

ABSTRACT

Machine learning techniques and Deep Learning Classifiers are being deployed to improve diagnosis and care in medical sciences. Since the Medical Sciences data is scarce in terms of volume therefore, Deep Learning Models encounters over fitting followed by poor accuracy. Data augmentation is basically just a method to enlarge your dataset using existing annotated data in order to curb this issue. In this research I will explore the problem of data augmentation through traditional transformations i.e. cropping, rotating and flipping input images. I am also intended to experiment with image synthesis technique based on the GAN network in order to generate images of different styles that will improve the classifier's accuracy for limited datasets particularly of medical sciences. Finally a comparison will be made between the accuracies of CNN models using neat data and augmented data in order to validate my data augmentation approach. Furthermore a reliable data augmentation approach will save the effort of needing manual transformations in newly generated images in comparison with original images using a method like GAN.