barrel effect.