loss and accuracy results. Moreover, the processing time for ResNet50 in training and predicting the CXR images is much faster than the VGG16 model's processing time. Hence, ResNet50 performs better than VGG16 based on the result of loss and accuracy and the processing time for the model to train and predict the data.

IV. Conclusion

This research detailed CNN model-based architecture to detect pneumonia on the CXR image dataset. The significance of this study is to broaden the roles of the medical imaging department to include not only taking images of portions of patients' bodies for diagnostic purposes but also assisting medical experts in interpreting the CXR images by fully utilizing the pneumonia detection system. The proposed approach analyzes CXR images, which will better assist medical experts with diagnosing patients, which in this case is to detect pneumonia. Besides that, the system also reduces the time to analyze the CXR images. The findings of this study are beneficial for expanding the use of computer-aided techniques in medical fields. These techniques can be further developed for analyzing other types of medical imaging, such as CT scans and MRIs. The training process uses VGG16 and ResNet50-based CNN models using 16 epochs with 326 steps each. The result obtained is 99 % accuracy for VGG16 and 98% accuracy for the Resnet50 model. The proposed system is expected to perform better in real-world scenarios and diagnose Pneumonia through CXR images. The future scope of this research is to develop a highly accurate model to detect various types of pneumonia, bacteria, and viruses.

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