Abstract-skin cancer analysis

January 24, 2020

0.1 Context

Early detection of conditions of skin cancer is very crucial thus pigment skin diagnosis field has been growing rapidly. Recently various kinds of detection methods and the computerised algorithm is used to improve the accuracy of detection.

0.2 Objective

For this specific dataset, computation time is more important than getting a higher accuracy. As for cancer, it is crucial to detect the disease at early stage, which means dataset of large population need to be processed as quickly as possible. In this primary level, accuracy is calculated between lower resolution model and higher resolution by keeping the computation time factor in mind.

0.3 Method

To achieve this, the project follows the CRISP DM approach for the data mining process, specifically dividing the process up to stages and reports.

0.4 Results

Accuracy is higher if more lower resolution images is used rather than small number of high resolution images. Loss keep increasing in every model and optimizer couldn't do anything to keep it in the right track. For low resolution images, accuracy is highest but unstable. Loss in low resolution images is 1 to 2.5 but in higher resolution images it is 2 to 6. For lower resolution images everything was done on unscaled, imbalanced class after fixing this issue only 800 picture left to analyse in case of higher resolution images.

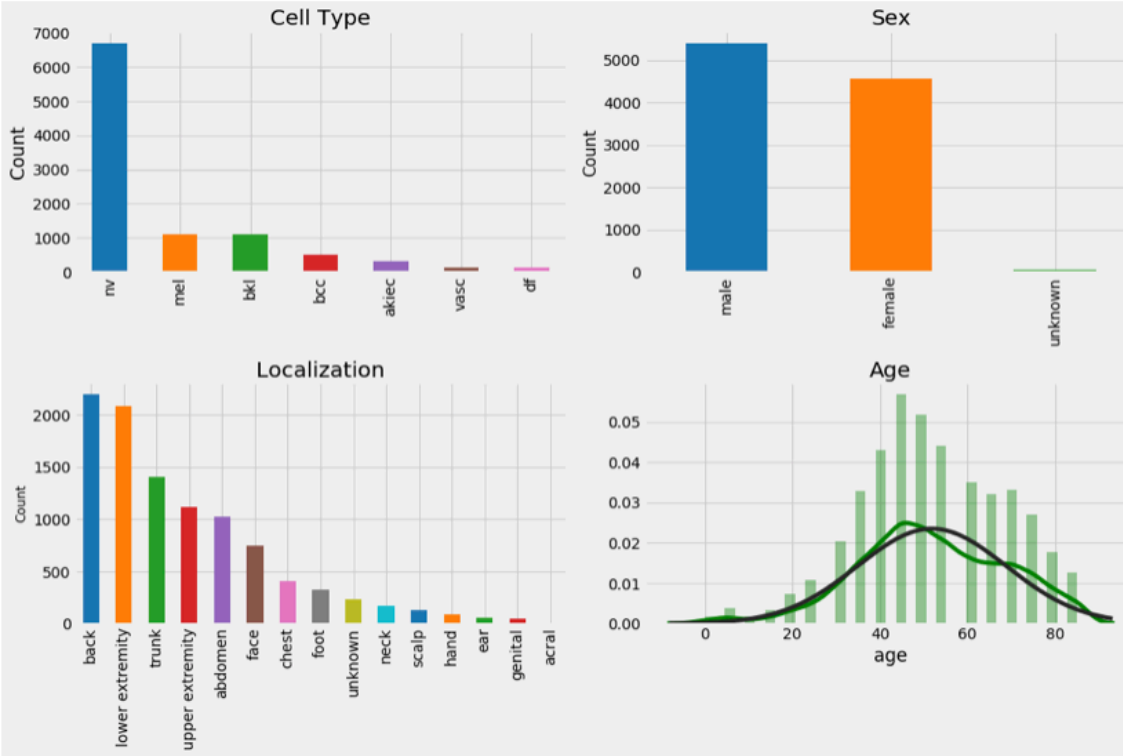
0.5 Novelty

Other literature usually covered discriminatory performance of models but didn't consider the computation time or what will happen of there is larger is dataset, as for early detection, model need to be trained on larger population.

[11]:
```
from IPython.display import Image
```

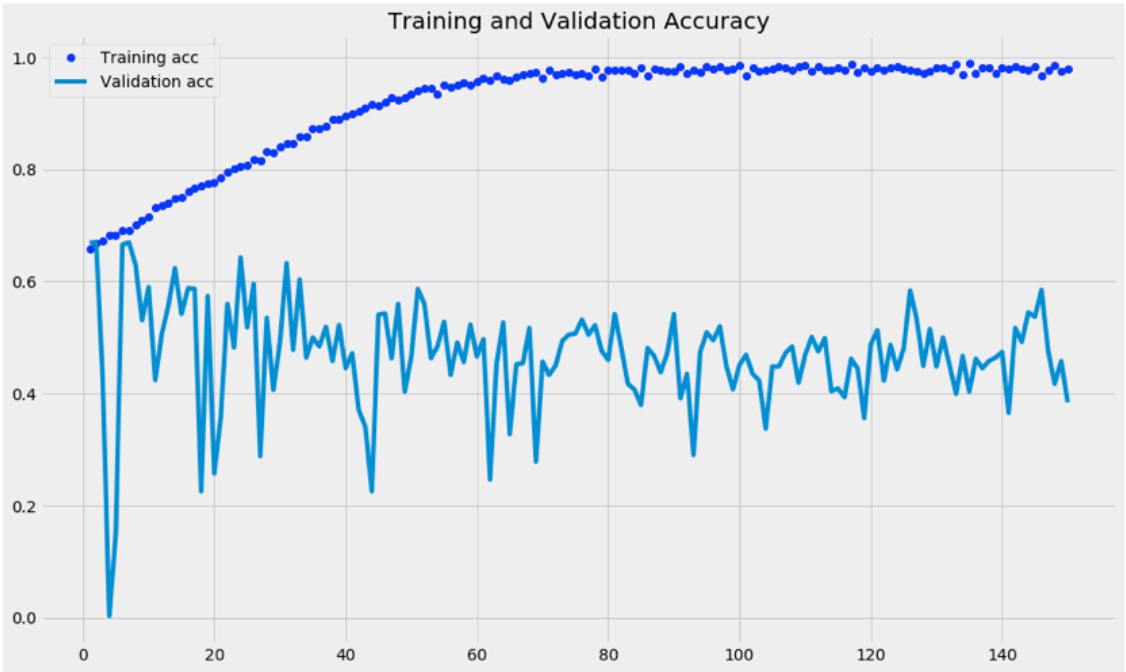
[8]:
```
summary_dataset = Image(filename='/Users/ragnar/Desktop/f1.png')
summary_dataset
```

[8]:



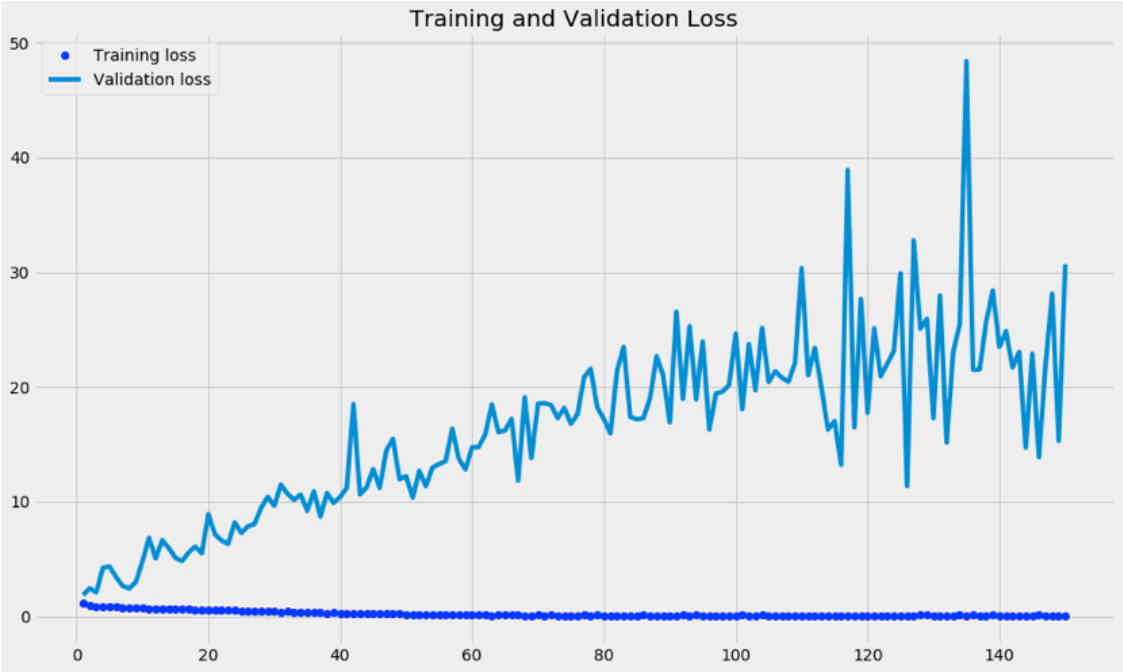
[9]:
```
train_val_acc = Image(filename='/Users/ragnar/Desktop/f2.png')
train_val_acc
```

[9]:



[10]:
```
train_val_loss = Image(filename='/Users/ragnar/Desktop/f3.png')
train_val_loss
```

[10]:



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