Portfolio Week 5

COS40007 - Artificial Intelligence for Engineering
Studio 1-1 (12:30-2:30)

Hanh Nguyen Nguyen
103532674

I. Test outcome for 20 CNN models:

```
Test accuracy : 0.89999997761581421
[0 0 0 0 0 0 0 0 0 1 1 1 0 1 1 1 1 0 1]
['NO RUST', 'RUST']
```

Figure 1. CNN model result screenshot

Table 1. Summary CNN model test outcome

Image (from Corrosion Test Set)	True class	Predicted class (CNN)
009_l2h04qqt.mcp	0	0
079_nitchhkn.dpb	0	0
106_gwxpfsmj.bni	0	0
150_0rbwnnqs.gjl	0	0
CA-560759L-6232016-FLD-DC-VIC-005-G55-002_1xnqqeul.lmn	0	0
FL-480052-FLD-DC-VI-011-013-2223_eiqnvzdw.3d5	0	0
IMG_2664_czujaojy.no0	0	0
OR-07562A_21	0	0
RIMG0786_2jumrwjm.lgh	0	0
RIMG1450_ra0snep1.uoh	0	0
007_1vtpg0jx.nkh	1	1
0029_oxpqvrd5.5qj	1	1
090_yvofauha.yjp	1	1
191_kitq1rsu.i1o	1	0
IMG_0087_yypp40il.ey0	1	1
OR-07562A-08222016-FLS-DC-VIC-004-GA16-1_254ypwz2.jxh	1	1
OR-07562A-08222016-FLS-DC-VIC-004-GB19-1_4szuzhci.fw3	1	1
RIMG1424_l0huv2d1.3qf	1	1
RIMG2157_e00q5qce.wtk	1	0
RIMG2668_znweaiop.ubr	1	1

CNN test accuracy: 89.99%

II. Test outcome for ResNet50

Figure 2. ResNet50 model result screenshot

Table 2. Summary ResNet50 model test outcome

Image (from Corrosion Test Set)	True class	Predicted class (CNN)
009_l2h04qqt.mcp	0	0
079_nitchhkn.dpb	0	1
106_gwxpfsmj.bni	0	1
150_0rbwnnqs.gjl	0	0
CA-560759L-6232016-FLD-DC-VIC-005-G55-002_1xnqqeul.lmn	0	1
FL-480052-FLD-DC-VI-011-013-2223_eiqnvzdw.3d5	0	0
IMG_2664_czujaojy.no0	0	0
OR-07562A_21	0	0
RIMG0786_2jumrwjm.lgh	0	0
RIMG1450_ra0snep1.uoh	0	0
007_1vtpg0jx.nkh	1	1
0029_oxpqvrd5.5qj	1	1
090_yvofauha.yjp	1	1
191_kitq1rsu.i1o	1	0
IMG_0087_yypp40il.ey0	1	1
OR-07562A-08222016-FLS-DC-VIC-004-GA16-1_254ypwz2.jxh	1	1
OR-07562A-08222016-FLS-DC-VIC-004-GB19-1_4szuzhci.fw3	1	1
RIMG1424_l0huv2d1.3qf	1	1
RIMG2157_e00q5qce.wtk	1	0
RIMG2668_znweaiop.ubr	1	1

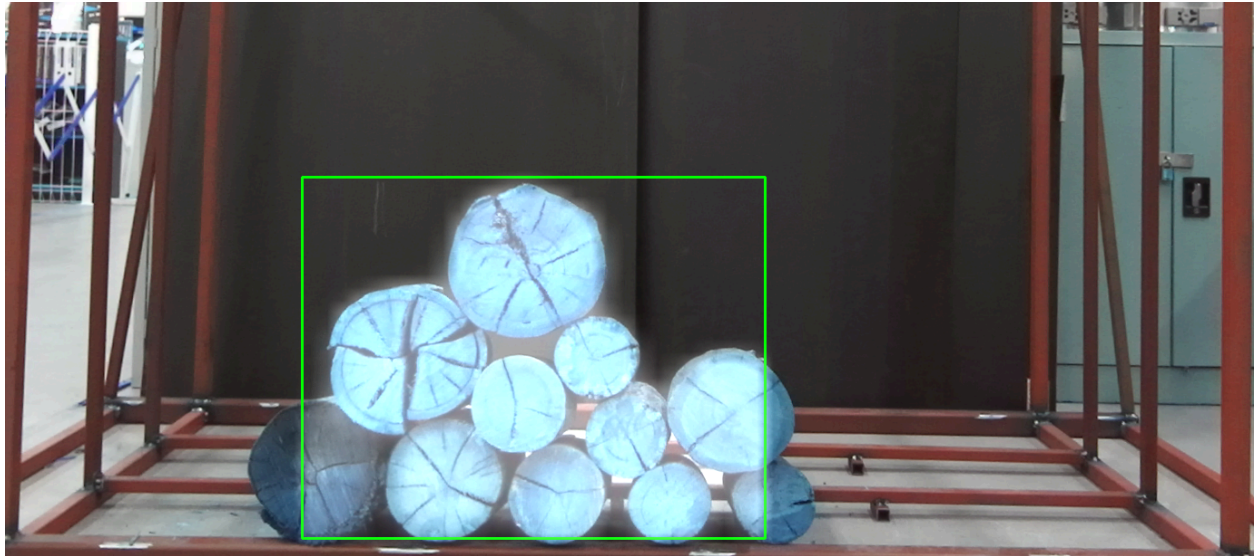**ResNet50 test accuracy:** 80.00%

III. Mask CNN model

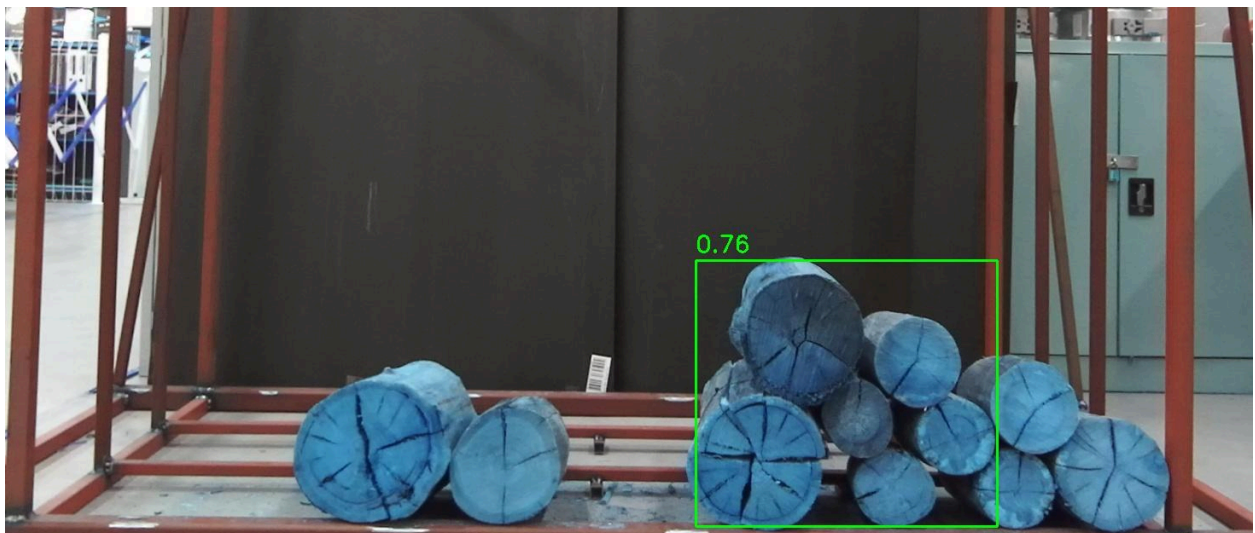*Figure 3. Screenshot of outcome for Mask RCNN model*

Figure 4. Annotated image with confidence score

Output images

IV. Labelled image with log and detected_log tags

Figure 5. Screenshot of the outcome of the labelled image that contains log and detected_log

Output images

Links:

Note: The correct sequence of the test set for the Corrosion task is Last Modified.

- Portfolio W5 big folder
- CNN model
- ResNet50 model

- MaskCNN
- Convert Train Set
- Convert Test Set