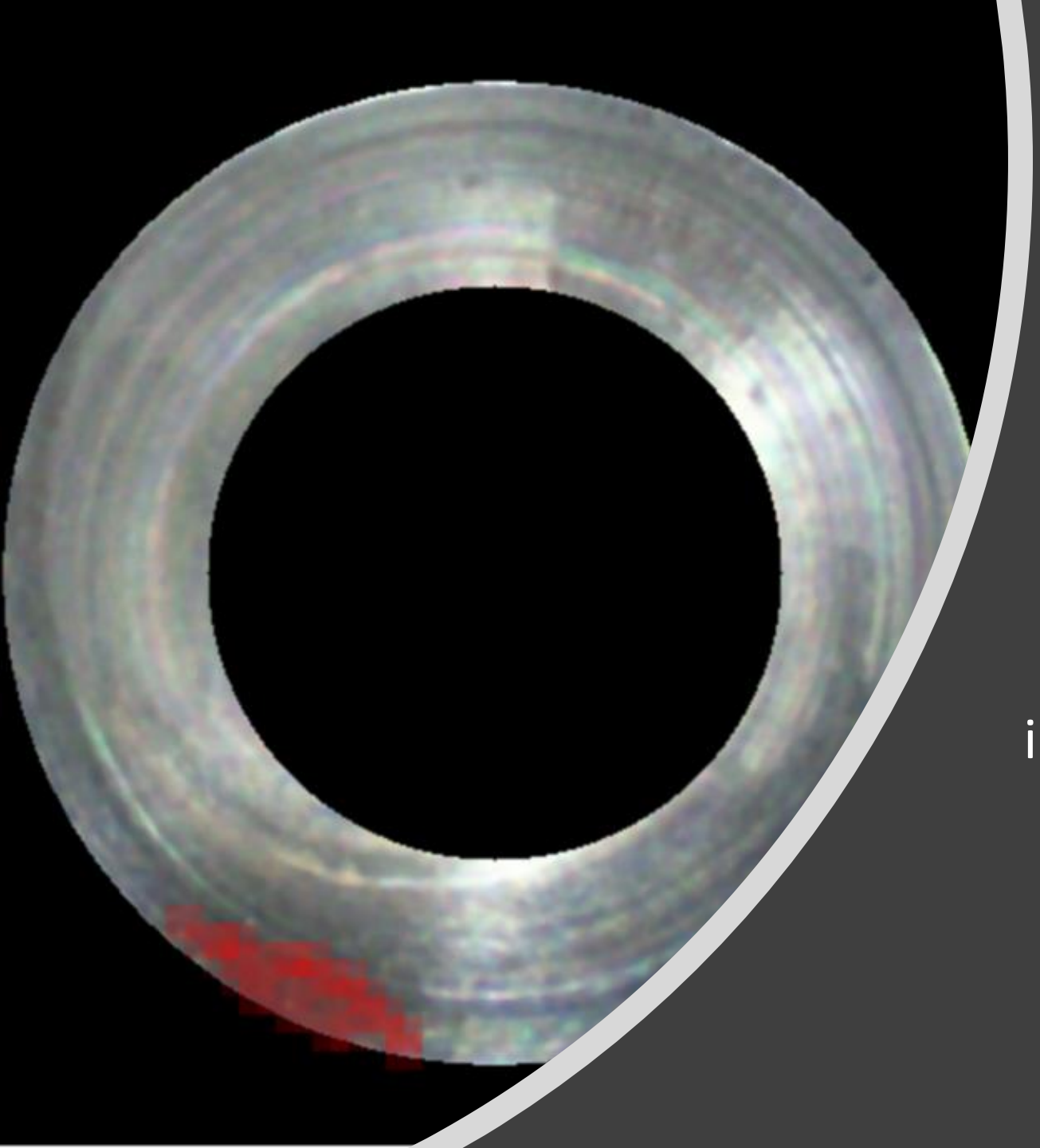
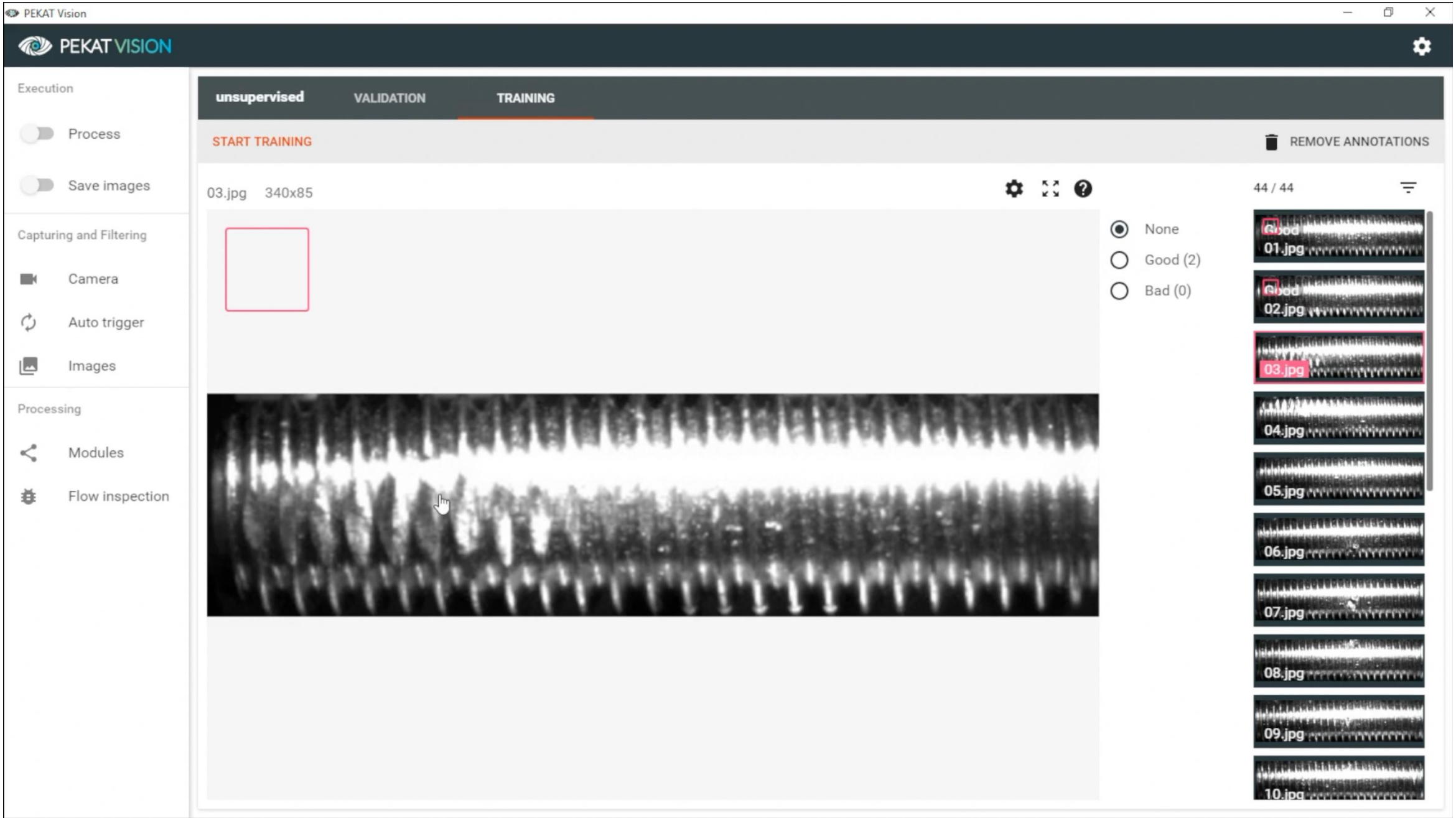
PEKAT VISION

Brain Behind the Eye



PEKAT VISION

industrial visual inspection with AI


PEKAT Vision
PEKAT VISION
Execution
Process
Save images
Capturing and Filtering
Camera
Auto trigger
Images
Processing
Modules
Flow inspection
unsupervised
VALIDATION
TRAINING
START TRAINING
REMOVE ANNOTATIONS
03.jpg 340x85
44 / 44
None
Good (2)
Bad (0)
01.jpg
02.jpg
03.jpg
04.jpg
05.jpg
06.jpg
07.jpg
08.jpg
09.jpg
10.jpg

PEKAT Vision

PEKAT VISION

Execution

Process

Save images

Capturing and Filtering

Camera

Auto trigger

Images

Processing

Modules

Flow inspection

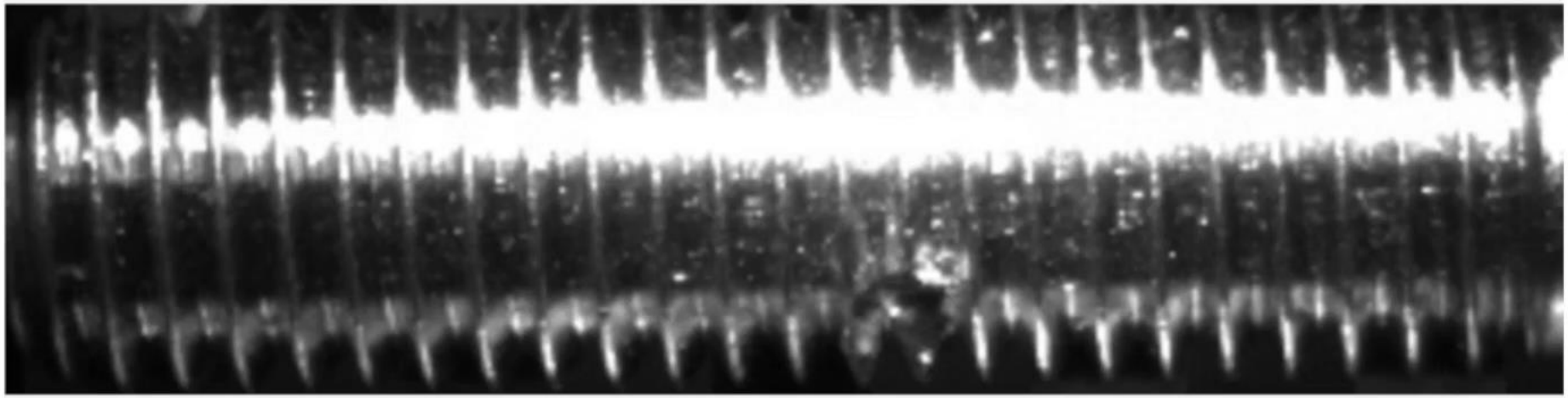
unsupervised | VALIDATION | TRAINING

LIST OF MODELS

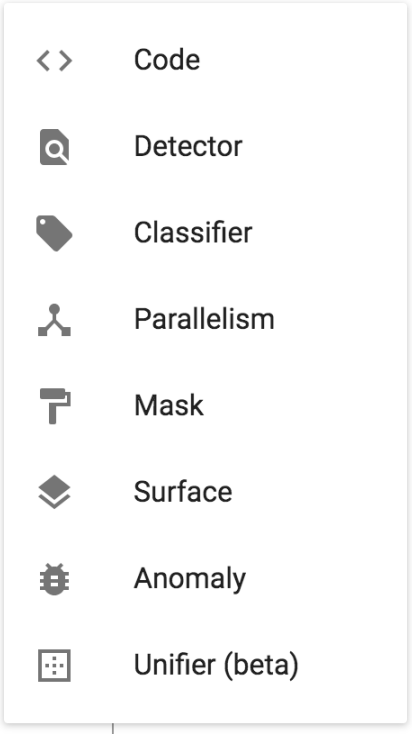
Sensitivity 82

06.jpg 340x85

44 / 44

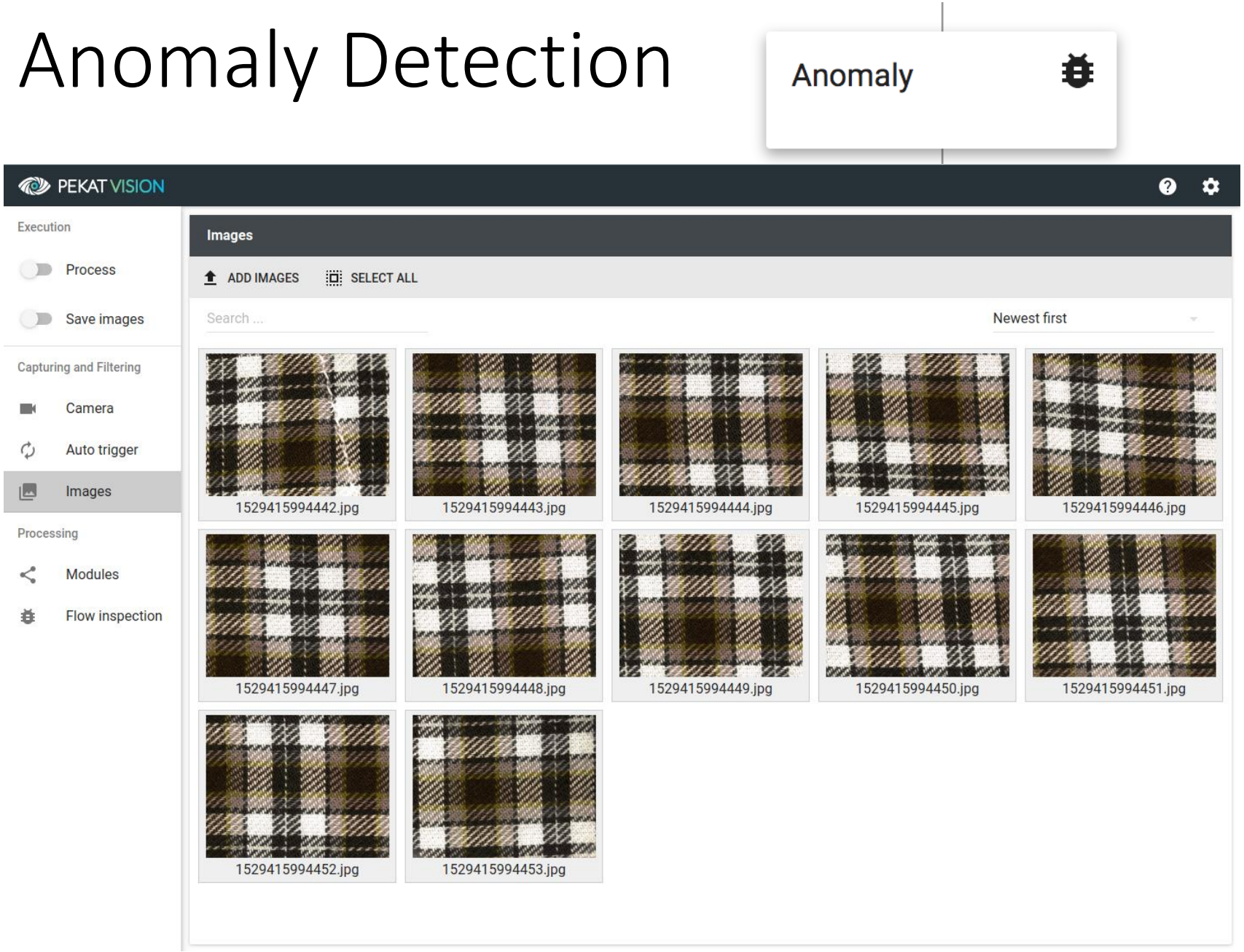


Algorithms going beyond AI



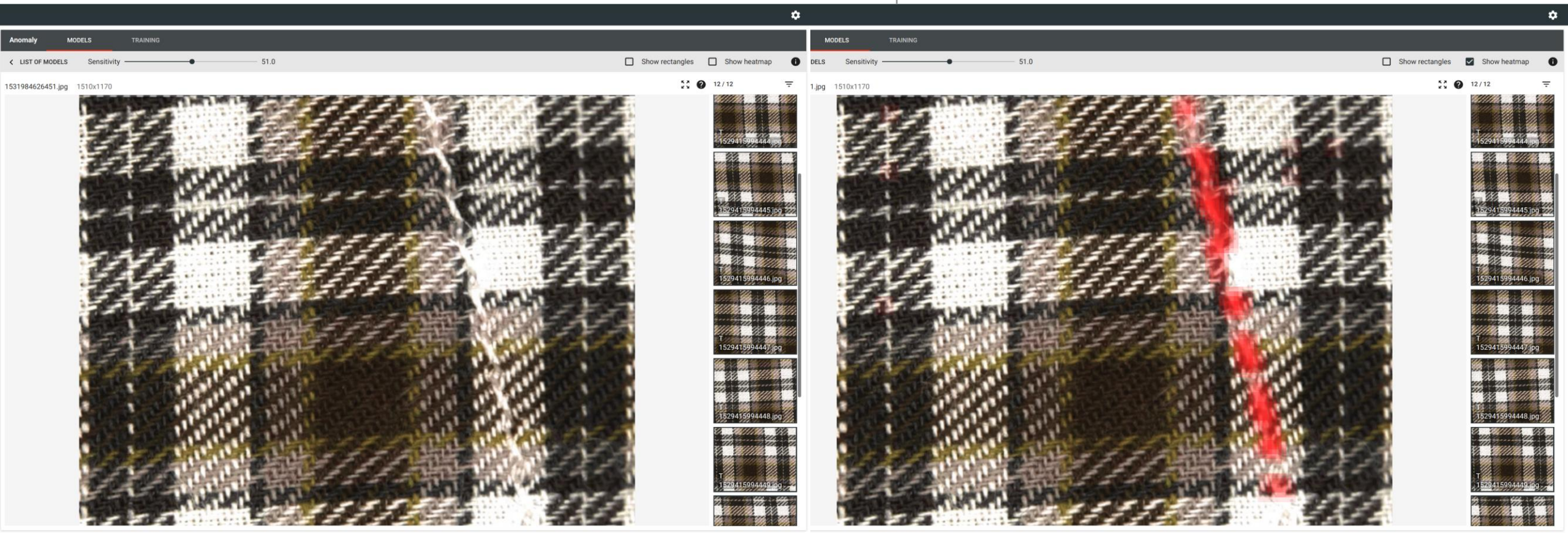
- Focused Learning
  - It is able to **focus on details**.
- Anomaly Detection
  - Training only **on positive** images
- Only a few images are enough to learn and understand the task.
- The **right set** of self-learning tools
  - Can be flexibly combined

Anomaly Detection

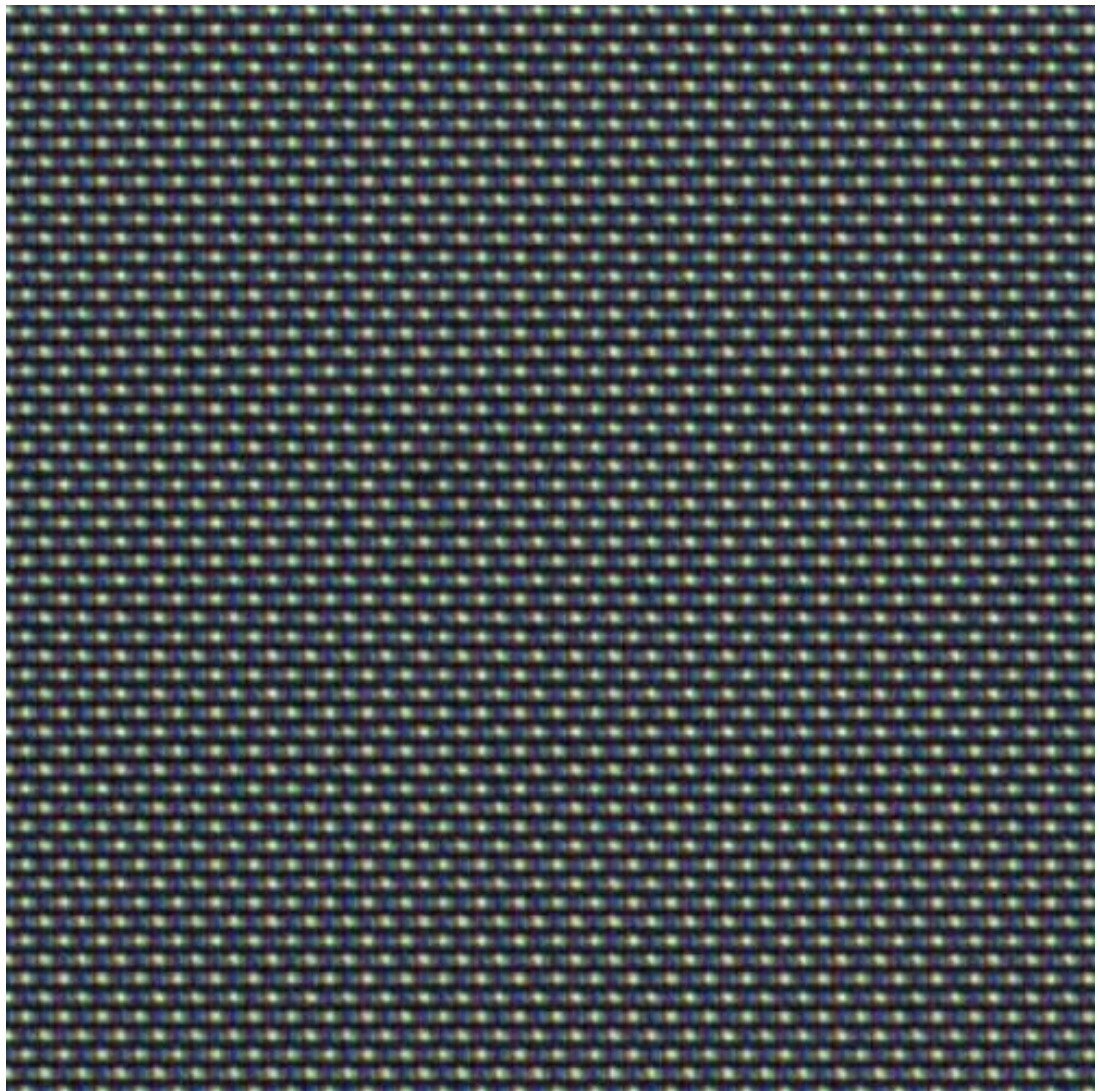


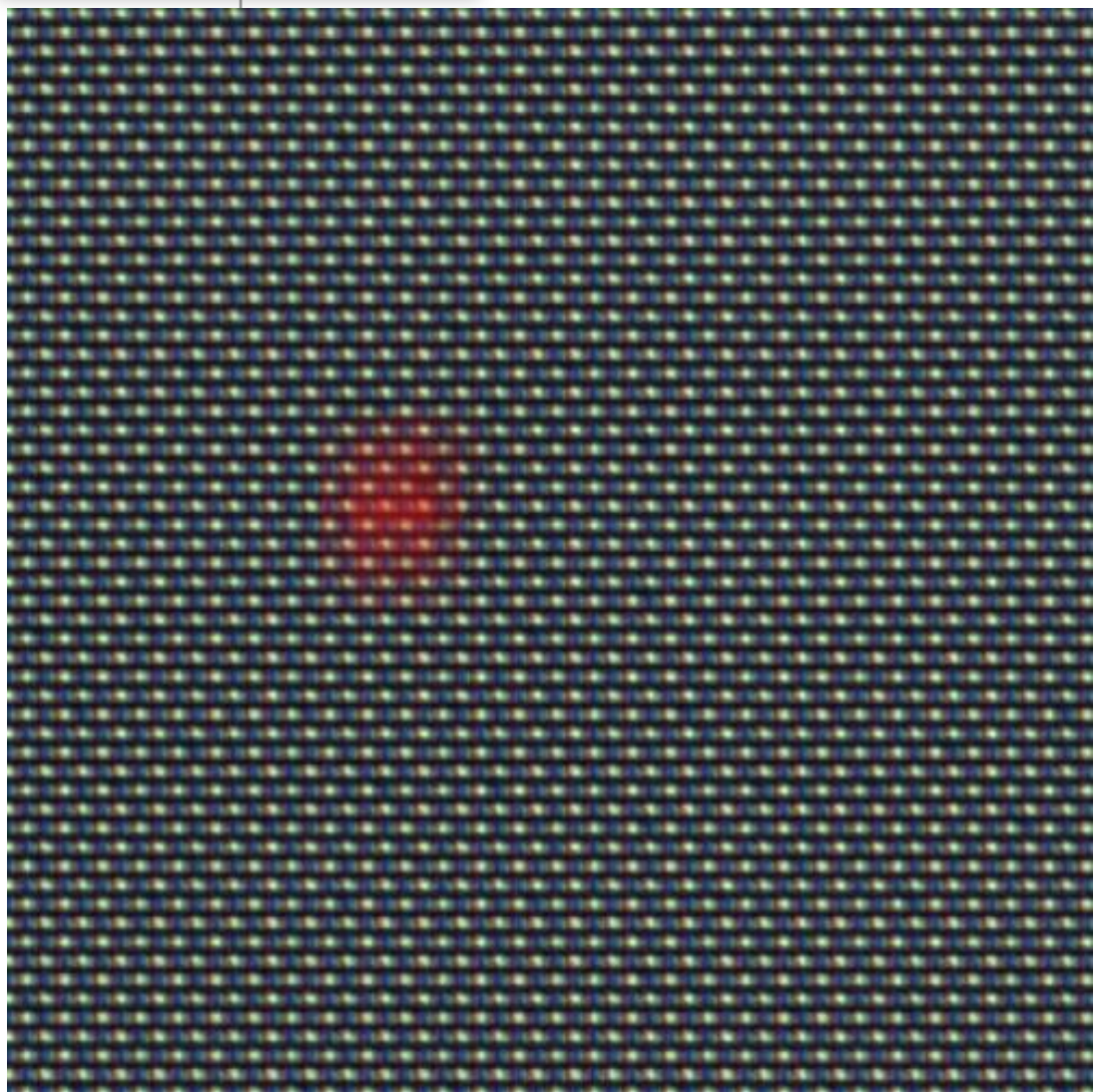
Anomaly Detection

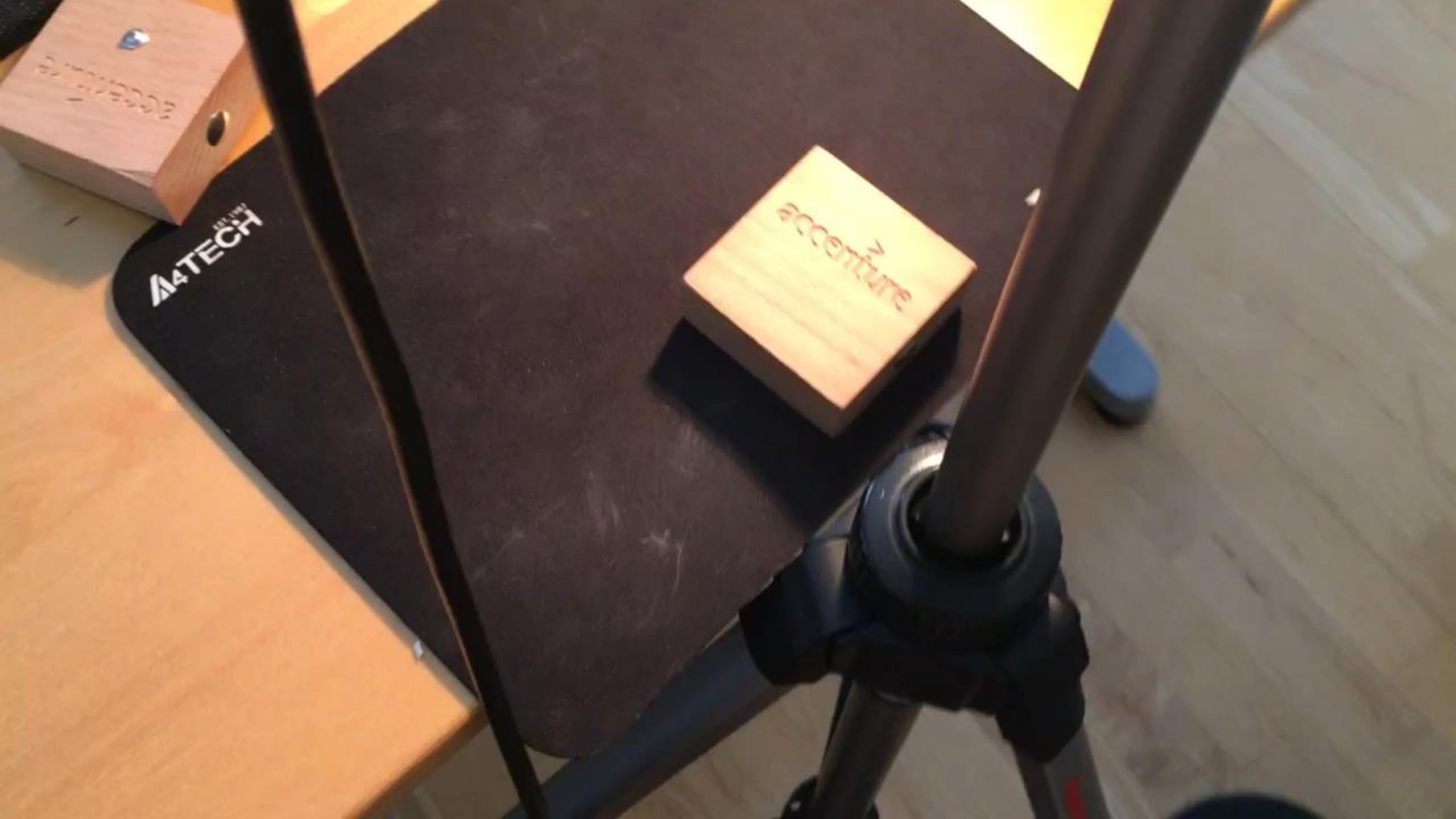
Anomaly



Anomaly Detection

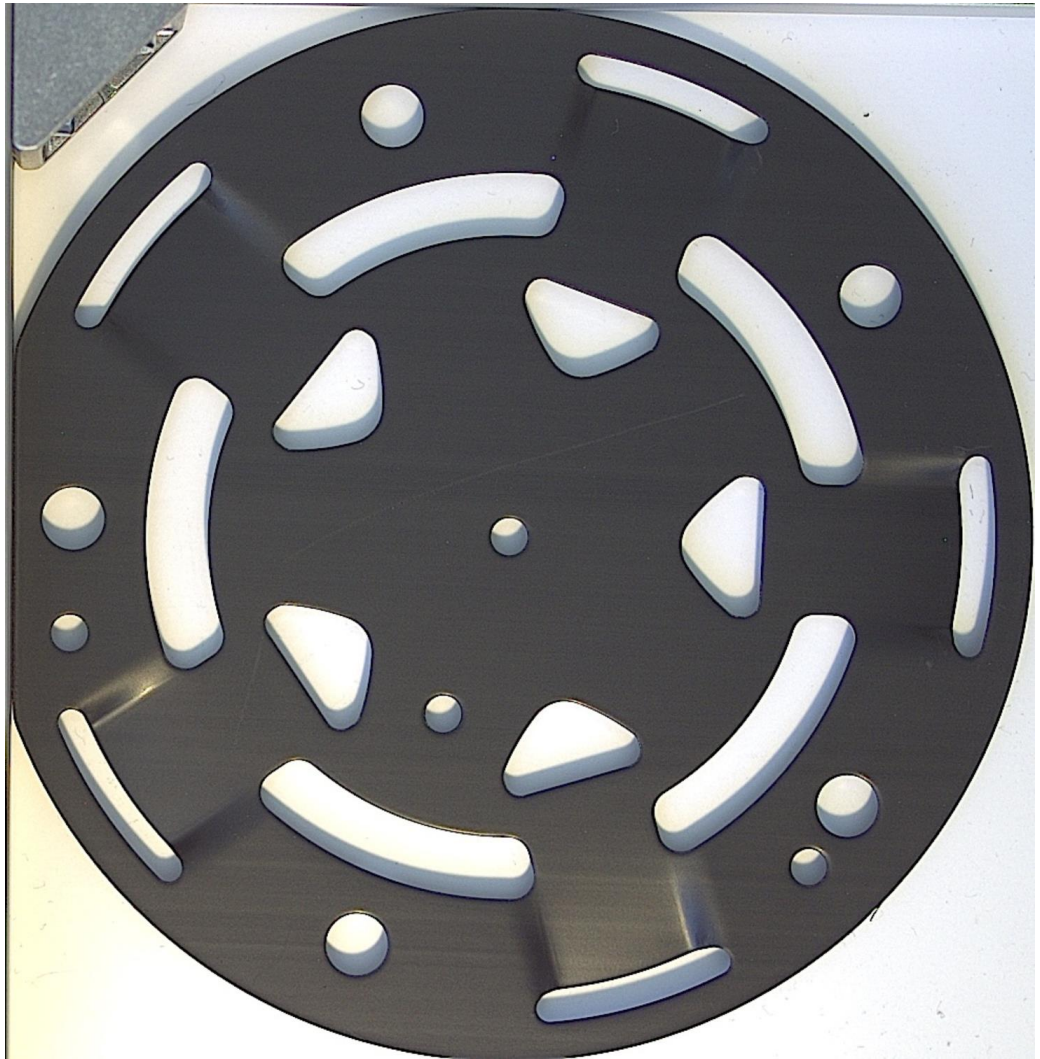


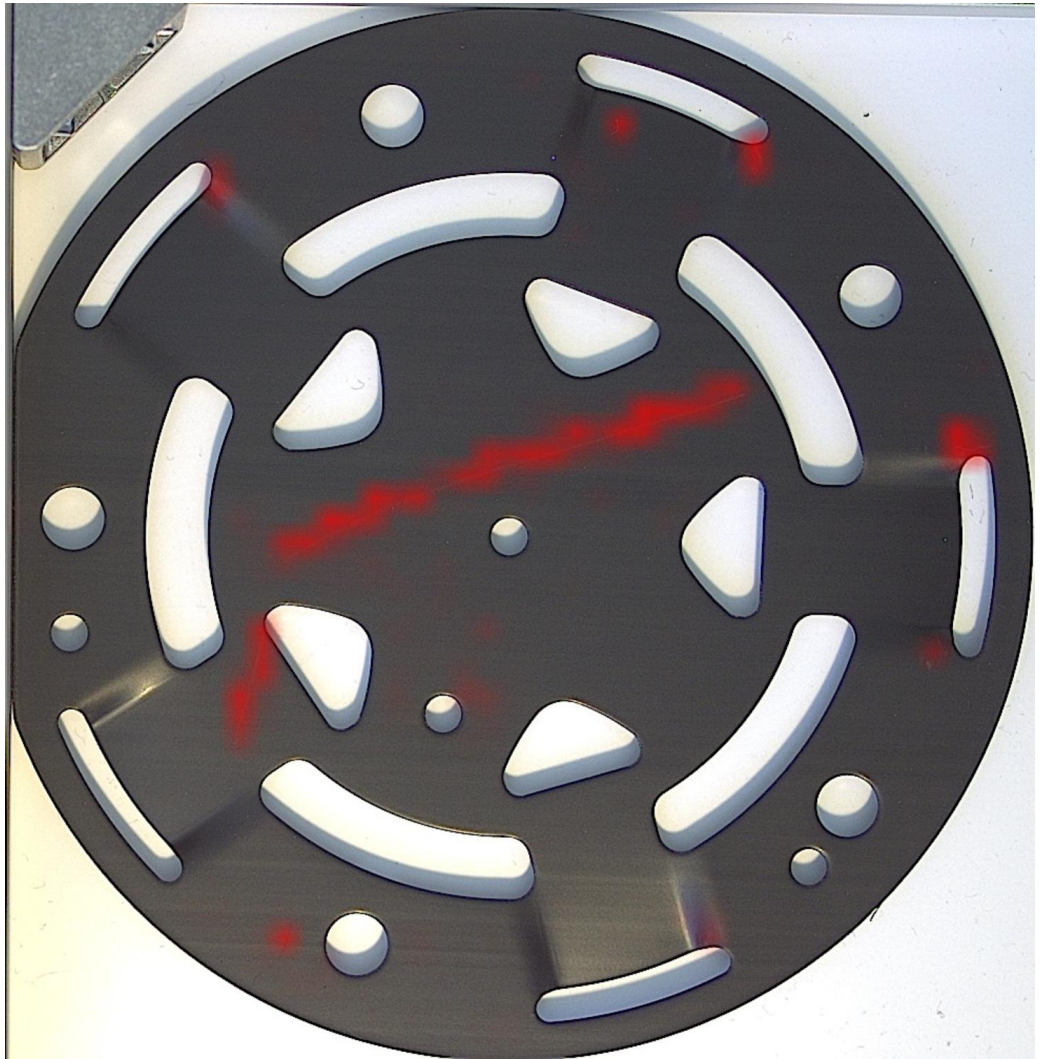



A4TECH
accenture

Surface check

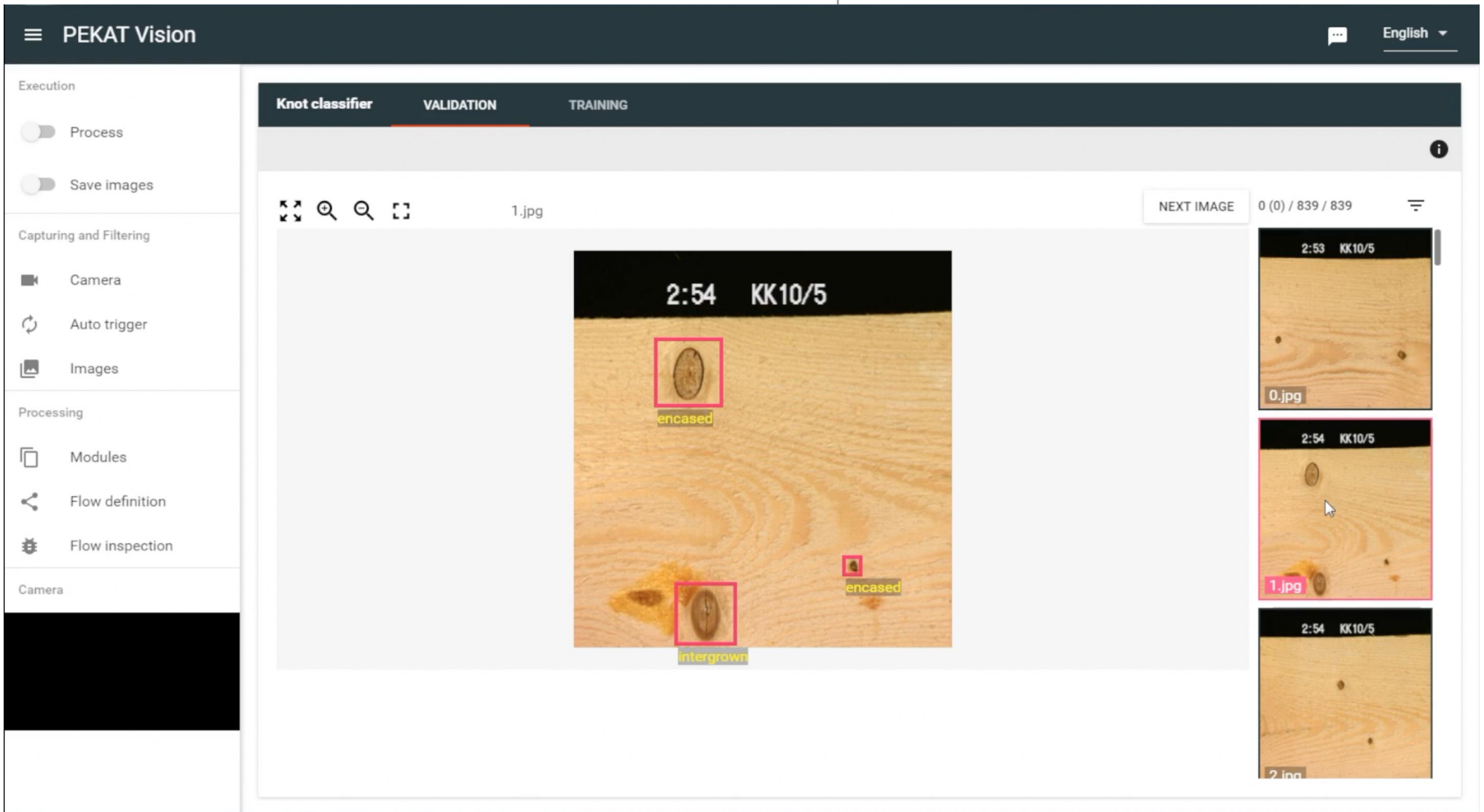
Surface

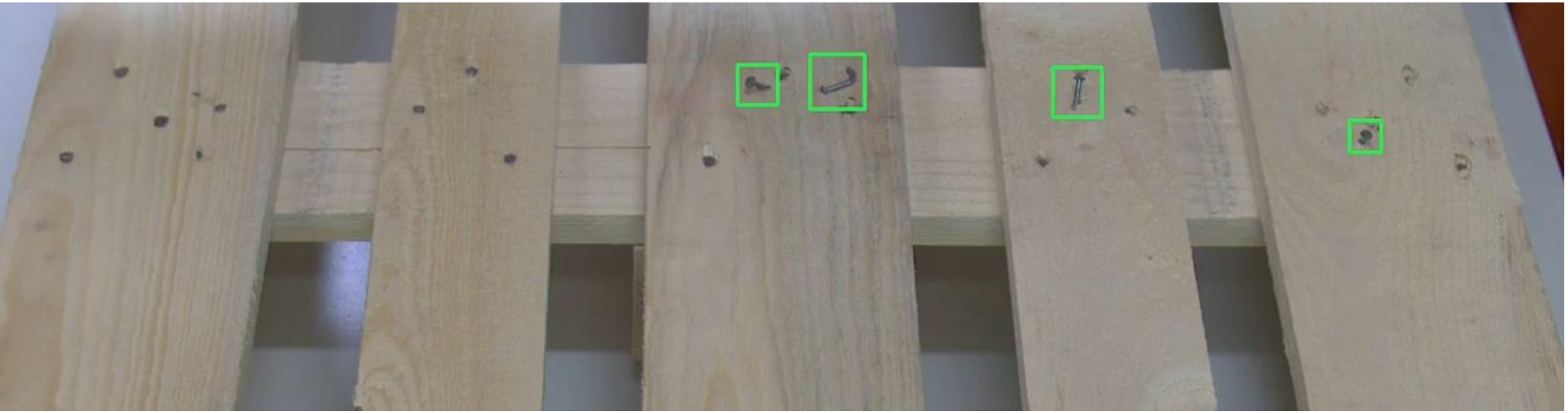




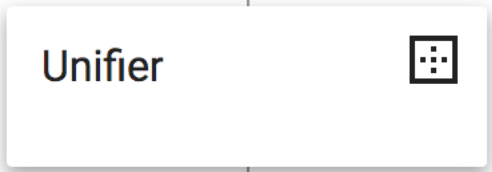
Object detection

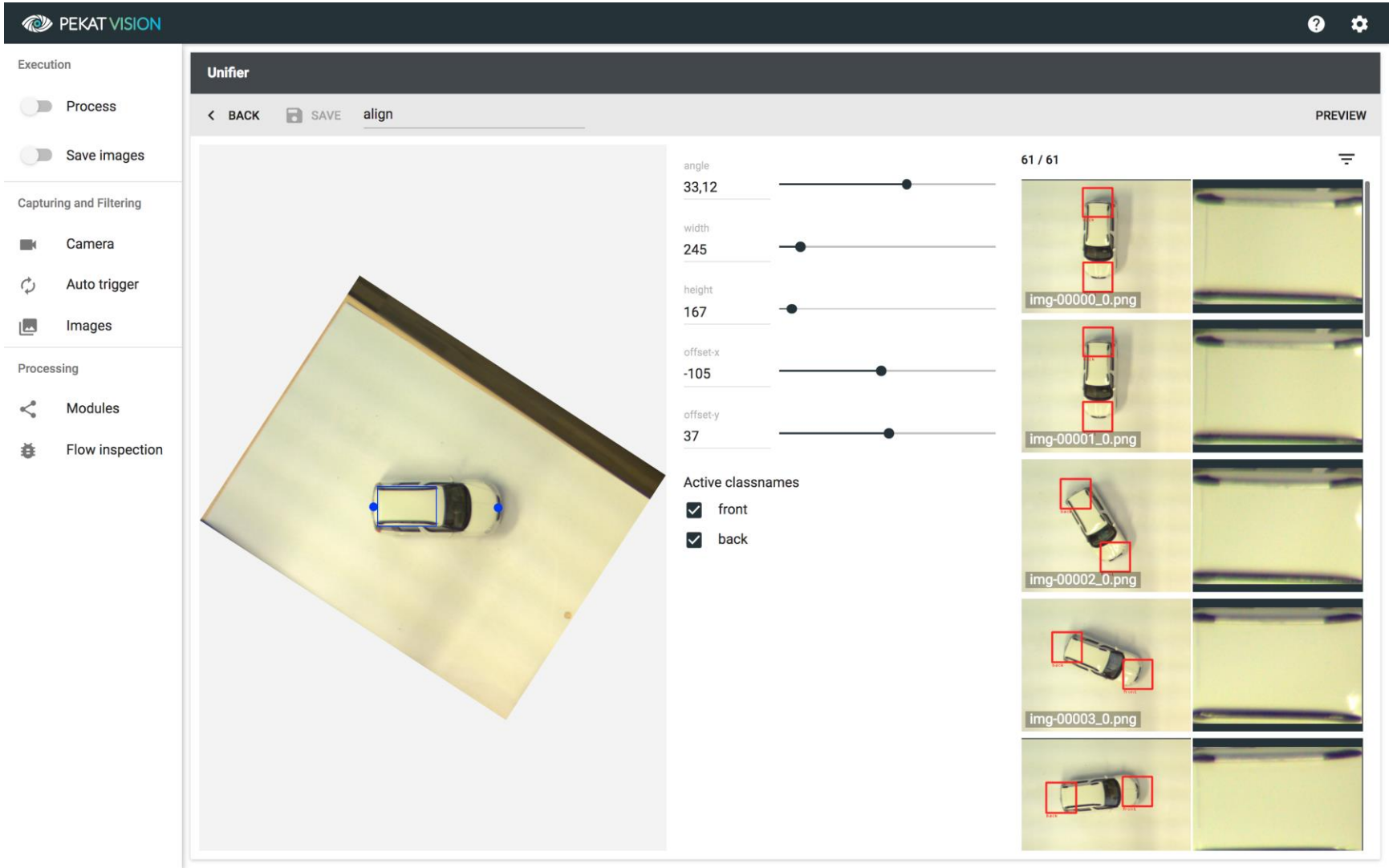
Detector





Unifier


Unifier


PEKAT VISION
Execution
Process
Save images
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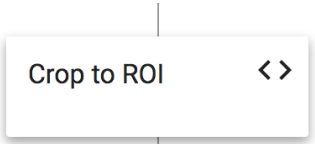
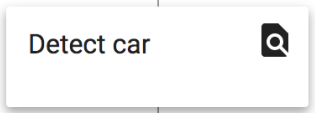
Camera
Auto trigger
Images
Processing
Modules
Flow inspection
Unifier
BACK
SAVE
align
PREVIEW
angle
33,12
width
245
height
167
offset-x
-105
offset-y
37
Active classnames
front
back
61 / 61
img-00000_0.png
img-00001_0.png
img-00002_0.png
img-00003_0.png

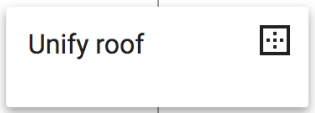
Classifier

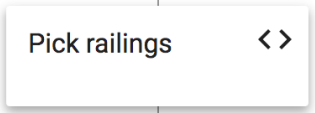
Classifier

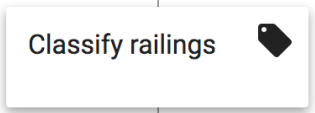
Processing Flow

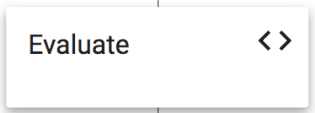


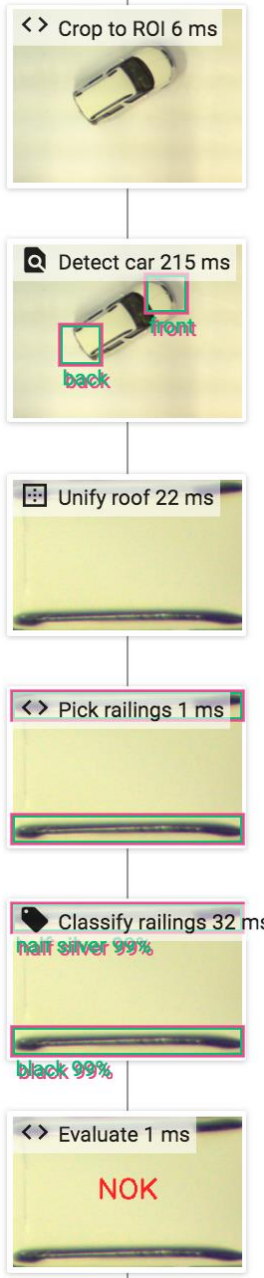













```
{
  "detectedRectangles": [
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      "classNames": [ { "label": "half silver", "accuracy": 0.99 }
    },
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    }
  ],
  "heatmaps": [],
}
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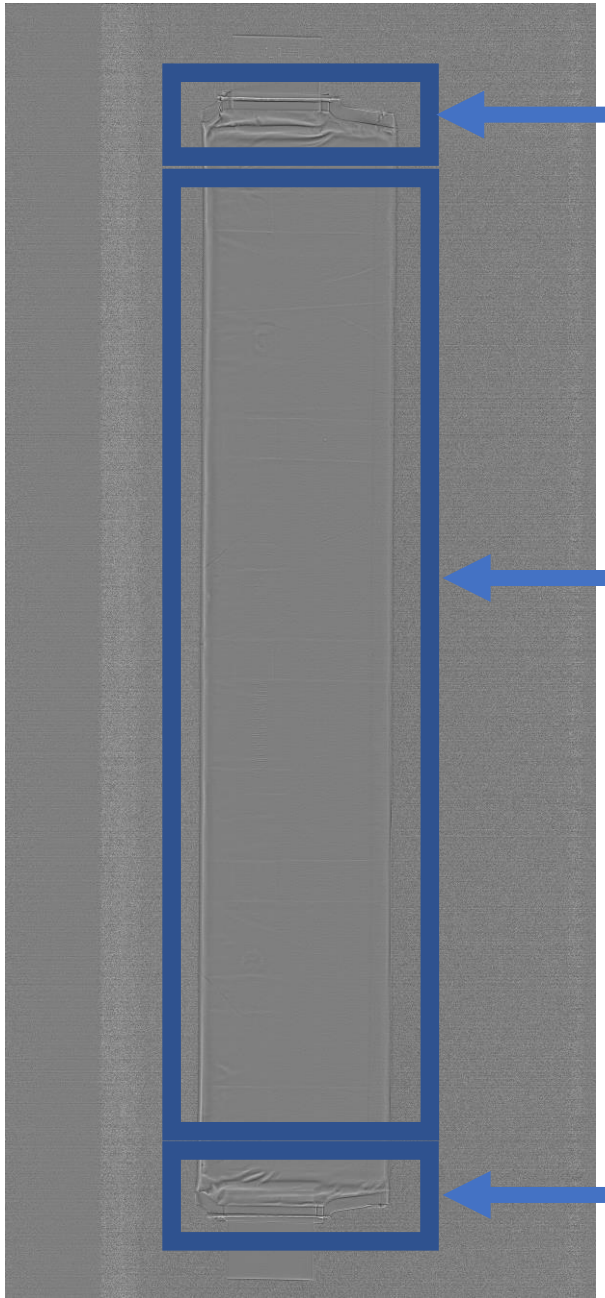
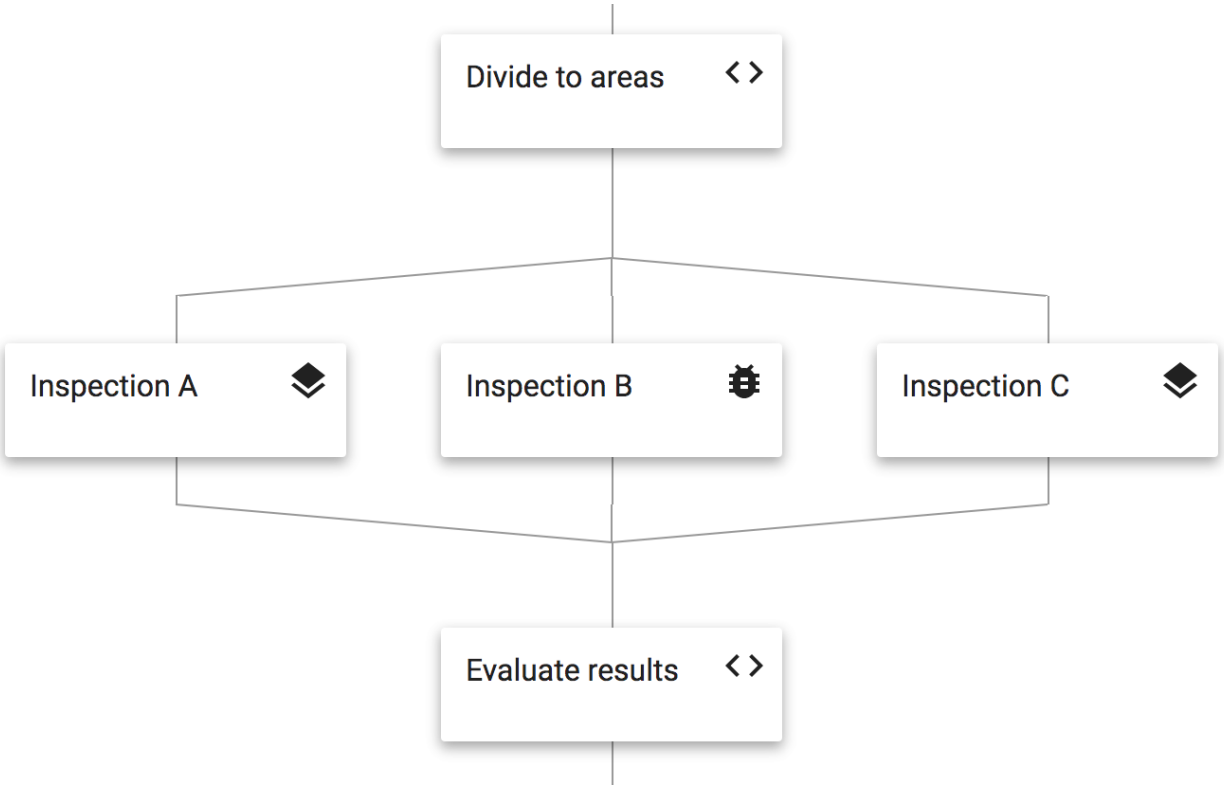
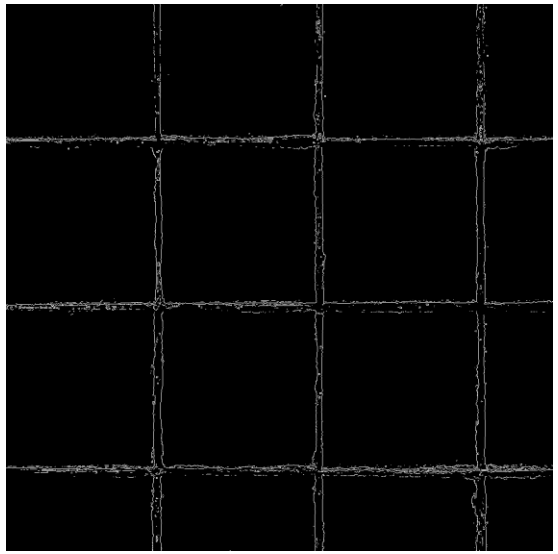
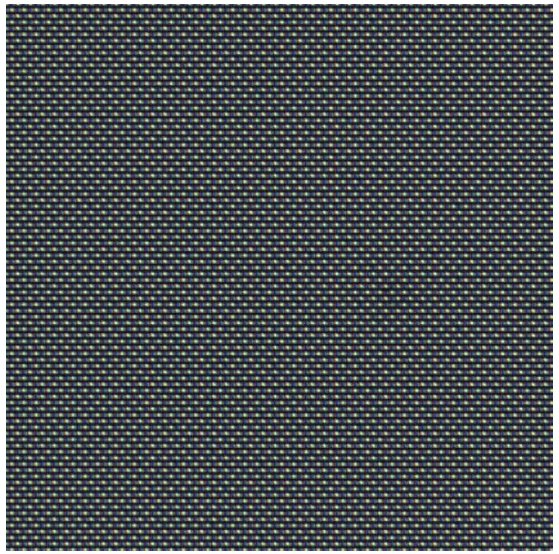

Inspection A
Inspection B
Inspection C


Divide to areas
Inspection A
Inspection B
Inspection C
Evaluate results

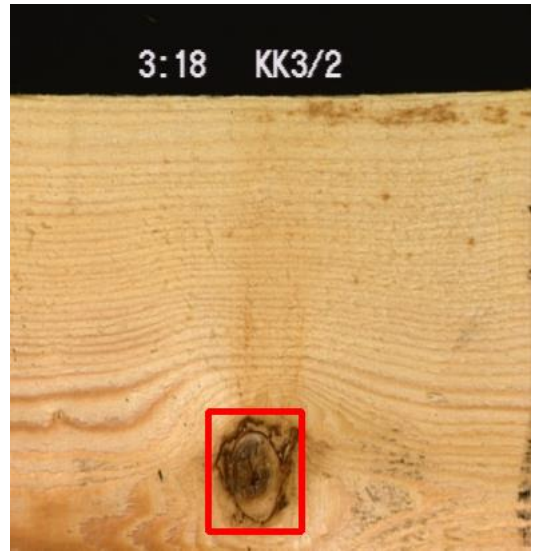
```
context['image'] =
    cv2.Canny(context["image"], 120, 130)
```

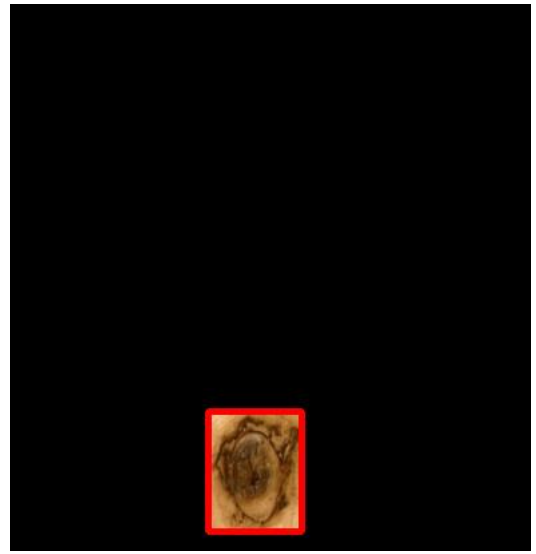


```
context['image'] =
    cv2.blur(context['image'], (20,20))
```

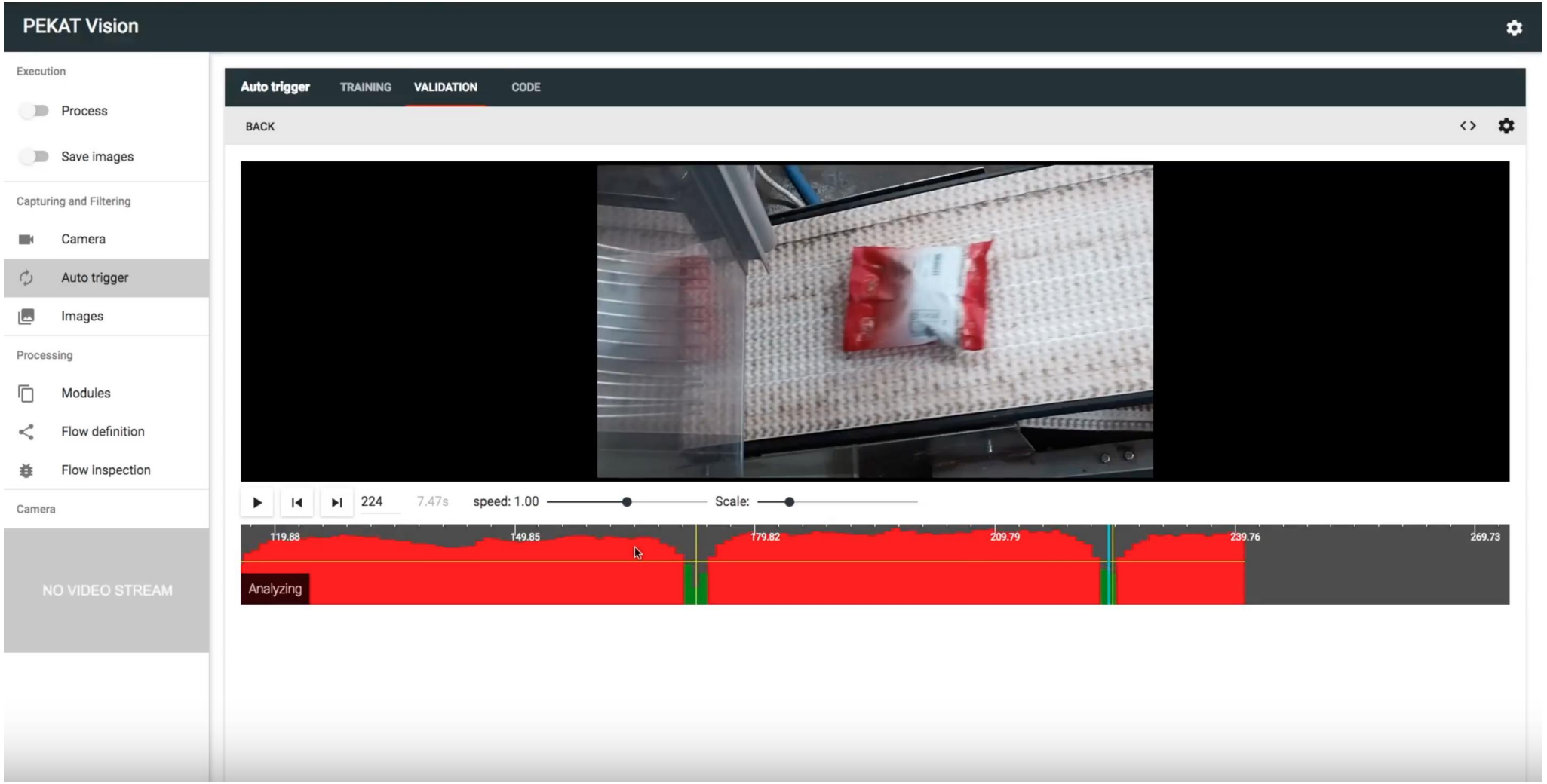


… short numpy code…





One day PoC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Flow definition
Flow inspection
Camera
NO VIDEO STREAM
Auto trigger
TRAINING
VALIDATION
CODE
BACK
224
7.47s
speed: 1.00
Scale:
119.88
149.85
179.82
209.79
239.76
269.73
Analyzing

PEKAT Vision

Petr

Not Secure | 192.168.0.100:8080/images/

PEKAT Vision

Execution

Process

Save images

Capturing and Filtering

Camera

Auto trigger

Images

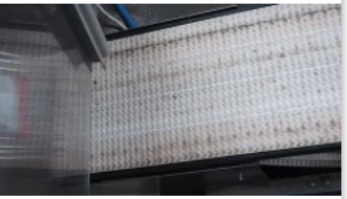
Processing

Modules

Flow definition

Flow inspection

Camera



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petr.smid@pekatvision.com