Automated Optical Inspection

Automated Optical Inspection (AOI) is an important method for quality control in the Industry 4.0. This method collect images of products by optical instrument, than process them with image processing technique to find abnormality or defects.

In the image processing part, training deep learning model with big image data is one of the mainstream solution. However, we seldom get enough number of images for every category in the practical problem, the classification model can not achieve the desired results in this situation. In order to solve the data unbalance problem, we implement Generative Adversarial Network to generate high quality and high diversity images for categories which only have a few data, so our classification model can get enough data to achieve the desired results.