



INTP22-ML-4

STEEL DEFECT DETECTION USING COMPUTER VISION

PHASE-1 PLOTS & IMAGES

Submitted by:

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❖ Checking the Content of given CSV file

```
In [3]: train_df = pd.read_csv("train.csv")
train_df.head(10)
```

Out[3]:

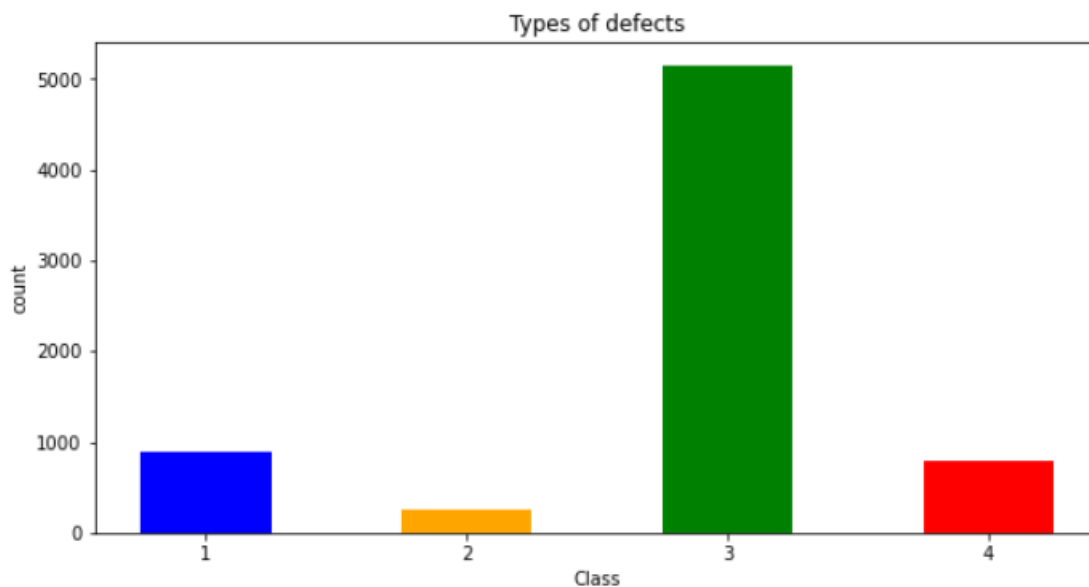
	ImageId	ClassId	EncodedPixels
0	0002cc93b.jpg	1	29102 12 29346 24 29602 24 29858 24 30114 24 3...
1	0007a71bf.jpg	3	18661 28 18863 82 19091 110 19347 110 19603 11...
2	000a4bcdd.jpg	1	37607 3 37858 8 38108 14 38359 20 38610 25 388...
3	000f6bf48.jpg	4	131973 1 132228 4 132483 6 132738 8 132993 11 ...
4	0014fce06.jpg	3	229501 11 229741 33 229981 55 230221 77 230468...
5	0025bde0c.jpg	3	8458 14 8707 35 8963 48 9219 71 9475 88 9731 8...
6	0025bde0c.jpg	4	315139 8 315395 15 315651 16 315906 17 316162 ...
7	002af848d.jpg	4	290800 6 291055 13 291311 15 291566 18 291822 ...
8	002fc4e19.jpg	1	146021 3 146275 10 146529 40 146783 46 147038 ...
9	002fc4e19.jpg	2	145658 7 145901 20 146144 33 146386 47 146629 ...

```
In [4]: train_df.tail()
```

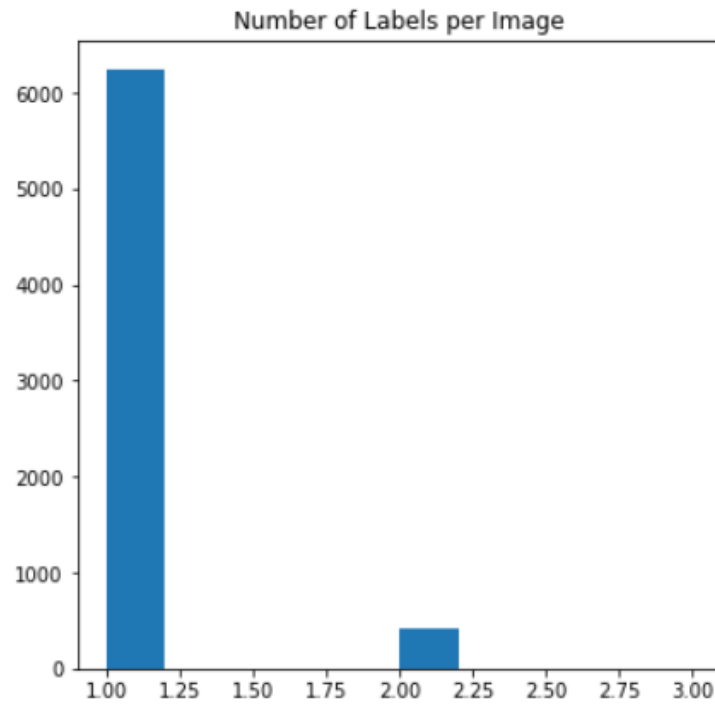
Out[4]:

	ImageId	ClassId	EncodedPixels
7090	ffc72ecf.jpg	3	121911 34 122167 101 122422 169 122678 203 122...
7091	fff02e9c5.jpg	3	207523 3 207777 9 208030 15 208283 22 208537 2...
7092	fffe98443.jpg	3	105929 5 106177 14 106424 24 106672 33 106923 ...
7093	ffff4eaa8.jpg	3	16899 7 17155 20 17411 34 17667 47 17923 60 18...
7094	fffd67df.jpg	3	30931 43 31103 127 31275 211 31489 253 31745 2...

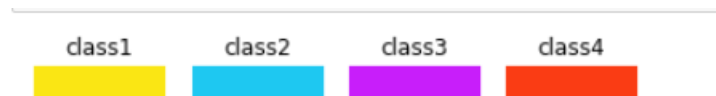
❖ Plot to check Count of Each defect class type



❖ Plot to check how many images have multiple class defects



❖ Color Palette to visualize images

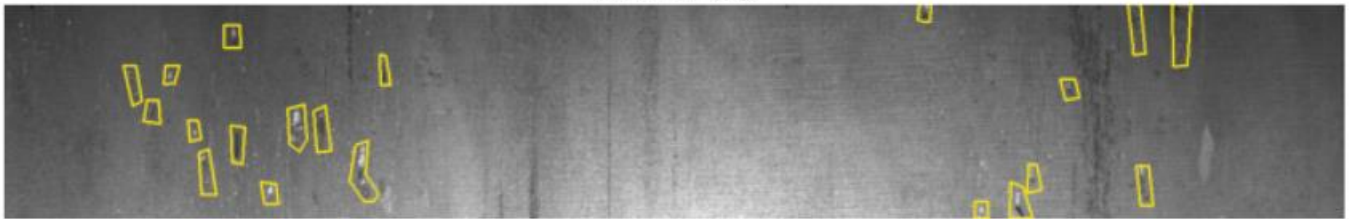


❖ Visualizing Defect class 1

fed07ccf3.jpg



ff001adfe.jpg

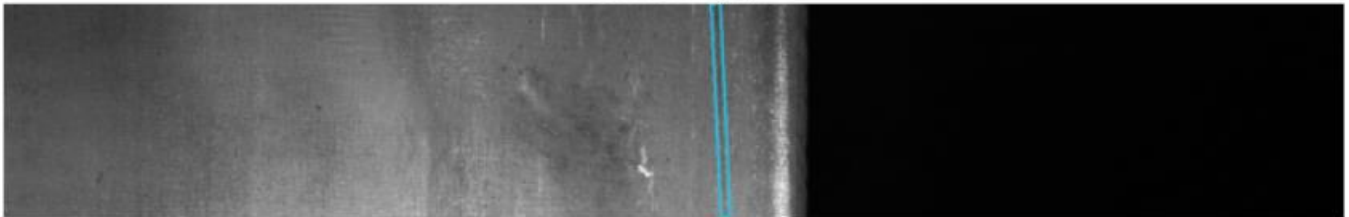


ff6e35e0a.jpg



❖ Visualizing defect Class 2

fcd374576.jpg



fe689cf0a.jpg

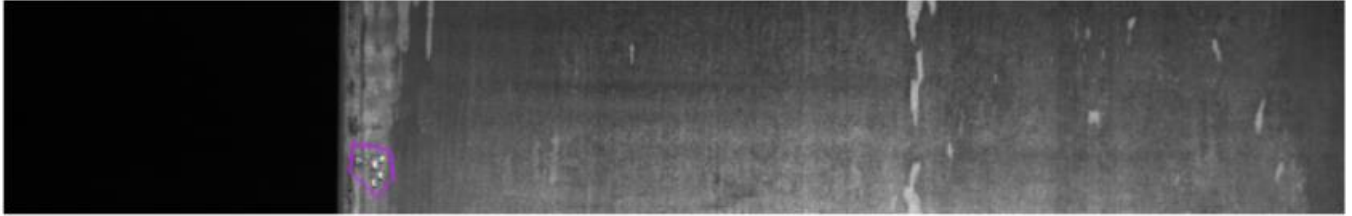


ff6e35e0a.jpg



❖ Visualizing Defect class 3

ffe98443.jpg



ffff4eaa8.jpg

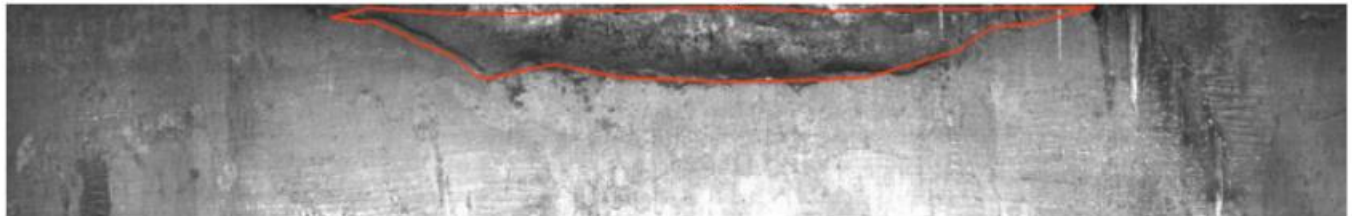


fffd67df.jpg

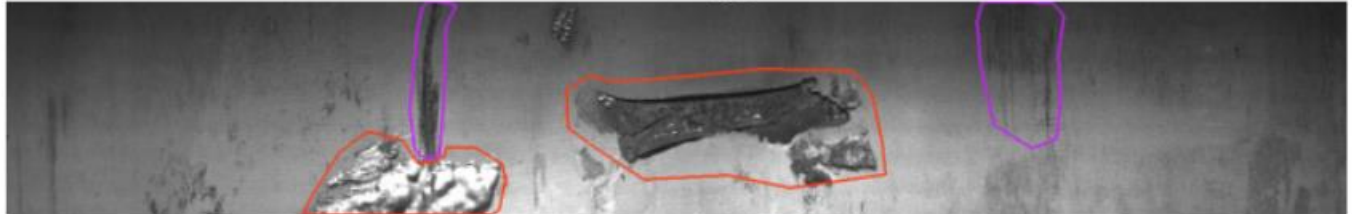


❖ Visualizing Defect class 4

feec56162.jpg



ff6bfada2.jpg

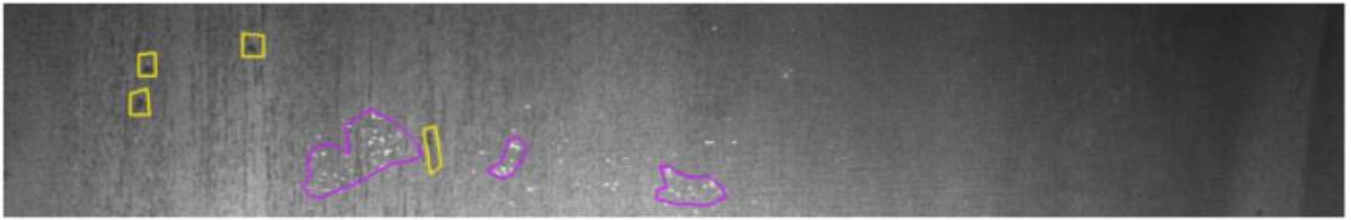


ff9d46e95.jpg

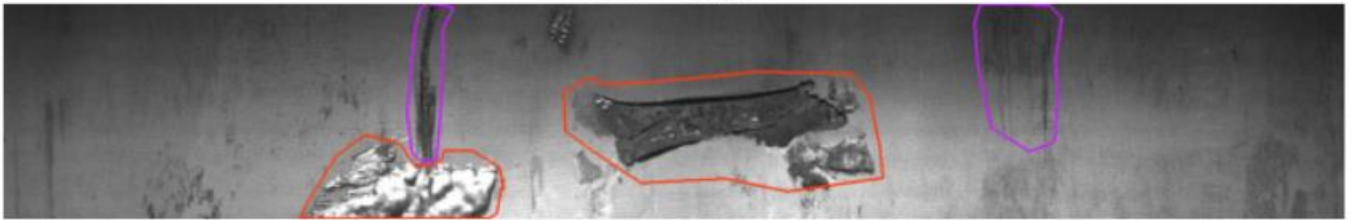


❖ Visualizing multi class defect

fe2234ba6.jpg



ff6bfada2.jpg

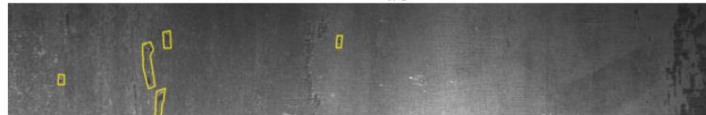


ff6e35e0a.jpg



❖ Testing

0002cc93b.jpg



0002cc93b.jpg



defect 1



defect 2



defect 3



defect 4

