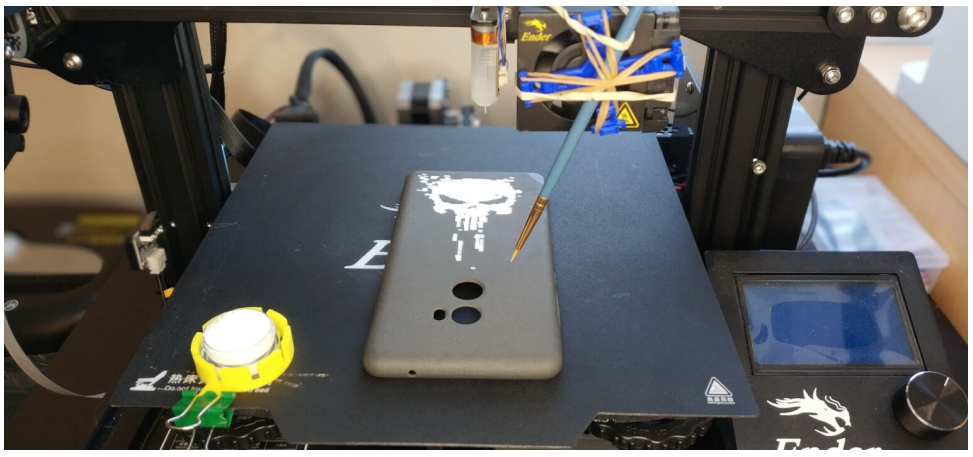
3D-printer Art paintbot

use your 3d printer to paint your phone case

by Alex | No Comments



I made a video how to use a 3d printer with the PaintCam (https://vialps.com/new-gui-and-upload-to-thingiverse/) to paint a phone case. I include the text of the video in this post so you can go back and forth and look at the screenshots more closely. I will also include all the files which are on Thingiverse (https://www.thingiverse.com/thing:4164851) also here.

how 2 paint a phone case with a 3d printer [ender 3 pro]

Since we all have a bit more time on our hands right now than usual I decided to make a little video how to use the PaintCam with a 3d printer. In my case I was using my Ender 3 pro.

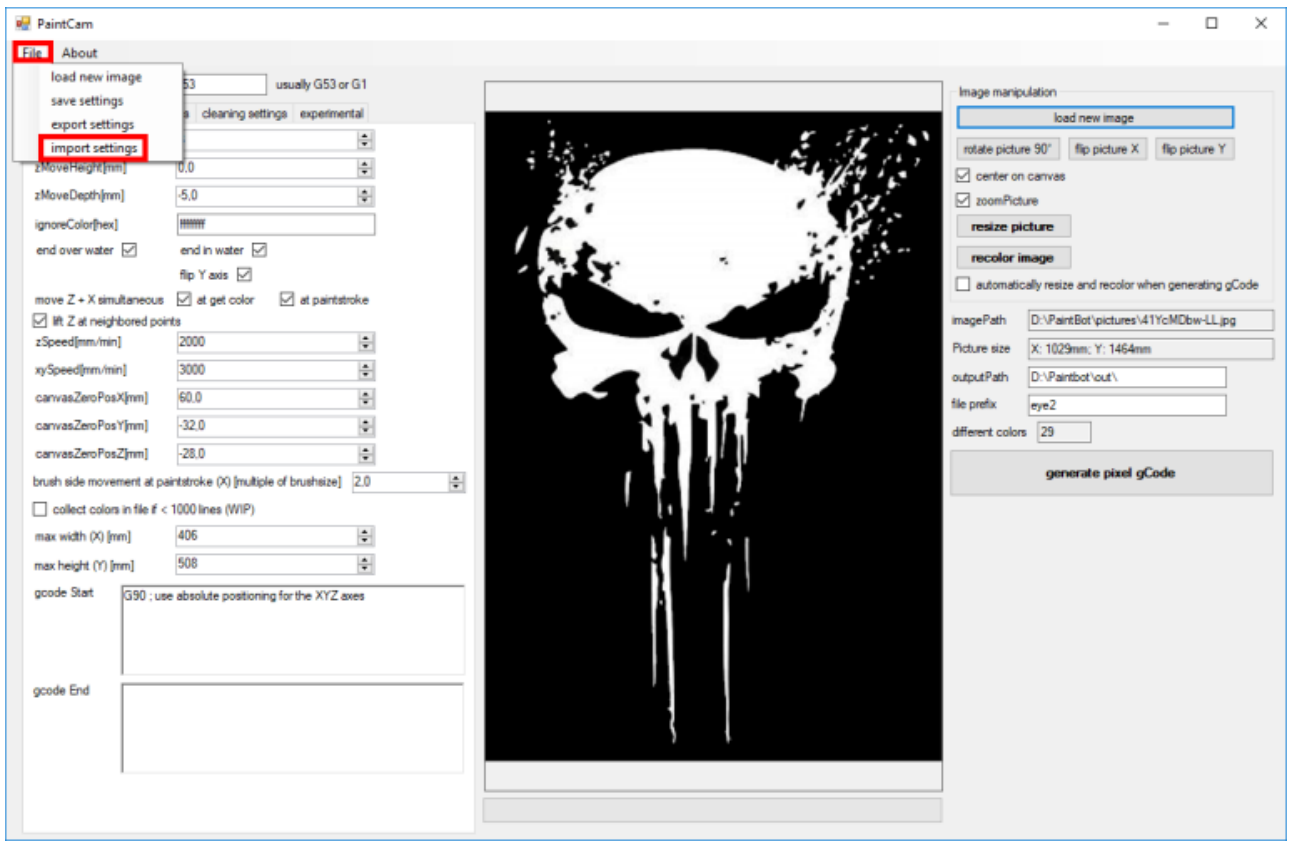
I wanted to try something different than canvas or a piece of paper and so I came up with the idea to use my phone case for it. In this video I will go over all the steps how to setup the program and get the needed g-code file as well as how to mount everything to your printer.

First of all I strapped the brush to the hotend with some rubber bands and that little mount which keeps it a bit more stable. It has several hooks where you can attach rubber bands and also has some mounting holes if you want to mount it in a different way. How you mount the brush is not too important but I suggest having it a bit in an angle. This prevents the brush from getting messed up quickly.

Next tape some piece of paper to your buildplate to protect it. I used one of those paper clamps to fix the color pot in place and then taped my phone case to the paper so it won't move around. I had to re-home everything because I moved the buildplate manually.

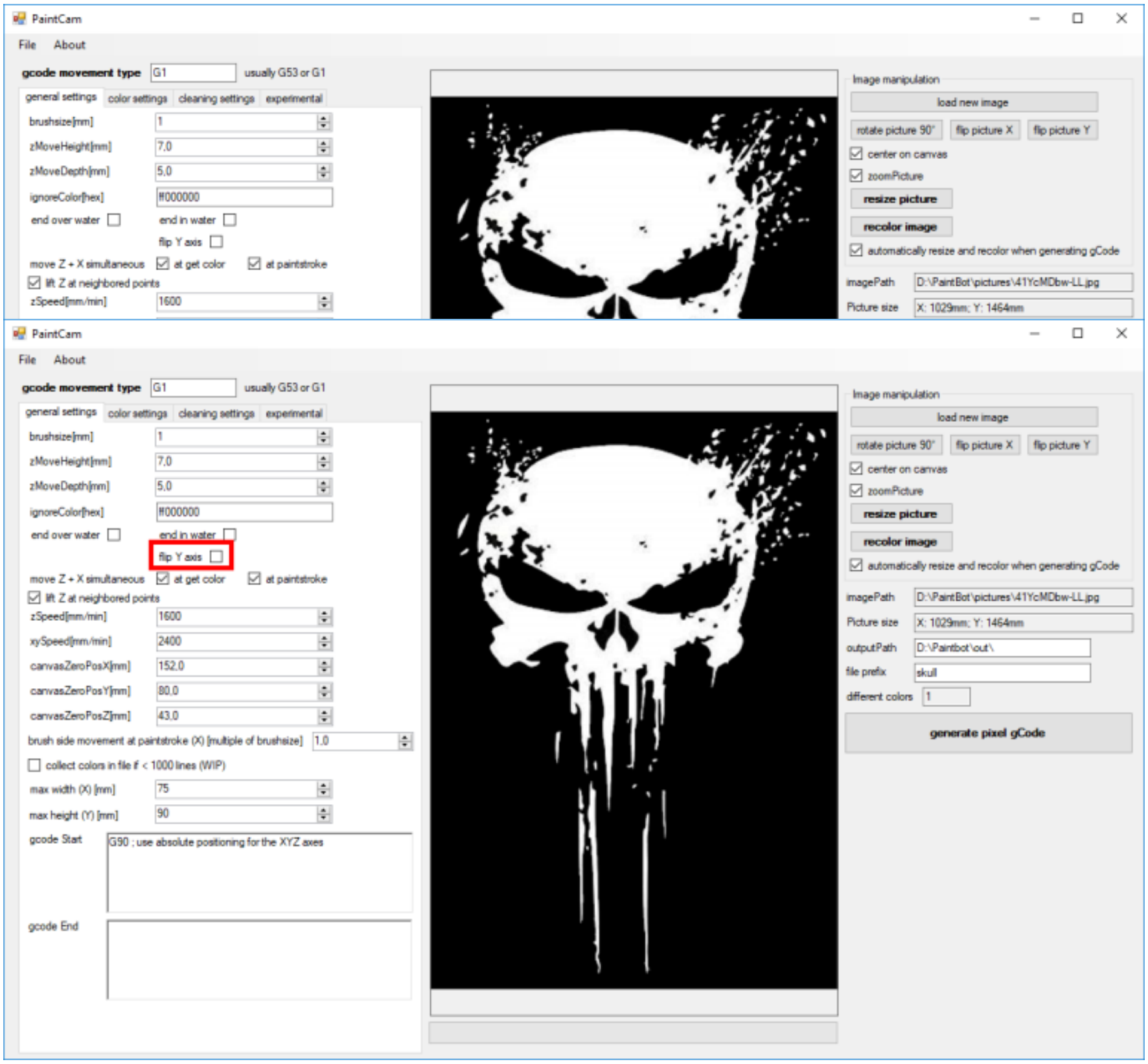
Then jog the hotend over the color and try to almost touch it like this. This gives you the position you have to put in for the color. Most printers have a display where you can get the x, y and z values. Note them down for the color and jog the brush tip over to the corner of your phone case. Same thing here. Note down x, y and z as your canvas zero position. The phone case will be our canvas.

Open up the PaintCam which you can download from Thingiverse, I will link it in the description below and start by importing the settings file. Do this by hitting File -> Import settings and open up the file it came with.



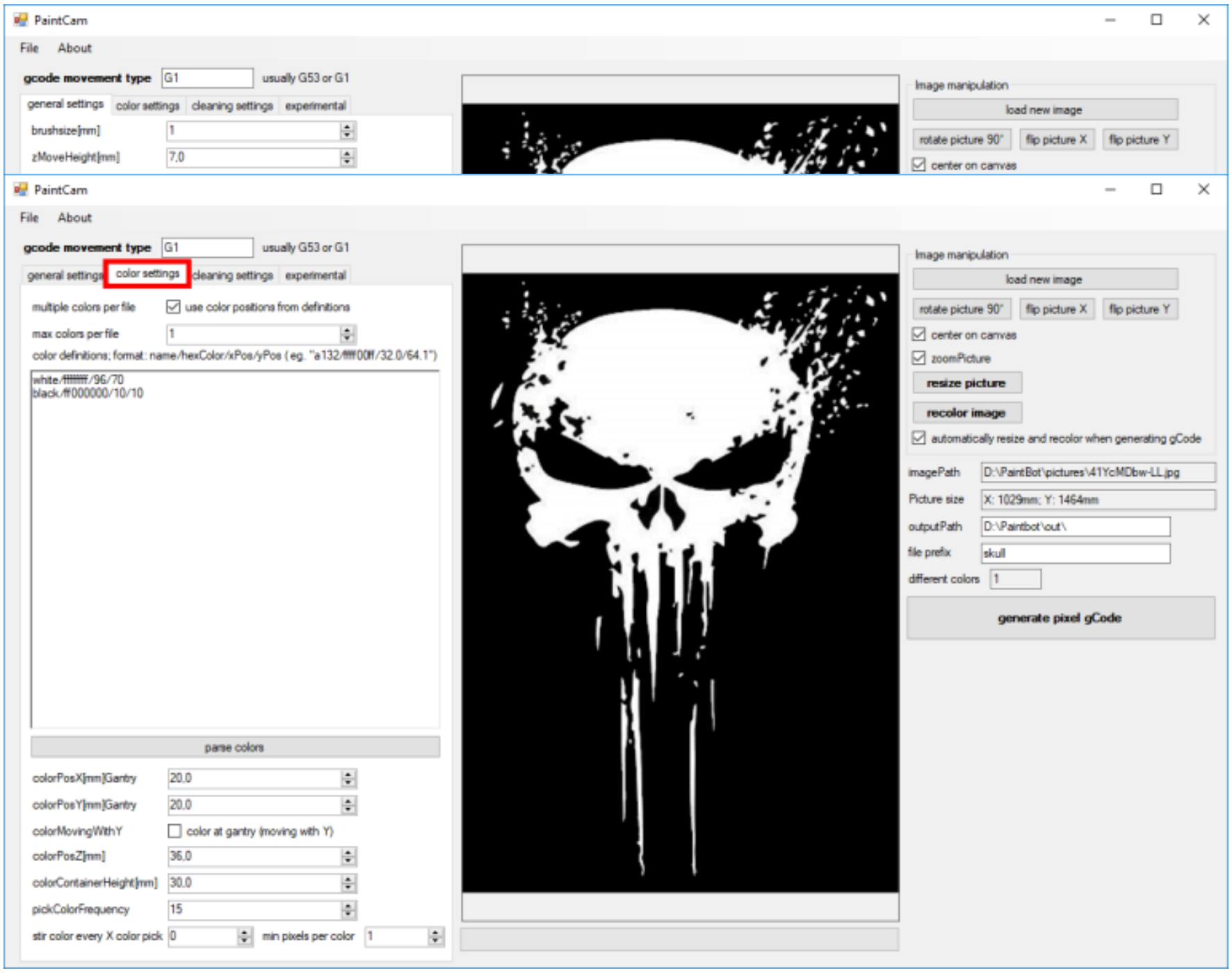
import the settings

In my case the values for the canvas zero position were x152, y80 and z36. Enter them in those fields. You also want to flip the y axis which I forgot to do here. That's why that skull is upside down on my phone case. Also adjust the max width and max height settings to the size of your phone case.
In general it might be a good idea to try it on a piece of paper first if you don't want to try it directly on your case in the first attempt but that's up to you.



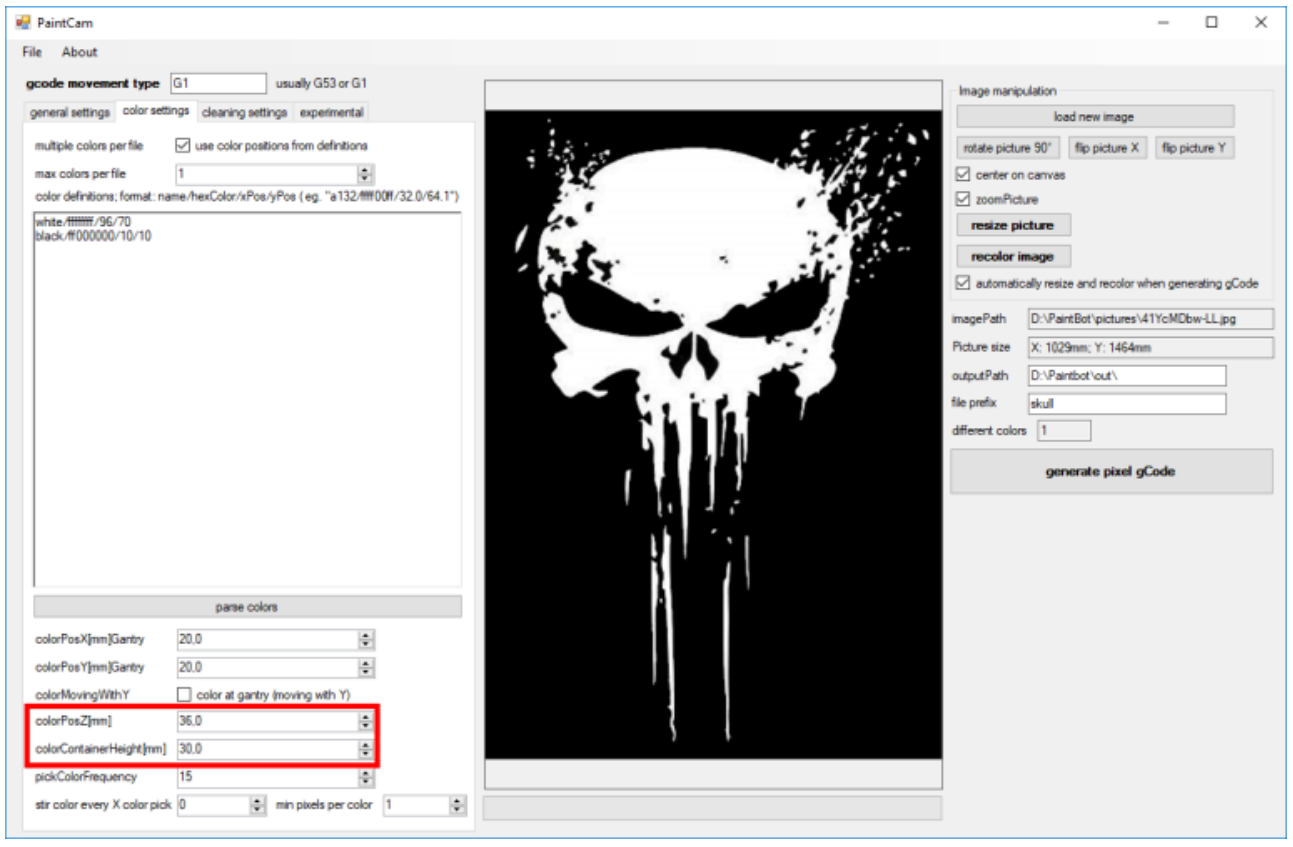
canvas (phone case) zero

For the ignorecolor value I used the hex value for black ff000000. If you have a white case it would be ffffffff. This value is the one which will be ignored making the g-code and is basically your background in hex color format. You can figure out a hex color value in paint or any other painting software or for example on https://www.color-hex.com/ .



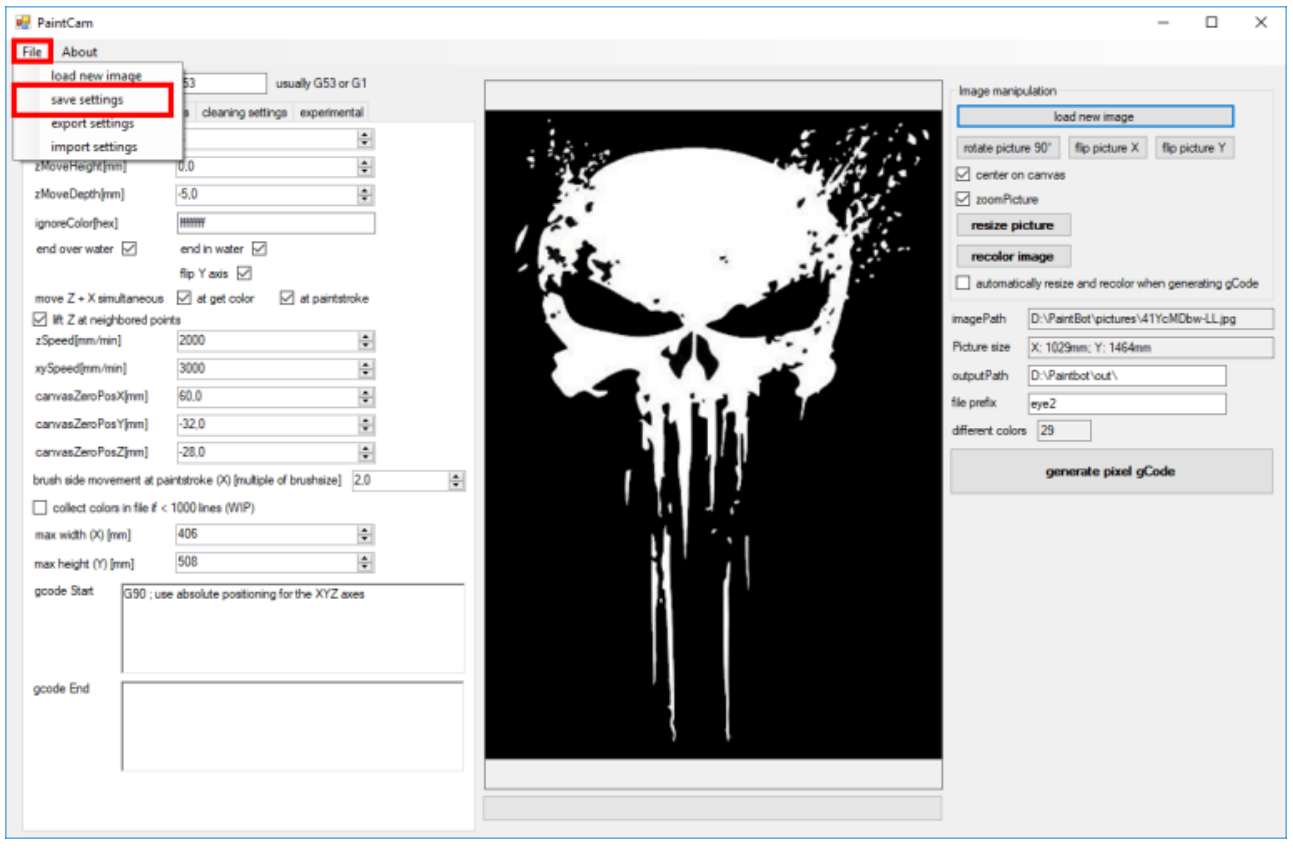
color settings

Next go to the color settings and enter the x and y values for the color position. The comment above the box explains the format. I only used white and black here were black is the background and is ignored. So it will only output a file for white. You also have to enter the z height in the colorPosZ field. In case you have a really high color container you should increase the value for the colorContainerHeight.



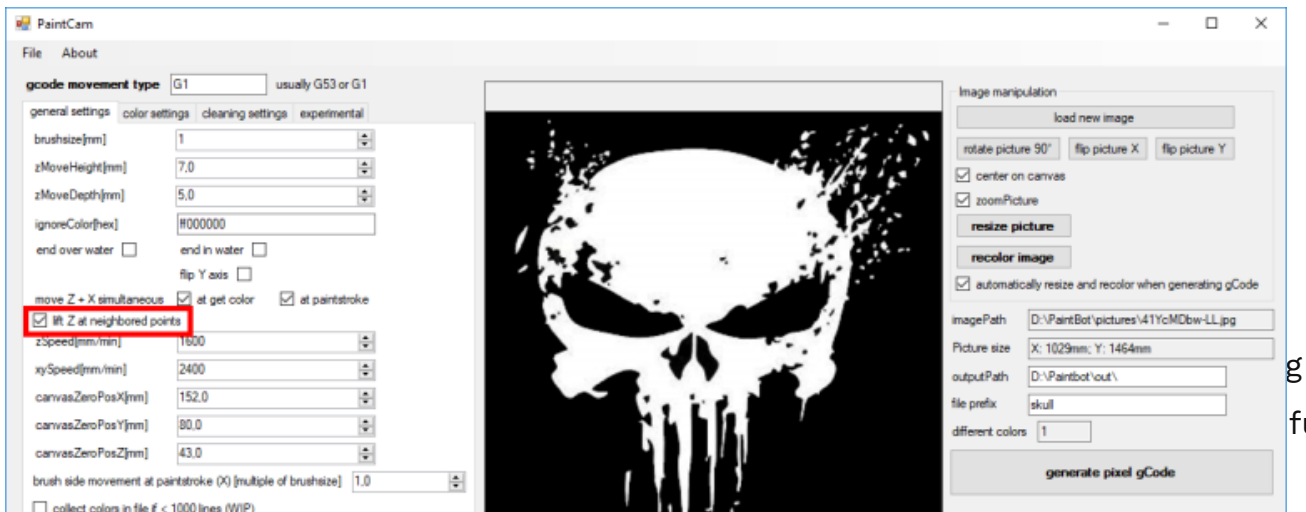
color height

After having everything set up hit File -> save settings. This will save all the adjustments you just made and in case you have to fine tune for example a height value you don’t have to redo everything.



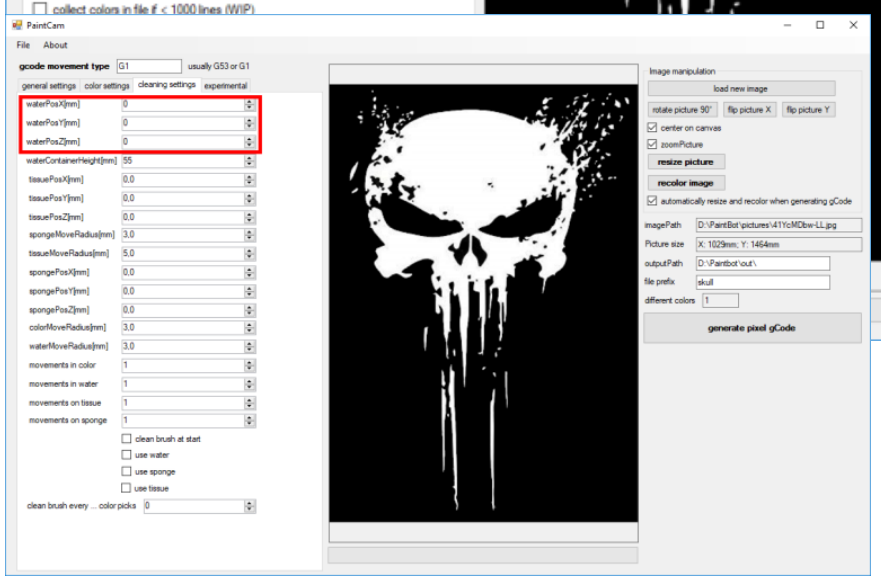
save settings

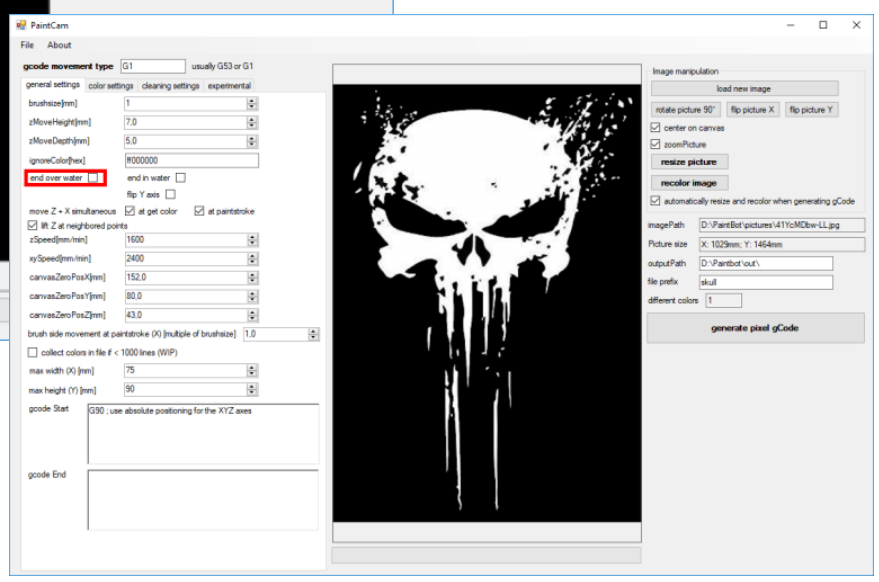
I also want to mention that it is possible to make brush strokes instead of lifting the brush for every point. To do so just uncheck the “lift brush at neighbored points” option. This is optional and I wanted only points in this test.



g the end over water option

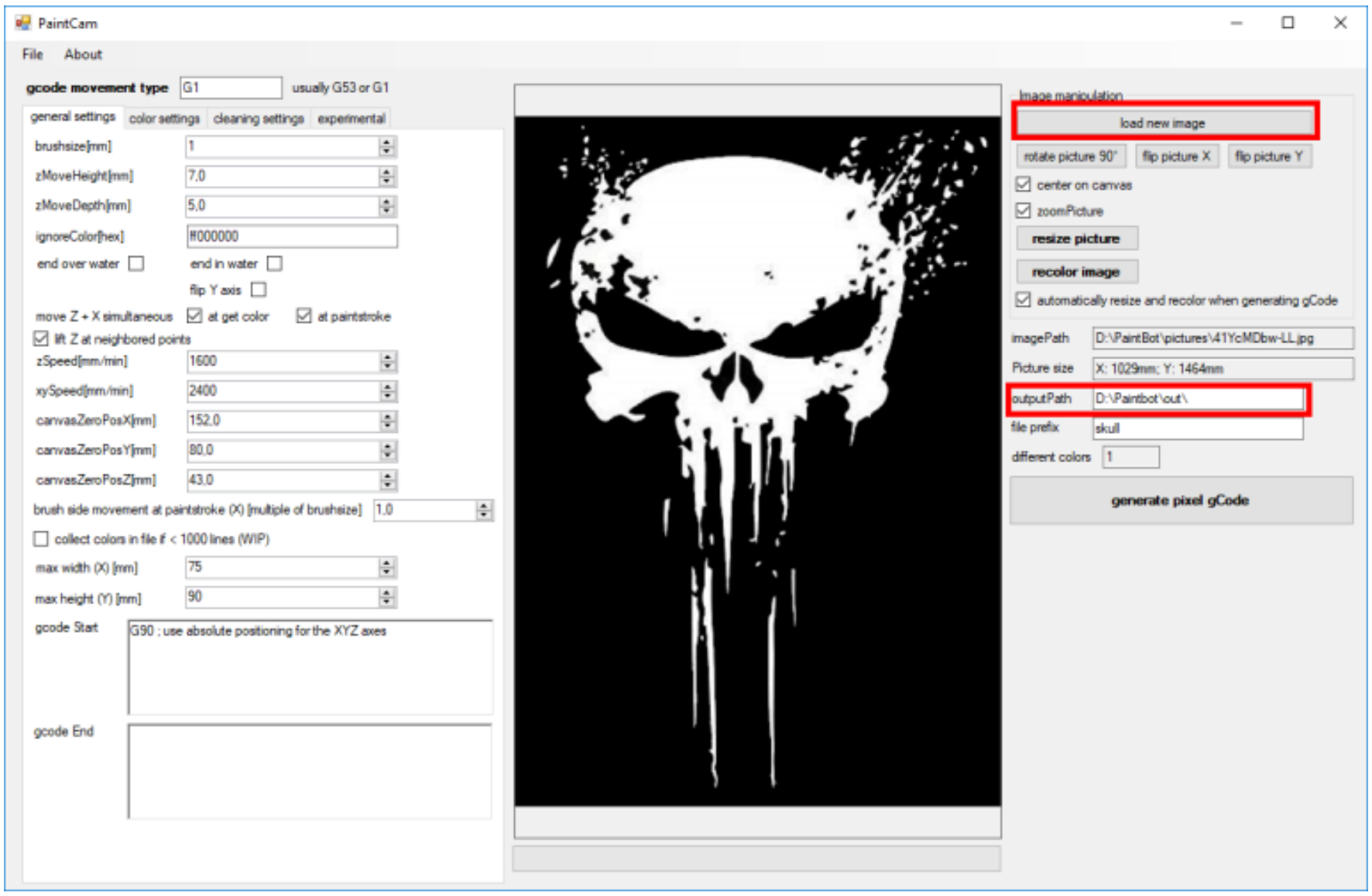
full detail here.

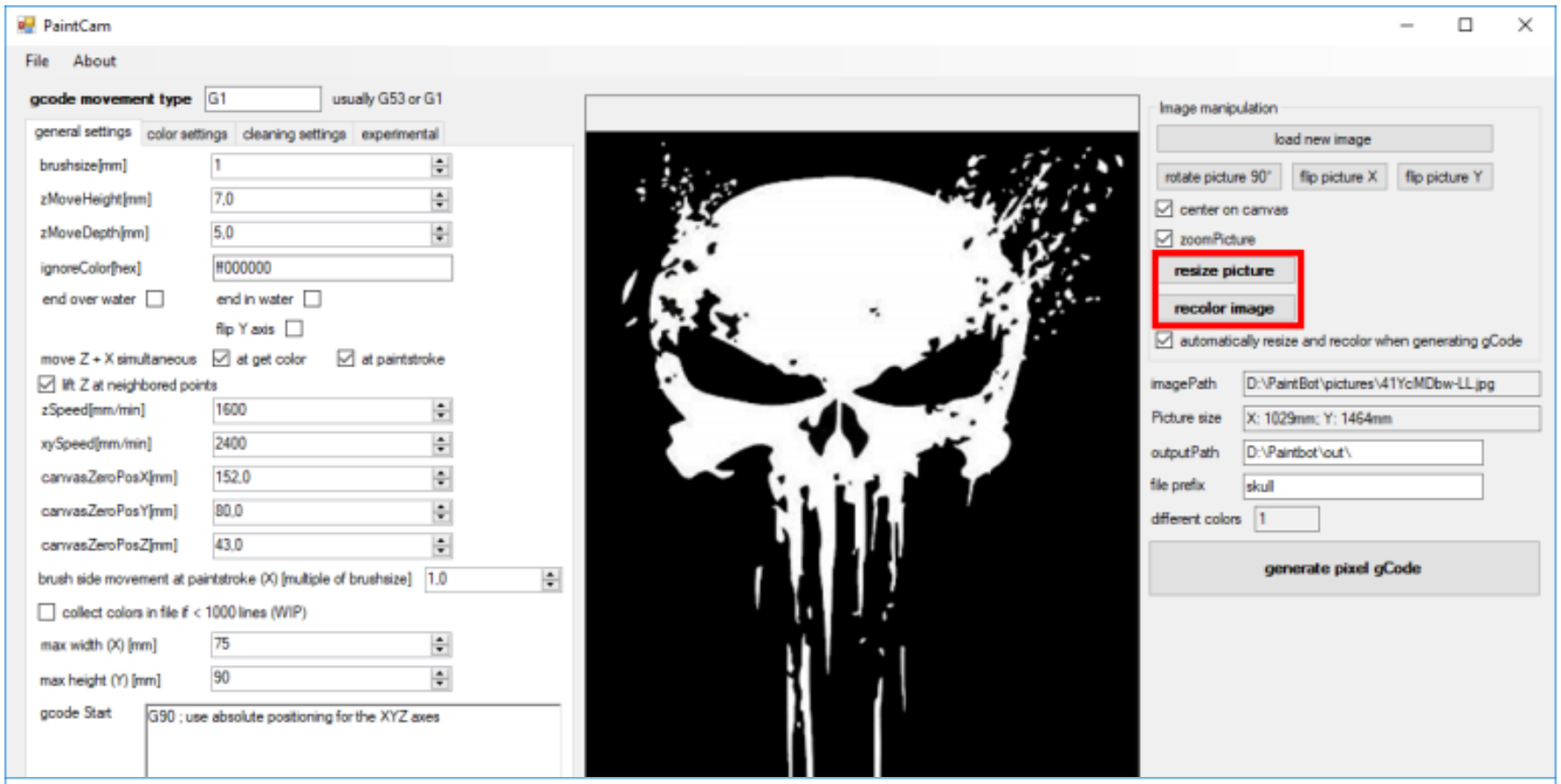


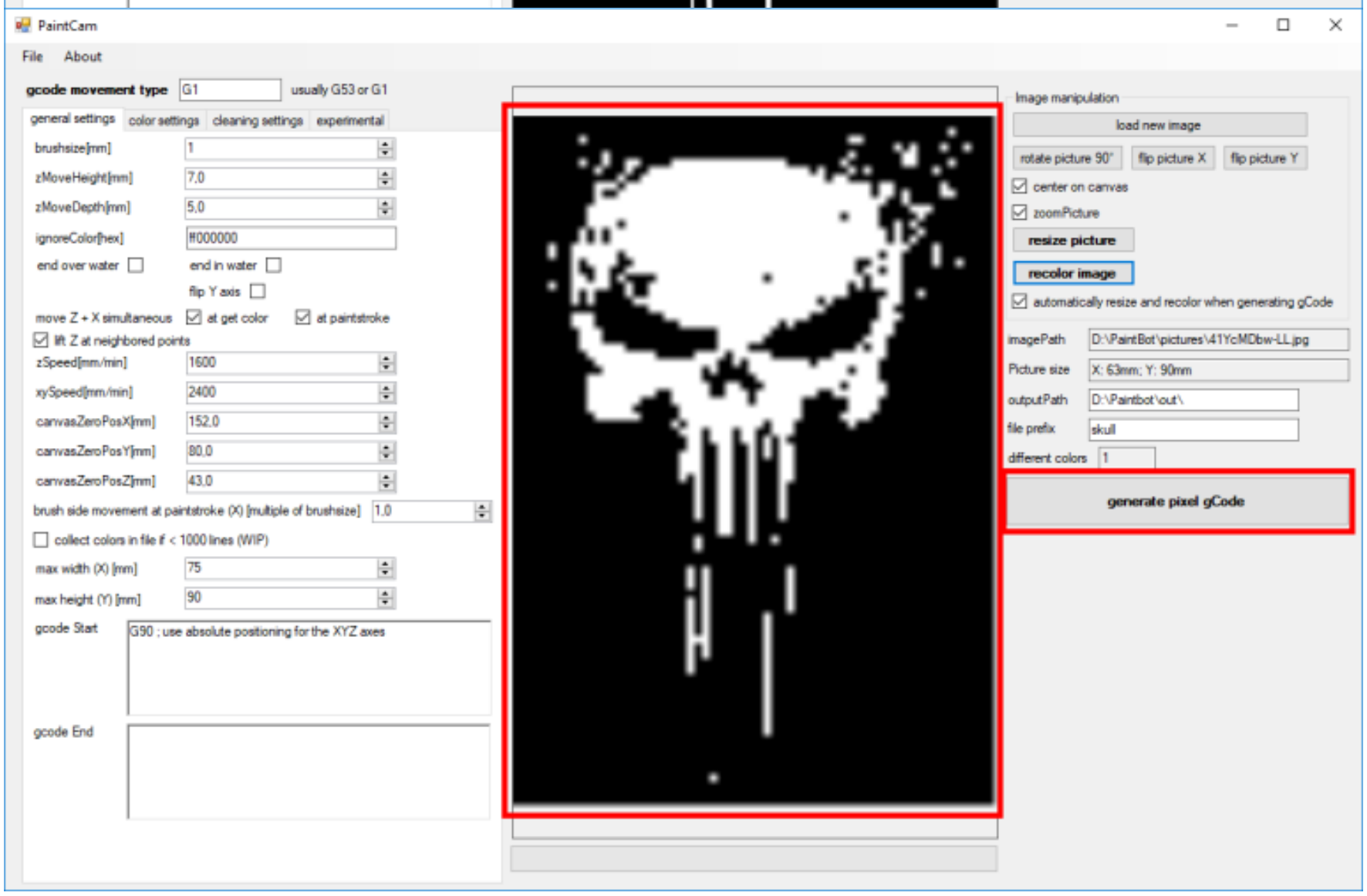


water position

With all the settings done load an image with the load image button and specify an output path. After that save your settings again to also have those values in there the next time and hit resize picture. This will scale the picture to the right size. Hit recolor image which will transform the picture to the colors you put into the colors field. You will also see a preview of the result now. Hit the generate pixel gCode button.







generating the g-code

After a few seconds you should get a confirmation that the process is done and you should have the gCode files in the output folder. Upload those to your printer and start printing. I will also include the g-code file I used for this skull in the zip file on Thingiverse so you can try it on your printer and see what it’s doing exactly.

I recommend to use a really small brush for painting a phone case, if you have around 1 mm or smaller. I used the smallest I had on hand which was a bit bigger than that but I think it turned out OK in the end. You can also use a sharpie instead of acrylic color if you don’t care about that painting style.

Once it is done just remove the color and the brush to clean it. I let the case sit there for a couple hours and let it dry. I think it really came out pretty good.

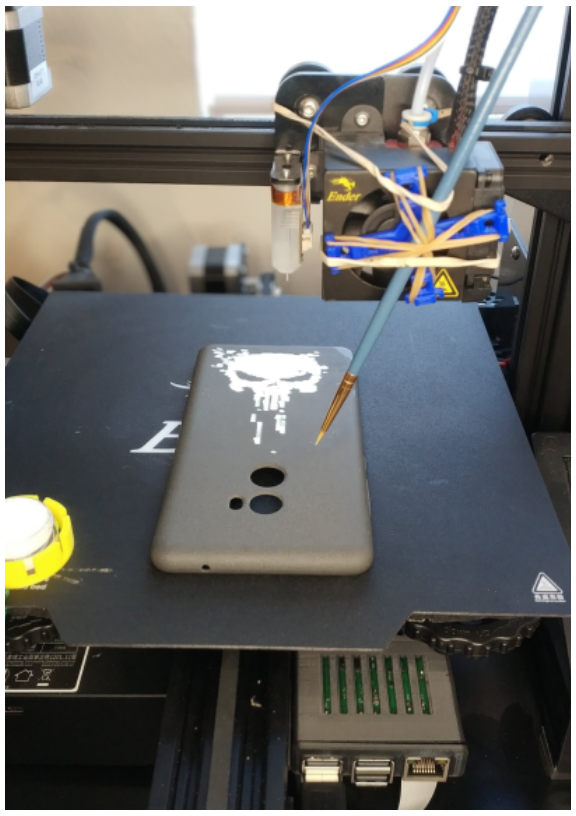
Fast forward to the next morning and the paint dried up and I can use my case again.

This was not the first time I tried it with that case. I also made a test on my PaintBot (https://vialps.com/paintbot-overview-video/) , see the link in the description. The good thing with that case is that it has a nice structure and the paint sticks really well. Those stains you see on that case actually lead to the idea of painting directly on it. I only had a pretty thick brush for the size of the case at the time but I tried it anyway.

I have to say that he phone case looks really lost on the big machine which brought me to the idea of just using the 3d printer for it.

I will display the timelapse of the first phone case attempt here somewhere.

One big advantage of acrylic color on a surface like that is that you can just peel it off if you don't like it anymore. I had it with that owl in my pocket for at least a week and it was on there pretty well but it was also not too hard to peel it off.


final result

If you give it a try please share the picture. I would be interested what you come up with. If you have any questions just let me know or put them in the comments.

Tags: 3D-printer, art, costumize smartphone case, ender, painting, smartphone, smartphone case

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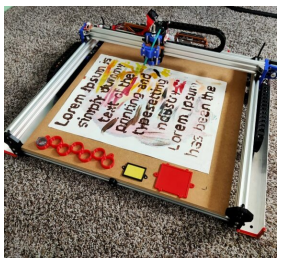

Paintbot mini and open source software

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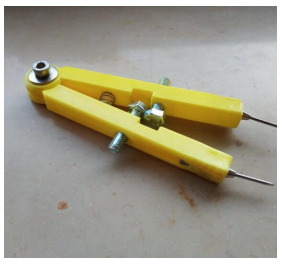

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