Training the model

epochs is an expression of number of times a model has trained. Relative to epochs = 20 first, 10 was tried. I saw the model is still learning. i tried a second number 15, 50 and 100 and i noticed that 20 gives the most accurate result, the model in this level has been trained and proven. • callbacks i used two of keras functions, the goal is to save the model after each train, when I have 20 epochs, all 20 will be saved. In order to be able to draw losses for the test and the train, also save the models that are useful to us in the memorization process during training

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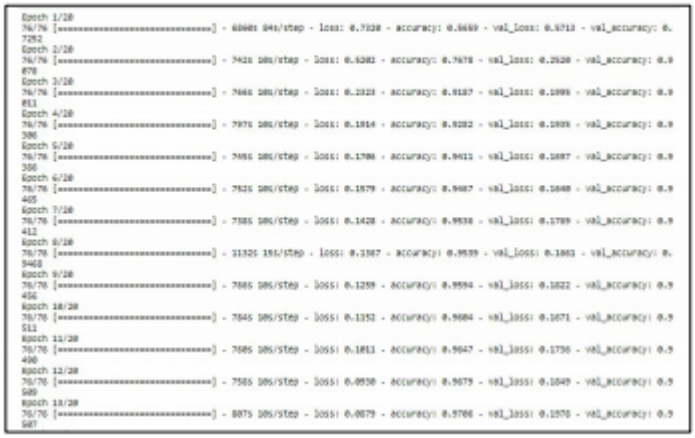
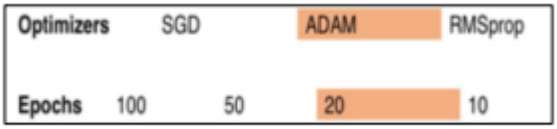
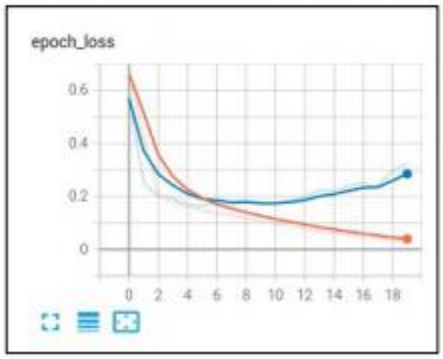
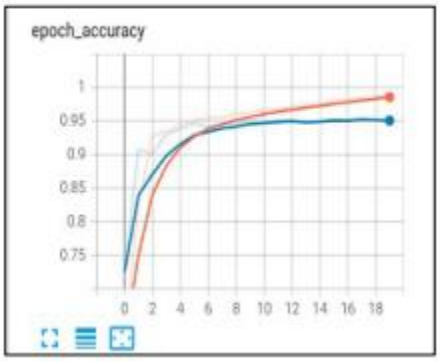


• Model.compile In order to be able to come up with training options which is the optimizer, i chose Adam because it had the best result during training, and there are other queries like SGD, Rmsprop, but I have seen that they are not working.



training options The (1e-3 à 10^-3) is a learning ratio in order to make the error rate close to zero. We tried (1e-2 à 10^-2) but it didn't use it because it wasn't close to zero. Loss is the difference between two classes, and we chose binary crossentropy because it is only two class, if it is more than that I will not be able to choose it. in metrics (accuracy) is selected during the training time because the focusing is on the accuracy.





Orange line is train, and blue is validation.

- loss: The closer we get to zero, the error rate decrease which is 0.03%.
- accuracy: The accuracy of our model is 95.5%.

Testing the model

First,i load the model then calculate the losses (the error to update the weight) and accuracy of the model, then i tried an image before going to the GUI, to do that load an image then turn it as an array. finally do the prediction if the score is < 50% the result is uninfected otherwise its infected.