

Melanoma Detection

Problem Statement:

To build a CNN based model which can accurately detect melanoma. Melanoma is a type of cancer that can be deadly if not detected early. It accounts for 75% of skin cancer deaths. A solution that can evaluate images and alert dermatologists about the presence of melanoma has the potential to reduce a lot of manual effort needed in diagnosis.

This project uses a dataset of about 2357 images of skin cancer types. The dataset contains 9 sub-directories in each train and test subdirectories. The 9 sub-directories contain the images of 9 skin cancer types respectively.

Conclusions

The model tends to overfit, by using a simple CNN network without any regularization.

After performing data augmentation, the model tends to perform better, and the overfitting problem is less significant.

Perform class imbalance tends to further deteriorate the CNN model, along with applying certain regularization.