

Extract specific PCB colors in R for defects classification

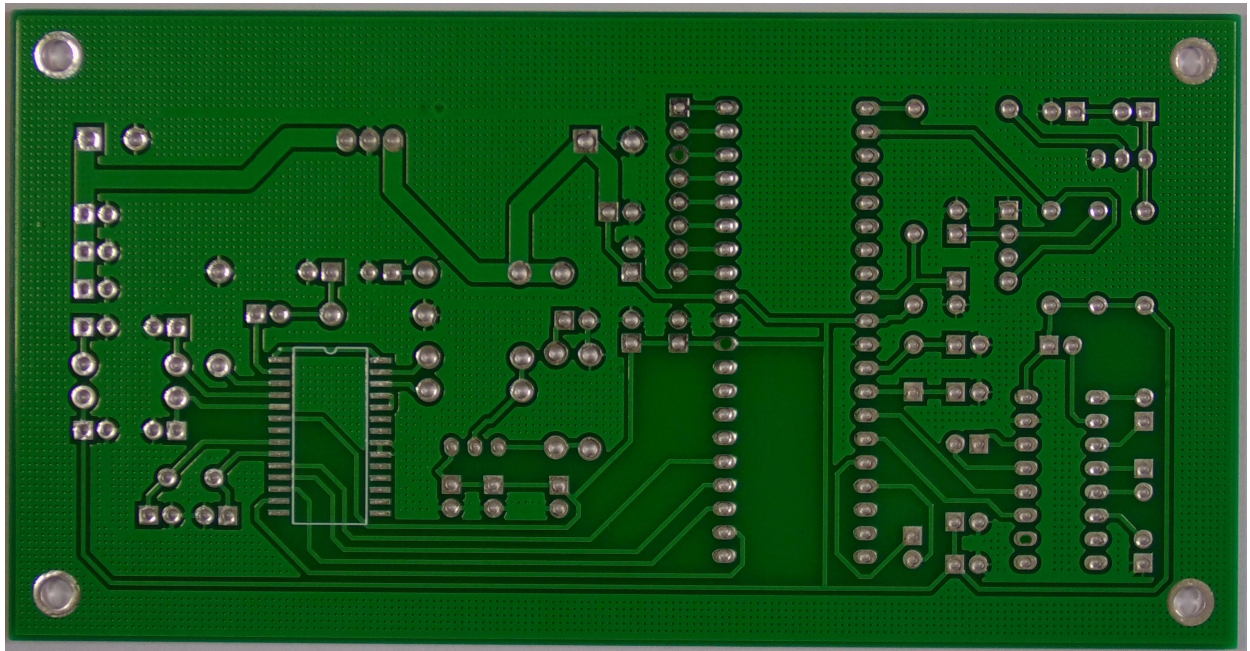
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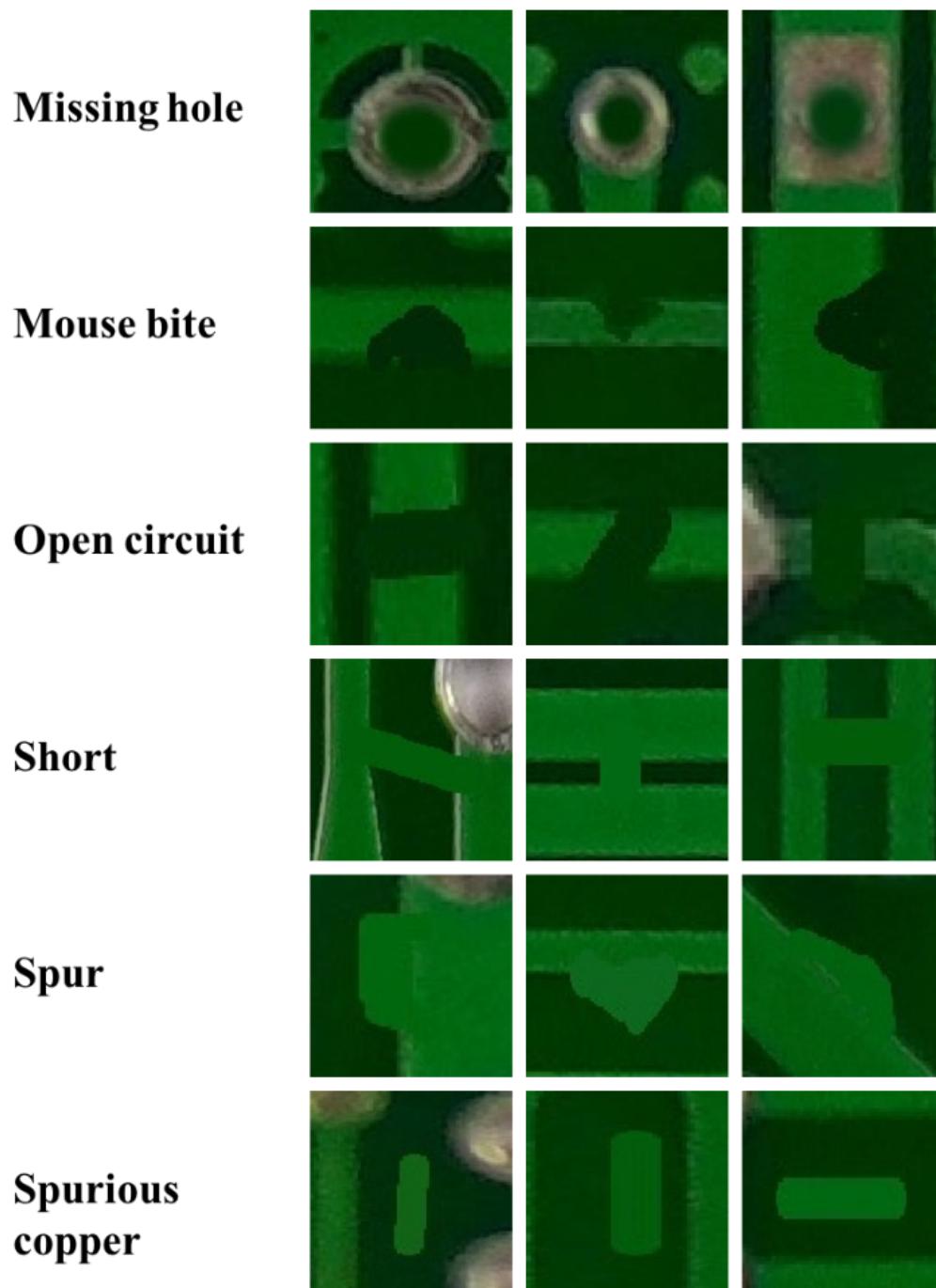
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Assume we have the following picture that contains a PCB defect (called missing hole defect) :



The defects list i need to identify in my project are :



For this purpose , i need to extract colors related to defects categories.

I know that using R , we can do :

```
library(colorfindr)
img_path="C:/Users/Rayne_2/Desktop/Data/PCB1/PCB/images/Mouse_bite/01_mouse_bite_04.jpg"
colorfindr::get_colors(img_path,top_n=20)
# A tibble: 20 × 3
  col_hex col_freq col_share
  <chr>    <int>    <dbl>
1 #005B0C   31106   0.00646
2 #005B0E   29117   0.00605
3 #01590B   27768   0.00577
4 #005A0B   24135   0.00502
5 #015C0D   23771   0.00494
6 #00580A   22397   0.00465
```

7	#005B0B	21529	0.00447
8	#00560F	21476	0.00446
9	#005A0D	21324	0.00443
10	#025A0C	21191	0.00440
11	#01590D	21026	0.00437
12	#005709	20009	0.00416
13	#00580E	19063	0.00396
14	#005909	18666	0.00388
15	#015C0F	18450	0.00383
16	#025A0E	17979	0.00374
17	#015710	16621	0.00345
18	#01590F	16619	0.00345
19	#00580C	16546	0.00344
20	#005A0A	15614	0.00324

From the defects type picture , i see there are 3 colors that allows to distinct those defects.

I need to identify those 3 and extract from tibble dataset.

r

image-processing

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asked May 21 at 14:40

T

Tou Mou

1,260515

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sorry but I am absolutely positive that "extracting *colors*" can't solve the task. it's *all* green and silver. you'll need a neural network to properly detect those things, given the likely variation in appearance of PCBs and the usual features on PCBs. and you'll need better training data because the network will just learn to look for the obvious photo editing artefacts. your "open/short" examples are nothing but special cases of mouse bite and spur. the freestanding bits of copper (incomplete etching) also usually don't look like lines. – Christoph Rackwitz May 21 at 14:43

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@ChristophRackwitz , i somewhat agree. However , i see colorfinder is able to detect different levels of green and gray. I just need to select those rows where the amount is changing from training sample to another – Tou Mou May 21 at 14:54
- ▲

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@ChristophRackwitz : What kind of numerical features i can extract and that will works in this case ? – Tou Mou May 21 at 18:14

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