Use Case of Deep Learning Inspection
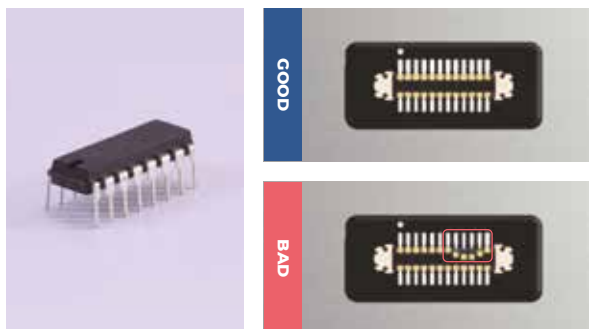
- Electronics
- PCB
- Display
- Battery
- Automotive parts
- Food

Polytec

NEUROCLE
DEEP LEARNING VISION SOFTWARE

Electronics

IC Chip

IC chip Defect Inspection
Classify IC chips with terminal breakage and incorrect alignment as defects using Classification model

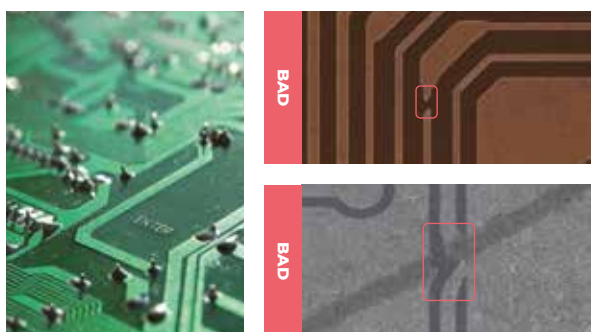### Earphone Filter Mesh

Earphone Filter Mesh Inspection
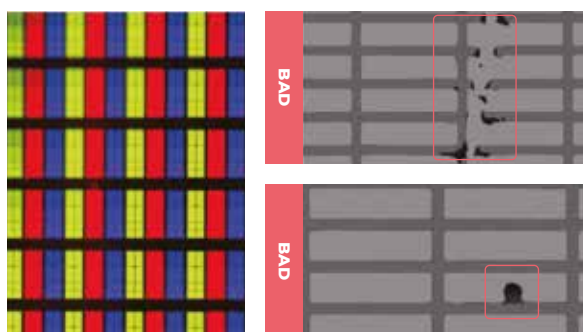Classify 6 types of filter mesh including regular items and defective items such as broken yarn

PCB & Display

PCB

PCB Defect Inspection
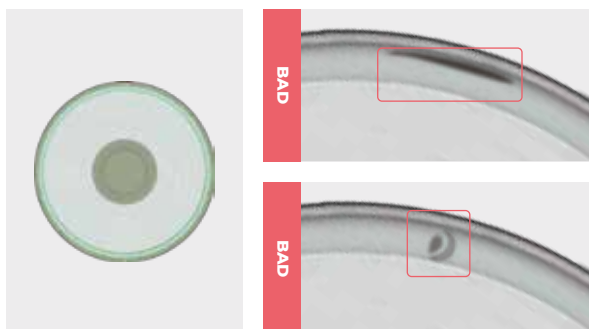Classify 14 types of defects including Short, Open and Slit using Classification model

LCD Panels

LCD Panel Array Defect Inspection
Inspect 5 types of defects such as Scratch and Gel using Classification and Segmentation models

Battery

Cylindrical Batteries

Cylindrical Batteries Defect Inspection
Detect defects such as non-welding and pin hole areas using Segmentation model

Pouch-type Batteries

Pouch-type Batteries Surface Inspection
Classify different types of products including defective items that are stamped and items with electrolyte leakage
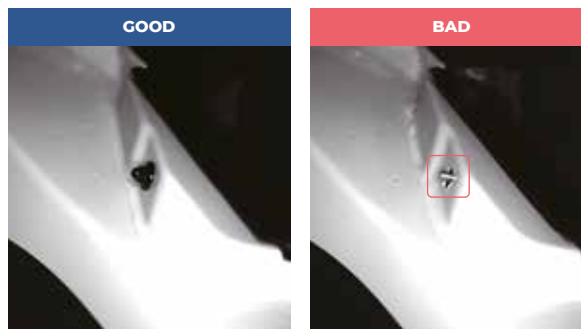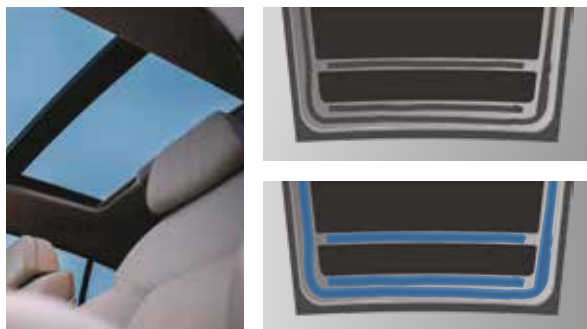
Automotive Parts

VIN Number

V F 1 H G R N D 7 M C 3 5 2 7 9 8

◇ VF1HGRND7MC352798 ◇

K N M E 5 C 2 B 0 M P 0 7 2 7 9 0

KNME5C2B0MP072790

VIN Number Recognition
Recognize alphabets and numbers of a VIN using OCR model
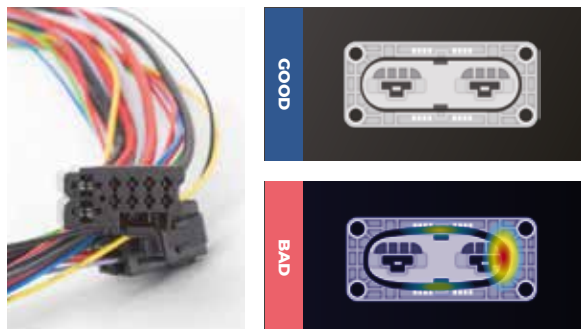
Bolts / Nuts

GOOD

BAD

Bolt and Nut Assembly Status Inspection
Check an assembled state of bolts and nuts using Object Detection model

Sunroof Glue

Sunroof Glue Attached Areas Detection
Detect a region and width of areas that are bonded with Sunroof Glue using Segmentation model
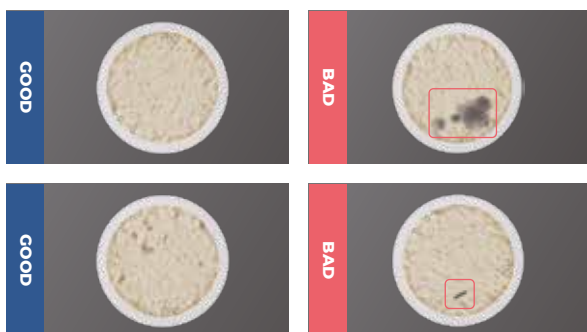
Electrical Wire Connectors

GOOD

BAD

Electrical Wire Connectors Inspection
Classify different types of defects including damaged defects and incorrectly combined defects

Food

Instant Rice

GOOD

BAD

GOOD

BAD

Instant Rice Inspection
Classify 8 types of real defective items and fake defective items using Classification model

Beverage

GOOD

BAD

BAD

X-ray Inspection of Beverages
Inspect the presence of a foreign substance inside a beverage