A screen shot of a computer program

AI-generated content may be incorrect.

* Data\_loader will be an object of the class IDL, which takes the “Data” folder as directory.
* Data\_iterator saves the result of the iter function (of IDL class) on the object data\_loader.
* The for loop will eventually run over all images, but essentially it outputs the colored ver, grayscale ver and the name of the file that we’re currently looking at (img3)
* Image in color will be displayed

A computer screen shot of text

AI-generated content may be incorrect.A screen shot of a computer code

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**A screen shot of a computer program

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* We imported the given function which removes hair, but outputs 3 items: the blackhat version, the threshold of the grayscale and the actual image with removed hair.
* The function requires the colored and the greyscale version as parameters, which we obtained from the iterator
* We only output the image cleared of hair

**(img 70)**

**A close-up of a fingerprint

AI-generated content may be incorrect.A blue graph on a white background

AI-generated content may be incorrect.**

**A black and white image of a black and white image of a black and white image of a black and white image of a black and white image of a black and white image of a black and

AI-generated content may be incorrect.A red and black image

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Since we used the suggested threshold of 120, not all of the lesion images are masked entirely correctly by the machine. This appears to be caused by the natural difference in hue and shade of the skin, as not all provided lesions have a contrasting color difference between healthy and sick skin. In the example of the 70th, this can be observed in the image after the hair removal, the color of skin is pretty uniform. Now shifting our attention to the masked version, we can see that the lesion itself has been successfully circled, however the mask also selected some darker patches of skin off the bottom left corner, which seem to be nothing more than a variance in color.

This example of machine error, flashes a light on the weak spots of our code; when the melanoma is of a similar color to the healthy skin found around the lesion, the program might mistake this for illness. Further insight into this topic, may be offered by the histogram of the grayscale, which is seemingly quite concentrated on the mid-range, left skewed, with drastically uneven tails. Perhaps for future reference the histogram could be used to predict the accuracy of which the program can select the mark on the skin.

To contrast the previous observation, we will take another example from our data sample. Even to the human eye the shade difference between the healthy skin and the possible cancerous patch is much more visible. If we look at the histogram for the image version without hair, we notice how the dark hues spike very far on the right, while the rest of the skin maintains a somewhat low and constant range. This type of spread-out histogram could be an indicator of an accurate depiction of masking. It’s particularly interesting how the mask takes a chunk out of the centre of the lesion. At first glance it might look wrong, but analysing the original image once again, it becomes clear, that that patch might actually be healthy skin! The fact that the discoloured patch isn’t uniformly spread on the surface of the skin, might be an important indicator to specialists on how the patch progresses in time. This reveals a strong suit of our program; it is the sensitivity to changes within the lesion. If monitored over a longer period of time, multiple masks of the same lesion can uncover insightful progression stamps and perhaps even help predict the progression of certain diseases. We’d like to compare this to a weather map chart showcasing the movement of clouds. (img 5)

A graph of a graph

AI-generated content may be incorrect.A close-up of a red and purple blot

AI-generated content may be incorrect.