PS6 tips

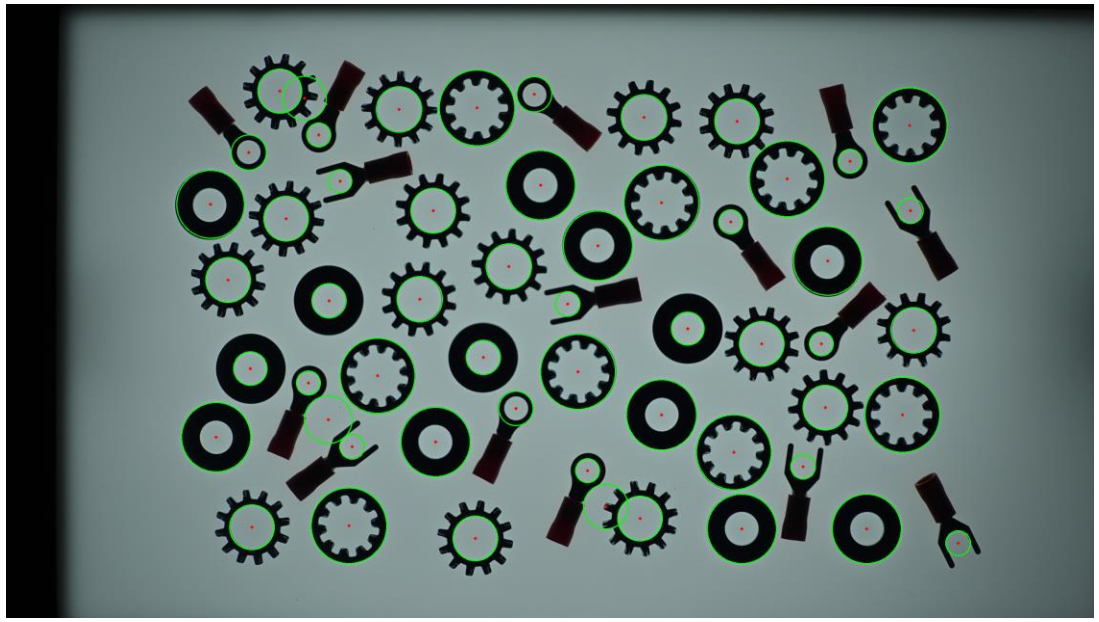
Practical method selection

These two methods are not often used in real-world applications:

- Hough transform (especially circle) of OpenCV
- Template matching for shape matching

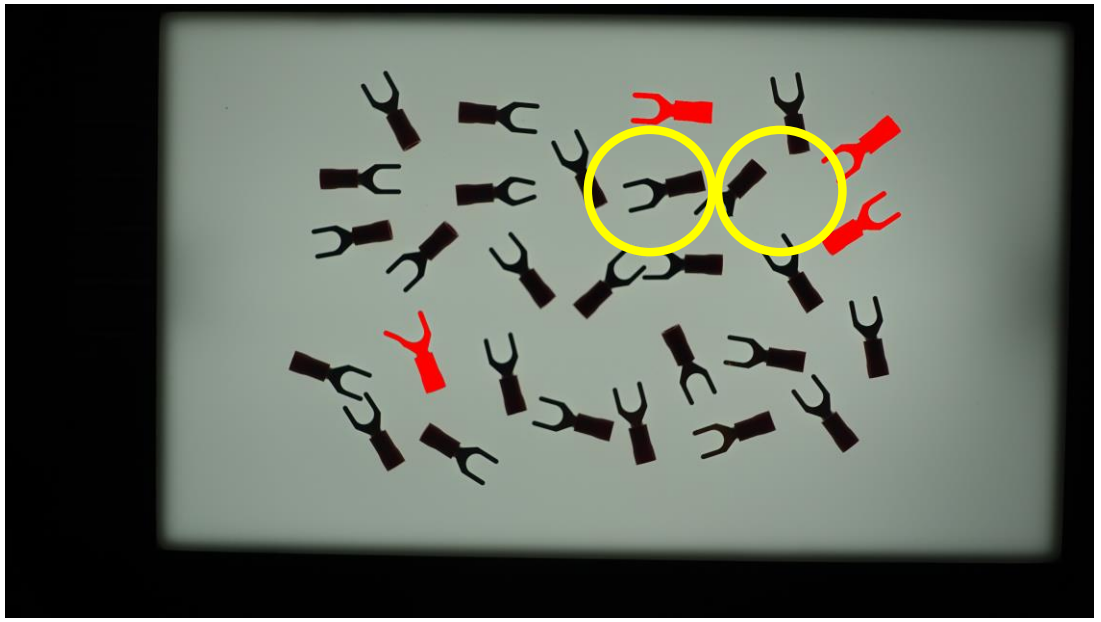
Circle/Line Detection

- Hough transform algorithm
  - It is difficult to use the OpenCV implementation
    - Same center circle
    - Circle size needs to be specified.
    - Separate circle/line matching (noise)
- Practical solution
  - Contour Detection
    - Length ($2\pi r$)
    - Area (πr^2)



Template matching limitation (defective parts)

- Template matching requirements
  - Same/similar size
  - Better on grayscale or pattern
  - Pattern matching not shape matching, but region similarity
    - Binary image does not suit
    - White/Black background also match.
- Size and Orientation invariant methods are better for shape similarity check.



3parts.py

- Current Status
  - Separation (not complete) of image
    - Opening (E->D), multiple?
  - Number of contour lines
  - Bounding box shape
- You need to complete in/out gear separation